New insights into Lucas paradox

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REDX
2021

10th **International Scientific Symposium**

REGION
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DEVELOPMENT

SVEUČILIŠTE J. J. STROSSMAYERA U OSIJEKU	EKONOMSKI FAKULTET U OSIJEKU	HRVATSKA AKADEMIJA ZNANOSTI I UMJETNOSTI Zavod za znanstveni i umjetnički rad u Osijeku	UNIVERZA V MARIBORU Ekonomsko-poslovna fakulteta	UNIVERZITET U TUZLI Ekonomski fakultet u Tuzli
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10th
INTERNATIONAL SCIENTIFIC SYMPOSIUM
REGION, ENTREPRENEURSHIP, DEVELOPMENT

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REGION, ENTREPRENEURSHIP, DEVELOPMENT

Content

FOREWORD

The 10th International Scientific Symposium Region, Entrepreneurship, Development – RED (former GIH) has been prepared in accordance with health protection requirements due to COVID 19 pandemic and therefore, despite our wishes, is virtual. It is much less than what the conference should be, and we all miss the live interaction, networking as well as social events that were always well accepted.

Desipte this, the conference has again attracted many authors from Croatia, Bosnia and Herzegovina, Slovenia, Hungary, Austria, Poland, Portugal and Russia. Altogether 83 papers were accepted for presentation and publication. The papers are divided into three broad groups: region (26 papers), entrepreneurship (14 papers) and development (43 papers). We notice the increase of topics related to entrepreneurship, which justifies the changes we introduced in the conference concept last year. Also, several papers deal with the issue of COVID 19 pandemic from different prespectives, indicating the scientific response to externalities we are facing right now.

Our aim is to continue with qualitative changes and improvements around the conference and the proceedings. The key note speech of 2021 is given by Prof. Dr. Klaus Sailer, professor of Entrepreneurship at the Munich University of Applied Sciences and CEO of the Strascheg Center for Entrepreneurship (SCE) and deals with the role of universities in building an entrepreneurial eco-system.

Same as in last two conferences we hereby announce the best conference paper, which will receive the official certification and a fee waiver for the next RED 2022 conference. The best paper of RED 2021 is "The role of sophisticated technology in managing heritage-based tourism", prepared by Ines Milohnić from Faculty of Tourism and Hospitality Management in Opatija and Danijel Drpić from Polytechnic of Rijeka. This paper is one of several that deal with area of tourism, one of the most important business activities in Croatia. It examines the role and importance of information technology in providing information on tourism events and, in particular, the relationship between the manner in which information is obtained and visitor spending as well as their satisfaction with particular event. Congratulations to the authors and we hope to have them next year with similarly good input.

All accepted papers, as usual will be published in conference proceeding with ISSN on USB stick and will be sent for evaluation to Clarivate Analitics.

Having in mind that this is the 10th anniversary of our meetings and that it is happening at the same time as Faculty of Economics in Osijek is celebrating its 60th anniversary, both Organizing and Program Committees regret that we are not able to meet alive and celebrate the event the way we wanted to. We want to thank all the participants and reviewers for helping us continue during difficult times, as well as for patience and loyalty. You keep us going on and trying to improve as much as possible.

Mirna Leko Šimić
RED 2021
Organizing Committee Chair

TOPICS

1. **Region**

2. **Entrepreneurship**

3. **Development**

RED
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1. REGION

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CSR FOCUS OF HIGHLY RATED INTERNATIONAL HOTELS OPERATING IN RUSSIA AND CROATIA AS REPRESENTED ON THEIR WEB-SITES IN THE PERIOD OF COVID-19 PANDEMIA

ABSTRACT

The main purpose of this study was to illustrate how highly rated hotels operating in Russia and Croatia are positioning their CSR practices on their web sites with the special emphasis on their CSR measures, related toCOVID-19 crisis. The conclusion is based on the analysis of the web-sites of 62 hotels attributed to of upscale to luxury class international hotel brands [17], located in major destinations in Russia: Moscow, St, Petersburg, Sochi, Zagreb and Dubrovnik as well as in-depth analysis of the information, regarding 8 representative hotels of the class investigated in the mentioned cities. The results show that CSR is actively developed in all hotel chains investigated, but there is an information problem with the placement of this information at specific websites of Russian and Croatian representative hotels, which do not apply to the measures related to COVID-19 prevention, which is positioned clearly and in detail by the hotels represented.

Keywords: *Corporate social responsibility, Hotels, Russia, Croatia, COVID-19.*

1. Introduction

The global hospitality industry is going through hard times - hotel occupancy plummeted due to COVID-19 compared to the demand before the pandemic. Nevertheless, all experts in the field of corporate social responsibility (CSR) emphasize the importance of adjusting current business processes to the needs of the target market. The guarantees of protection and

cleanliness, food safety, quick responses and resolution of issues related to the health of guests become the priority. Those inputs cause transformation to CSR focus of the hotel business.
We believe that it is very important for a hotel to have an open policy of informing consumers while the problem exists. On-line resources - websites and social networks are the main sources of information during social isolation.

2. Literature review

The concept of CSR, known since the early 1970s, defines it as a collection of policies and practices relating to the stakeholders, values, compliance with legal requirements, respect for the community and the environment, as well as commitment to the corporate world to contribute to sustainable development [5]. It is widely accepted, that the success of the business relates to the loyalty of stakeholders' social disclosure of company, practices lies in the basement of trustful and fruity relationship between the companies and their and stakeholders [3], [6]. There is a wide array of empirical research examining the relationship between CSR, corporate reputation, brand awareness and customer loyalty in different business sectors [15].

According to Woldeamanuel at al. (2021) in their research paper *"Corporate Social Responsibility in Time of COVID-19: What should Researchers Focus on During and After the Pandemic"* the concept and application of CSR was intensively discussed in academic and professional publications before pandemic. The major focus of CSR was related to financial performance, corporate governance and business reputation while today, during and after pandemic same issues are not of major concern [16].

CSR is the continuing commitment by business to act ethically and contribute to economic development of the local community or society at large, along with an increase in the living standards of workers and their entire family [13]. (Kotler & Lee, 2005). It can be defined as a business commitment contributing to sustainability development while collaborating with different stakeholders such as employees, representatives, families, local communities and the general public with the aim to improve the life quality and benefit both; business and the development of nations Main components of the CSR traditionally associated in theoretical and professional publications namely: compliance with the legal requirements, ethical values, environmental concerns and respect for the people [14] and companies do not change, but should have the strong emphasis on safety of the guests and employees in face of Covid-19 dangers.

According to numerous publications, four dimensions of CSR, including economic, legal, moral and voluntary responsibilities influence the reputation of the company, both internal and external clients, as long as the other stakeholders [4]. To boost its reputation, the hospitality industry is required to conduct its activities in an ethical manner [10]. As Karani (2011) stated in addition to enhancing the reputation, CSR activities can also affect patterns of work and a sense of ownership to the employees of the hotel where they work, so they become more productive. Sense of belonging, ownership, and building the company's reputation, is not separated from the perception of the workers themselves. Thus, perception that arises is influenced by demographic factors. [12]. Hoffman (2011) assumed that the company requires recognition and social acceptance for the long-term viability (business) with emphasis on the emotional aspects of reputation building [7].
According to Fombrun (1996), the theory initiates the reputation of corporate identity as the first point that is reflected through the company's name and other views, for example, from annual reports, brochures, product packaging, office interiors, employee uniforms, advertising,

media, written materials, and audio-visual. He defined corporate reputation as a perceptual representation company's past action and future prospects that describe the firm's overall appeal to all of its key constituents when comparing with other leading rivals. According to him, there are four sides of a reputable company that need to be addressed: credibility (credibility in the eyes of investors), trustworthiness (trustworthy in the eyes of employees), reliability (reliable in the eyes of consumers), and responsibility (responsibility in the eyes of community). The research conducted by Gunawan and Paja Putra (2014) amongst 13 five stars' hotels in Jakarta in year 2012 shows that CSR has a significant relationship with the corporate reputation and employee engagement. [9]. Inoue and Lee (2011) discuss that here is a positive correlation between the CSR and corporate financial performance in tourism related industries. [8].

In addition, the contemporary approach to CSR concerns the promotion of CSR in different media such as official websites of the hotels and social media. Hotel stakeholders are nowadays demanding not only for sustainable products and/or services, but also require the corporations/the brands to offer greater transparency and to reveal their accountability with regards to the way they carry out business [11]. According to the research conducted in Bulgaria by Anastassova (2015) the major indicator of CSR reporting on the website of the hotels is related to consumer concern (33.8% in 2014 and 38.4% in 2015 amongst other indicators such as ecological problems, local communities, etc.) [1]. When analyzed in a perspective of current trends and website reporting of CSR in the time of COVID – 19 pandemic, there is a relationship between pandemic, health and safety concerns of consumers. Therefore, it is very important to anticipate the representation of CSR indicators online using websites as a media during the pandemic, especially in international branded hotels in Russia and Croatia.

3. Research methods

In this study, authors consider the general positioning of 4 to 5 star hotels, representing international chains, which operate in Russia, according to the selected CSR parameters and the availability of information on the measures taken due to COVID-19: the method of content-analysis was applied to identify how information is presented at local websites hotels situated in Russia and Croatia and international websites of hotel chains. The research consisted of two stages. In the first stage, the websites of 62 highly rated hotel situated in Russia were analyzed with regards to CSR representations where the COVID-19 measures were included as one of the important parameters of analysis. Authors believe that the anti COVID-19 measures are important dimensions of the CSR and should be translated to all the stakeholders through the website of the hotel in the clear and well structured way.
The second stage of the research was the comparison of the selected representative hotels in Russia and Croatia with regards to CSR representation on the hotel websites. In this study, authors analyzed the information provided by official online sources (websites) of Moscow, St. Petersburg, Sochi, Zagreb and Dubrovnik hotels. The study was conducted from April to September 2020, during the full and partial lockdown.

According to this assignment we needed to assess the availability and accessibility of information on corporate social responsibility (CSR) posted by Russian hotels in publicly available sources.
The main assessment criteria included:
- a clear positioning at the local website of the Hotel itself;
- a clear positioning at the international website of the Hotel;
- information on safety and measures applied due to COVID-19 at the local websites of the Hotels.

4. Research results and discussion

As the collected data have shown, comprehensive CSR documents, clear and structured information and the entire main CSR policy of hotels are presented and emphasized at the official international websites of hotel chains.

The local (specific) websites of hotels are different; they mostly contain commercial information and the presentation part. Only two out of eight local hotels had information about the CSR, including environmental protection issues, regulatory documents relating to internal employees.

Figure 1: Comparison by criteria of information presence on the hotel's web-sites, %
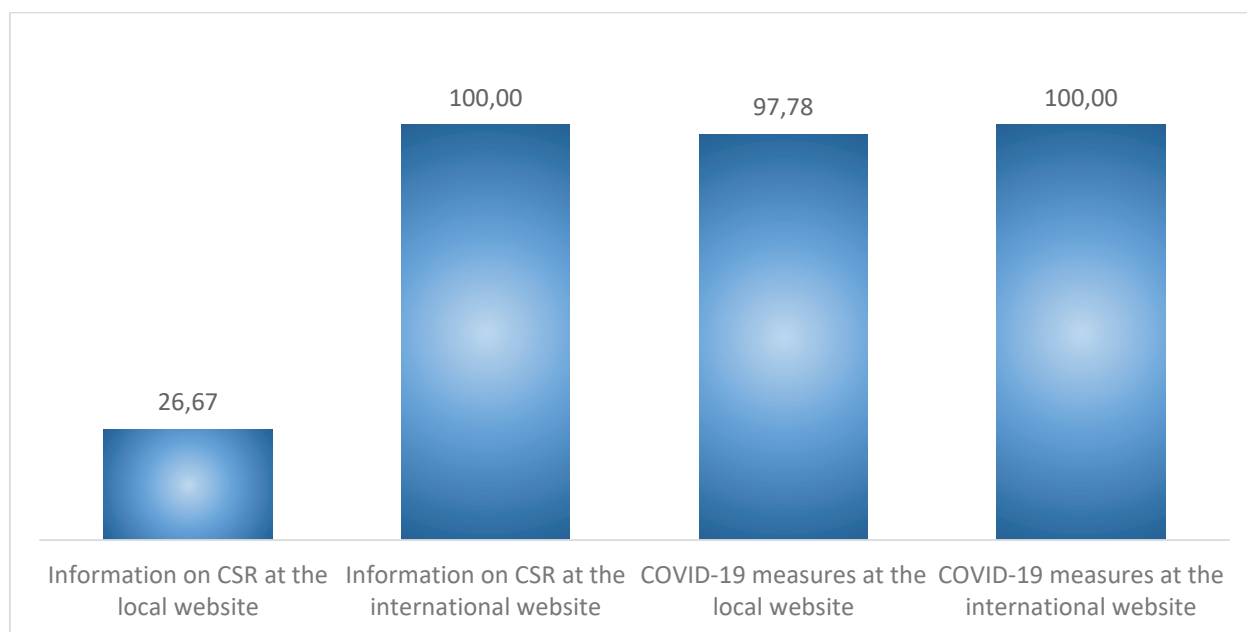
Source: Authors

One of the characteristics of certain Moscow, St. Petersburg and Sochi hotels which represent international chains of top rated hotels is expressly stated measures taken in connection with COVID-19, but less emphasized CSR statements. Russian hotel websites focus mainly on sales characteristics and hotel reservations. The advantages of CSR are stated natively (in the news feed, a blog, in the information which has to be accessed at the websites).

The sections with the information / links to the main website of the chain (the international website) are either less obvious (located at the bottom of the pages), or require the user to have a specific goal and find the necessary information in the search menu.
Here are the most illustrative examples of hotels included in our judgment sample.
The detailed sample included 8 hotels with high average ratings according to several sources, such as Luxury Hotels Guide, Booking.com, TripAdvisor (at least 8.7 out of 10 (or at least 4.5 out of 5) points of the overall rating for the past year).

Table 1: Selected Russia-based hotels CSR information representation on the Local and International Web-sites according to chosen parameters

No	Hotel	Clear CSR Positioning at Hotel Website	CSR presented at International Website	COVID-19 Safety Measures
1	Novotel Moscow City [18]	No	yes	yes
2	Hilton Moscow Leningradskay [23,24]	No	yes	yes
3	Marriott Grand Hotel Moscow [27,28]	No	yes	yes
4	The Ritz-Carlton [30]	No	yes	yes
5	Holliday Inn Moscow Lesnaya [26]	yes	yes	yes
6	Hotel UKRAINA Moscow (Radisson Royal) [35]	yes	yes	yes
7	Four Seasons LION PALACE ST. PETERSBURG [21,22]	No	yes	yes
8	Rixos Krasnaya Polyana Sochi [31, 32]	No	yes	yes

Source: Authors

Novotel Moscow City is a popular modern business-class hotel, it has an online sales page with an emphasis on CSR, and there are no references or documents to the main website or CSR documents. But the website https://novotel.accor.com/ provides information on CSR in sections, such as environmental protection, quality and service programs, programs for personnel, mission and values. There is no publicly available documentation outside the website (published material).

The hotel brands belonging to the Marriot Bonvoy chain, for instance, show a similar trend: the websites of The Ritz-Carlton and Marriott Grand Hotel Moscow provide exclusively commercial information and present the hotels, with an emphasis on and links to applicable measures and cancelled measures related to COVID-19. But the user will not be able to find anything about the activities related to the corporate social policy of the companies quickly and transparently at the website. It is very difficult to find a link to the international website with information - you either need to know which icon to click on or find your client path to the desired section in a long empirical way.

A small number of Moscow hotels have partial and customer-friendly information on CSR at their websites. For example, at the end of its selling landing page Holiday Inn Moscow Lesnaya has information about the Green Engage program, which invites hotel guests to become participants in a multifaceted global initiative and contribute to environmental protection. This creates the image of a high CSR organization.

Hotel Ukraine, attributed to the Radisson hotel chain, partially meets all the CSR parameters which are of interest to us. The website has information on COVID-19 in the news feed, and, in an old school style, there are official documents on social assessment of working conditions and legal information available for general review and downloading. But, like the other hotels, a comprehensive program of activities is given only at the Russian version of the general website of the Radisson chain.

In the table below we present our findings on CSR manifestation in the web–sites of representative high-level hotels in Croatia, attributed to international hotel chains.

Table 2: Selected Croatia-based hotels CSR information representation on the Local and International Web-sites according to chosen parameters

No	Hotel	Clear CSR Positioning at Hotel Website	CSR presented at International Website	COVID-19 Safety Measures
1	Espalanade Zagreb Hotel [20]	Information in awards section	n/a	yes
2	Double Tree by Hilton Zagreb [25]	n/a	yes	yes
3	Sheraton Zagreb Hotel [34]	No	yes	yes
5	Best Western premier Hotel Astoria [19]	Yes	yes	n/a
6	Westin Zagreb [36]	No	yes	n/a
7	Rixos Premium Dubrovnik [33]	No	yes	yes

Source: Authors

Due to the fact that a wide variety of CSR programs and policies are presented in international information sources of hotels, we will further consider certain parameters which have an impact on their image.

The methodology of this analysis is based on the parameters that were selected based on the previous authors hotel CSR studies [2], and also considered from the viewpoint of the client's path at the companies' website – the accessibility and an easy search for information. The study considered the following parameters of included CSR information:
− attitude to personnel;
− interaction with clients / guests;
− interaction with the environment;
− waste management;
− interaction with local communities;
− charity;
− volunteering.

The figure below shows the scope of all available information about CSR according to the placement, i. e. sources where the aforementioned principles are present

Figure 2: Scope of Information presented by placement (sources), average score, %
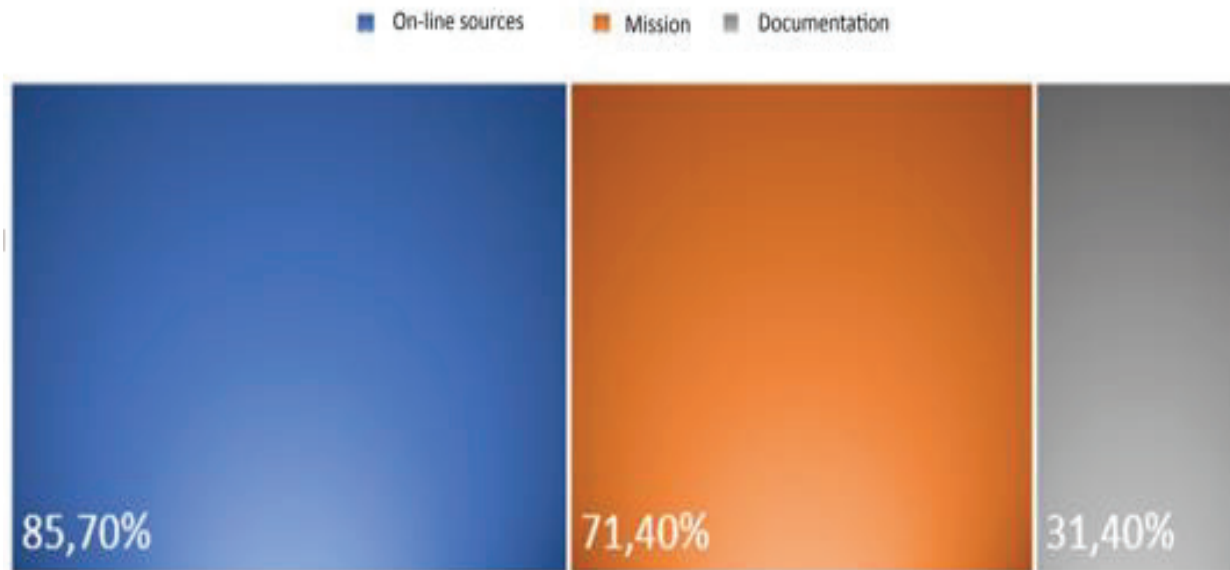
Source: Authors

Thus, most of the information is available in open on-line sources which are corporate international websites of hotel chains, where separate pages / sections are devoted to CSR. A client interested in this information only needs to go to the CSR section and read the publications according to topic.

Hotel mission is the second most popular CSR information section. Since there is a clear tendency to position hotel brands in this market segment, their mission is expressed in a whole set of narrative principles which are conveyed to customers in all possible ways (on-line, in advertising, off-line banners in the hotels / announcements etc.)

The last place is taken by the official documentation. Most hotels mention available CSR documents, but it is extremely difficult to find these documents in the public domain (some hotels have documents posted in the web, but it is problematic for an ordinary user to view them without an intensive and long search).

In terms of analyzing the level of awareness according to the selected CSR parameters at the level of all considered places / sources (mission, documents and website / social networks):

- the most covered topics are "attitude to personnel" and "interaction with the environment";
- the least covered topics are "charity" and "volunteering".

Figure 3: Web-sites information representation according selected CSR criteria

Source: Authors

The summary chart given below shows the correlation of the information presented according to CSR criteria within the parameters in question – based on those data we can assess the level of its accessibility for an ordinary user (potential guest).

Figure 4: Distribution of the level of representation of hotel CSR practices, according to selected CSR criteria by placement, in %
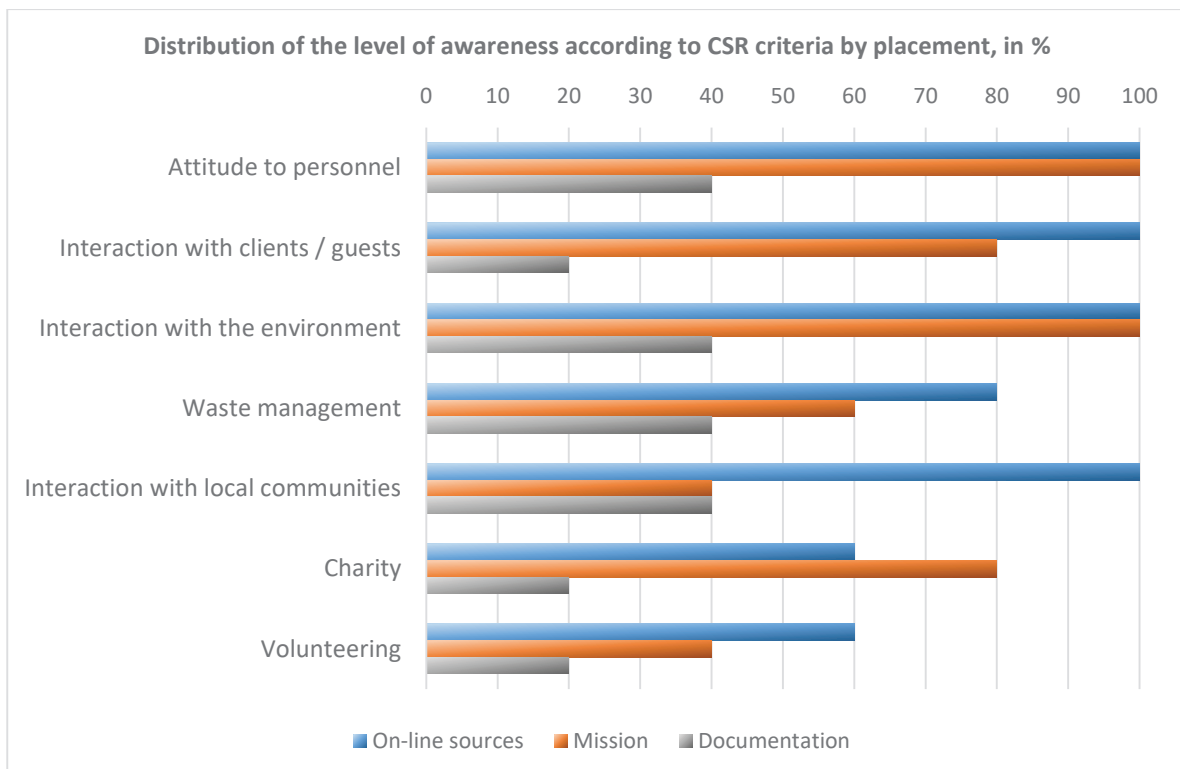
Source: Authors

4.1. COVID-19 safety measures

As part of the safety measures against COVID-19 virus, almost all hotel chains not only reinforced the cleanliness and disinfection measures, but also introduced and developed new cleaning and disinfection programs in order to make the experience of guests more comfortable and safe.

Having analyzed most of the programs, we identified the key components of the innovations:
– improving cleaning programs in public places with frequent disinfection of all areas (elevators, handles, switches, etc.);
– improving room service programs (which includes preventing anyone from entering the room after disinfection);
– social distancing (where possible);
– enhanced food standards, new buffet / service delivery protocols;
– various other measures: ultraviolet lamps, providing disinfectant wipes, not using paper items (napkins, cups, etc.);
– contactless check-in, check-out, payment;
– improving the safety and well-being of the staff through the provision of personal protective equipment, training and implementation of reinforced protocols.

All these and other measures demonstrate the principles of CSR to both external and internal stakeholders (cleanliness, disinfection, new service protocols / personnel training programs in new conditions, increased personal protection, bonuses and compensations for observing standards and adherence to the campaign).

5. Conclusions

When it comes to reaction to the COVID-19 crisis than the new dimensions should be added to the CSR components related to measures aimed both at the guests and employees. Regarding the use of online sources as an effective tool of promoting the CSR activities and building the reputation of the hotels amongst stakeholders, it is important to create reliable content and information on the websites of the hotels, the very important part of which is CSR representation. The research conducted by analyzing selected highly rated international hotels in Russia and Croatia has shown that the CSR is actively developed in all international hotel chains under research. Authors conclude that there is an information problem with the reporting of CSR activities' results and initiatives at specific local websites of the representative hotels. The Russian based highly rated international hotels show similar results as those in Croatia regarding the most of the criteria except the positioning of COVID-19 measures on the local websites which may be caused by different state regulations in the countries or the policy of content creation and its positioning of different sections on the websites. There is no evidence and clear connection that hotels relate COVID-19 measures to CSR.

There are issues with finding the information about CSR, since the information at the local websites of hotels is not easily accessible for the customer. The websites containing clear and user-friendly information about CSR actions inspire more confidence and interest of consumers in terms of image influence and reputation building through CSR activities. A vast majority of hotel chains show the representation of CSR information in the mission section and in publicly available on-line sources (websites) being part of the information content. CSR is very often positioned in the mission section of hotel chains, which speak about the key aspects of its development. At the same time, the information about CSR and the introduced activities, published in publicly available corporate documents, is extremely rare or complicated to find.

Although the COVID-19 information is available at all hotel levels, it could be used more persuasively to highlight the CSR orientation of the hotels. The global program for cleanliness and safety is promoted by international hotel websites but according to the authors' opinion anti COVID-19 safety measures and other COVID-19 related activities could be more clearly positioned in the web-sites as the important manifestation of hotels CSR. Limitations of the research is seen in the number of the selected hotels under research. Further research should include detailed analysis of parameters of CSR represented at the websites as well as the empirical research of the hotel guests' perception and satisfaction with CSR representation on the hotels' websites.

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Four seasons official web-site: https://www.fourseasons.com (accessed 9.10.2020)

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EXPANDING QUANTITATIVE TO QUALITATIVE LOCAL GOVERNMENT BUDGET TRANSPARENCY MEASUREMENTS: THE CASE OF CROATIAN OLBI AND OLBI+[1]

ABSTRACT

Measuring and understanding local government (LG) budget transparency (LBT) has been an important challenge. Since 2015, the Institute of Public Finance (IPF), has been publishing the Open Local Budget Index (the OLBI), the annual measure of the availability of five key budget documents on the official websites of all 576 Croatian LGs – counties, cities and municipalities. As one of the important shortcomings of the OLBI has been its focus on the quantity of these documents, the IPF has developed the new OLBI+, which also captures their quality. This paper presents the development of the OLBI+, contributes to the scarce literature explaining developments and measurements of standardized online local government budget transparency (OLBT) and will, it is hoped, enable the replication of this measure in other environments. It also gives a brief overview of the initial first year application of the OLBI+ in Croatia, averaging 69 (out of a possible 100) for all LGs, but with huge differences among them. One of the biggest deficiencies observed is the lack of budget documents with narrative explanations and in machine readable format, which weakens the possibilities for public monitoring and participation in local budget processes.

Keywords: *local governments, budget transparency indices, Croatia.*

1. Introduction

National and local governments often fail to provide public goods, even basic ones. According to Khemani et al., (2016) the principal reason for this government failure is public sector leaders who are not selected and/or sanctioned on the basis of their performance. The same authors argue that the way to address this failure is by merging transparency (citizen access to publicly available information about actions of those in government) and political engagement (citizen participation in selecting and sanctioning the national and local leaders).

The budget is the most important government policy document explaining what government will do, how and when, and how much it will cost. The budget information can most conveniently and cost effectively be disseminated by the Internet (Styles & Tennyson, 2007). Thus, budget transparency (BT) and fiscal transparency (FT) are important because they enable citizens to obtain budget/fiscal information and to participate in budget processes (e.g. analyze the efficiency of budget revenues/expenditures and request funds for activities/projects). Higher

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online FT/BT can help to reduce unnecessary government expenditures, deficit and debt (Rios, Guillamón, Benito, & Bastida, 2018; Vicente, Benito, & Bastida, 2013), improve democracy by helping voters to check the fulfilment of incumbents' promises/commitments (Herzog, 2017) and diminish corruption, as more information increases the likelihood of corrupt leaders being removed from office (e.g. Guillamón, Bastida, & Benito, 2011). Furthermore, on the local level, publication of the results of LG FT/BT indices creates citizen and peer pressure on local incumbents to be more budgetarily open and transparent (da Cruz, Tavares, Marques, Jorge, & de Sousa, 2016; Mourao, Bronić, & Stanić, 2020; Rios et al., 2018).

In order to help citizens to participate more actively in the budget processes we need to find out more about BT/FT (i.e. its determinants, impacts and consequences), but firstly we need to measure it. However, research has so far failed to produce standardized tools to measure and compare government FT/BT (e.g. da Cruz et al., 2016; Piotrowski & Vanr Ryzin, 2007; Stanić, 2018), especially at LG levels (Esteller-Moré & Polo Otero, 2012). An endeavour is made in this article to solve the problem of how to develop and measure both qualitative and quantitative aspects of OLBT, which, it is hoped, will enable the replication of this measure in other environments.

Since 2015 the OLBI has been used for measuring BT for all of Croatia's 576 counties, cities and municipalities (Ott, Bronić, Petrušić, Stanić, & Prijaković, 2020). The OLBI has been a qualitative measure focused on the availability and timelines of LGs' five key budget documents (Executive's Budget Proposal (BP), Enacted Budget (EB), Citizens Budget (CB), Mid-Year Review (MYR) and Year-End Report (YER)) based on International Budget Partnership (2019) research. The three of the other key budget documents (Pre-Budget Statement (PBS), In-Year Reports (IYR), and Audit Report (AR)) used in International Budget Partnership (2019) research are not available for all LGs in Croatia and thus were not included in the OLBI. The overall average LBT for all LGs, measured by the OLBI, improved from 2015 to 2019 from an average of 1.8 to 4.1 (out of possible 5) (Ott, Bronić, Petrušić, Stanić, & Prijaković, 2020). However, the same authors argue that there are huge differences in BT among individual LGs. In the latest research cycle (2019) almost 20% of LGs did not publish all three documents required by law (EB, MYR and YER), and 41% of them did not publish both documents recommended by the Ministry of Finance (BP and CB). Because the OLBI was only a quantitative measure, in 2019 a new index (the OLBI+) was introduced with the aim of also measuring the quality of the same five key LGs' budget documents.

Thus, this article contributes to the scarce literature about developing and measuring the OLBT as it analyses the development and initial year of application of the new qualitative LBT index (OLBI+) in Croatia, with the average score for all LGs being 69 (out of a possible 100). It shows that even when LGs publish key budget documents often they do not release full documents in machine readable formats.

The literature review that follows this introduction is focused on the definition of BT and an analysis of previous OLBT measurements. The methodology section explains the development the OLBI+ after which comes a short analysis of the first year of the implementation of the OLBI+ in Croatia. The paper finishes with conclusions, lessons learned and recommendations.

2. Literature review

No common definition of BT exists (see for example (OECD, 2017; World Bank, 2015)) and in fact it is very often used as synonym for FT (OECD, 2002; Sedmihradská, 2015). However

Kopits & Craig (1998, p. 1) define FT very broadly "as openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections. It involves ready access to reliable, comprehensive, timely, understandable, and internationally comparable information on government activities". In this article BT is focused only on the quality and quantity of five key LG budget documents and implies insights into complete, accurate, timely and understandable information regarding the budget (Ott, Mačkić, & Bronić, 2018). A similar approach is taken by International Budget Partnership (2019) research which periodically measures central governments' BT with the Open Budget Index (OBI), which focuses on transparency of public access to eight key central government budget documents recommended by international good practice (OECD, 2017; IMF, 2019; International Budget Partnership, 2015). It analyses availability, timelines and quality of: PBS, BP, EB, CB, IYR, MYR, YER and AR. To be considered "publicly available", these budget documents must be published in a timely manner online and must include information that is comprehensive and useful (International Budget Partnership, 2019).

The literature review (see Table A1) shows the lack of consensus regarding indicators for measuring the OLBT, probably because of the lack of any standard definition of LBT. For measuring OLBT some authors have used only one or just several indicators - usually checking whether some budget documents are published or not (e.g. Bernick, Birds, Brekken, Gourrier, & Kellogg, 2014; Lowatcharin & Menifield, 2015; Styles & Tennyson, 2007). Some have used complex composite indices with numerous indicators checking the content of the budget documents, their characteristics (e.g. timeliness and comparability) and webpage features (navigability, design and accessibility of budget documents) (e.g. Caba-Perez, Rodríguez Bolívar, & López Hernández, 2008; Guillamón, Bastida, & Benito, 2011)). Most of the research on LBT actually comes from Spain and Portugal, using the composite index calculated by Transparency International (TI) Spain/Portugal (Aguiar-Conraria, Magalhães, & Veiga, 2019; Araujo & Tejedo-Romero, 2016; da Cruz et al., 2016; Guillamón et al., 2011).

Some researchers have focused on measuring only the OLBT (e.g. Bernick et al., 2014; Bronić, Ott, & Urban, 2012; Laswad, Fisher, & Oyelere, 2005; Serrano-Cinca, Rueda-Tomas, & Portillo-Tarragona, 2008; Styles & Tennyson, 2007). However in most cases researchers have used composite indices to analyse broader dimensions of online LG FT and then used only some indicators in those broader composite indices to analyse the OLBT (e.g. Caba-Perez et al., 2008; Cuadrado-Ballesteros, Martínez-Ferrero, Frías-Aceituno, & García-Sánchez, 2017; da Cruz et al., 2016; del Sol, 2013; Gandía & Archidona, 2008; Rios et al., 2018; Antonio F. Tavares & da Cruz, 2014).

To conclude, the literature review shows a lack of consensus regarding indicators for measuring the OLBT but most authors use composite indices with numerous indicators to check the content of the budget documents, their characteristics (e.g. timeliness and comparability) and webpage features (navigability, design and accessibility of budget documents). Usually, since there is no empirical evidence on the importance of the indicators used, authors assign the same weight to every indicator (e.g. Guillamón et al. (2011)).

3. Methodology

Since it is commonly understood that socio-economic phenomena like BT should usually be measured and represented with multiple dimensions (Mazziotta & Pareto, 2013), the OLBI+ was constructed as a composite index consisting of numerous indicators. However, it is focused only on the most important qualitative indicators of the five key budget documents analysed for the OLBI. The reason for this are the temporal, human and financial resources constraints on a

small research team faced with the enormous task of searching and analysing all these documents at 576 LGs web sites. Thus the OLBI+ indicators were selected according to guidelines provided by Act on the Right of Access to Information (2013) and Budget Act (2008), the literature review (see Table A1 in Appendix) and researchers' own practical knowledge of the importance of certain issues (Table 1).

Table 1: Indicators used for calculation of the OLBI+

Document	Indicator	Possible answers	Possible points - yes (1) / no (0)
Year-end-report (YER)	searchable pdf	yes/no	1
	excel/word	yes/no	1
	general part	yes/no	1
	organizational classification	yes/no	1
	functional classification	yes/no	1
	economic classification	yes/no	1
	program classification	yes/no	1
	budget explanation	yes/no	1
	development program plan	yes/no	1
	a report on the use of budget reserves	yes/no	1
	borrowing report	yes/no	1
	report on issued guarantees	yes/no	1
	archive – YER (published t-1)	yes/no	1
	archive – YER (published t-2)	yes/no	1
Mid-year-report (MYR)	searchable pdf	yes/no	1
	excel/word	yes/no	1
	general part	yes/no	1
	organizational classification	yes/no	1
	functional classification	yes/no	1
	economic classification	yes/no	1
	program classification	yes/no	1
	budget explanation	yes/no	1
	development program plan	yes/no	1
	a report on the use of budget reserves	yes/no	1
	borrowing report	yes/no	1
	report on issued guarantees	yes/no	1
	archive – MYR (published t-1)	yes/no	1
	archive – MYR (published t-2)	yes/no	1
Enacted budget (EB)	searchable pdf	yes/no	1
	excel/word	yes/no	1
	general part	yes/no	1
	organizational classification	yes/no	1
	functional classification	yes/no	1
	economic classification	yes/no	1
	program classification	yes/no	1
	budget explanation	yes/no	1
	development program plan	yes/no	1
	projections for the next two years	yes/no	1
	archive – EB (published t-1)	yes/no	1
	archive – EB (published t-2)	yes/no	1
Budget proposal (BP)	searchable pdf	yes/no	1
	excel/word	yes/no	1
	general part	yes/no	1
	organizational classification	yes/no	1
	functional classification	yes/no	1
	economic classification	yes/no	1
	program classification	yes/no	1

Document	Indicator	Possible answers	Possible points - yes (1) / no (0)
	budget explanation	yes/no	1
	development program plan	yes/no	1
	projections for the next two years	yes/no	1
	archive – BP (published *t*-1)	yes/no	1
	archive – BP (published *t*-2)	yes/no	1
Citizens budget (CB)	archive – CB (published *t*-1)	yes/no	1
Total OLBI+ (possible) points			53

Source: Author's calculation

OLBI+ indicators for YER, MYR, EB and BP, check whether these documents are published in machine readable/searchable format (searchable pdf, excel or word), as this is important for enabling ordinary citizens to analyse them quickly and effectively. According to the Act on the Right of Access to Information (Article 10), LGs are obliged to publish budgets and reports on the execution of the budget on their websites in an easily searchable manner and in a machine-readable form. Furthermore each year the Ministry of Finance (2021), in its annual instructions for the preparation of their budgets, recommends that LGs publish all materials related to the budgets and their amendments, in a format suitable for further processing (Word or Excel) instead of PDF, on their official websites. Similar indicators were used for measuring OLBT by Caba-Perez et al. (2008).

Furthermore, OLBI+ indicators check whether these four documents contain general and specific parts of the budget as well as the developmental program plan as stipulated by the Budget Act (art. 16) and whether, in the general and the specific part of the budget, revenues/receipts and expenditures/outlays are classified according to the following classifications (organizational, economic, functional and program-based) as prescribed in the Budget Act (art. 10 and 21). Availability of all or some of these classifications was previously used for measuring the OLBT by e.g. Bronić et al. (2012); Gandía & Archidona (2008) and the International Budget Partnership (2019). Although the Budget Act (article 21) stipulates that the general and specific parts of the budget revenues/receipts and expenditures/outlays should also be classified in terms of location and source these classifications are not included in the OLBI+ because they are considered, by the research team, as not so important for citizens.

OLBI+ indicators for YER and MYR also focus on the information about debt and narrative explanations stipulated by the Budget Act (art. 108) (i.e. the report on borrowing on domestic and foreign money and capital markets; the report on the use of budgetary reserves; the report on issued guarantees and consequent outlays; and an explanation of revenues and receipts, expenditure and outlays). Most of the previous authors have to some extent examined the level and the structure of debt (e.g. da Cruz et al., 2016; García-Tabuyo, Sáez-Martín, & Caba-Pérez, 2016; Guillamón et al., 2011) while some of them have also focused on the existence of the narrative - explanatory comments (Caba-Perez et al., 2008). Although narrative explanations for BP and EP are not stipulated by the Budget Act, they are also included in OLBI+ indicators as they are considered, by the research team, to be essential for citizens' understanding of these documents and participation in the budget process.

For all five documents, OLBI+ indictors check the existence of archives (availability of these documents from previous one or two years). Although not stipulated by the Budget Act, it is considered important for effective citizen monitoring of the budget; and the same or similar indicators were previously used by e.g. Gandía & Archidona (2008); García-Tabuyo et al. (2016) and Lowatcharin & Menifield (2015).

Finally, OLBI+ indicators for EB and BP check whether they contain budget projections as stipulated by Budget Act (art. 37).

After the selection of 53 indicators, in order to construct the OLBI+ for each indicator the responses "Yes" and "No" were assigned 1 and 0 points, respectively as in e.g. Gandía & Archidona (2008) and Tavares & da Cruz (2017). Since there is no empirical evidence regarding the importance of OLBI+ indicators, the same weight was assigned for every indicator as in e.g. Bernick et al. (2014) and Guillamón et al. (2011). For each LG the points for all 53 indicators were added in order to obtain the "OLBI+ score". As each indicator brings a maximum of 1 point, the potential score is 53. With the actual score divided by the potential score and then multiplied by 100, the OLBI can range from 0 to 100. The same approach is used in e.g. Bronić et al. (2012), García-Tabuyo et al. (2016) and International Budget Partnership (2019).

4. Analysis

The average OLBI+ for all Croatian LGs in 2019 is 69 (out of a possible 100), showing that LGs are on average publishing 69% of the information sought, which is actually rather high. It could be concluded that LGs satisfy most of the indicators OLBI+ is focused on (Table 2).

Table 2: Descriptive analysis of the OLBI+, all Croatian LGs, 2019

	All LGs	**Counties**	**Cities**	**Municipalities**
Average	69	89	79	65
Mod	91	98	91	77
Median	72	92	81	68
Min	0	72	23	0
Max	100	100	98	100
St. dev	22	9	16	22

Source: Author's calculation

However, there are huge differences. On the level of all LGs, the minimum score is 0 and the maximum 100. Mod – the most frequent score – is 91 (34 LGs had this score). Median is 72 (meaning that half of the LGs have it higher and half have it lower than 72). Standard deviation is 22.

Furthermore, on average, counties score 89, cities 79 and municipalities 65. Counties are the best and municipalities the worst performers, and es expected mod, median and minimum values are highest at the county and lowest at the municipality level. Standard deviation is highest at the municipality level (22) and lowest on the county level (9). Still the maximum OLBI + on the county and municipality level is 100 pointing that achievement of the maximum score should not be considered an impossible mission for any Croatian LG.

On average, the worst scores are for publication of YER, MYR, BP and EB in word/excel version (Figure 1- Figure 4). The lack of searchable documents certainly creates considerable problems for LGs' councillors, citizens, researchers or journalists wanting to analyse and comment on those budgetary documents. This is also the only indicator where counties on average have a lower score than cities and municipalities. On average in YER, MYR, BP and EB, LGs also have lower scores in publishing information about development program plans.

Figure 1: Average value of OLBI+ indicators relating to Year-End Report, 2019
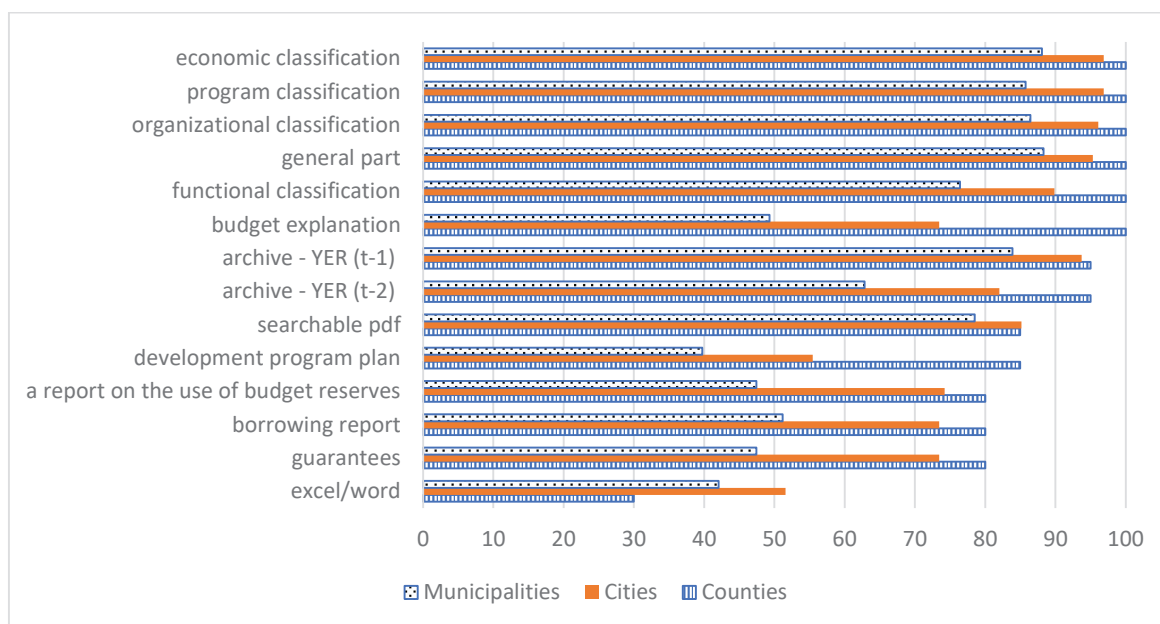
Source: Author's calculation

Figures 1 and 2 also show that LGs on average have lower scores relating to publishing debt information in YER and MYR (i.e. the reports on borrowing; reports on the use of budgetary reserves; and reports on the issued guarantees and consequent outlays). It is also worrying that around half of the municipalities and almost a third of cities are not publishing narrative budget explanations of YER and MYR. It is not clear whether the ordinary citizen can understand these budget documents without published narrative explanations, but it is logical to suppose that only a minority of citizens can. In contrast, on average LGs have the best scores for publishing the main parts of the budget (general and specific part according to program, economic, functional and organizational classification) in YER and MYR.

Figure 2: Average value of OLBI+ indicators relating to Mid-Year Report, 2019
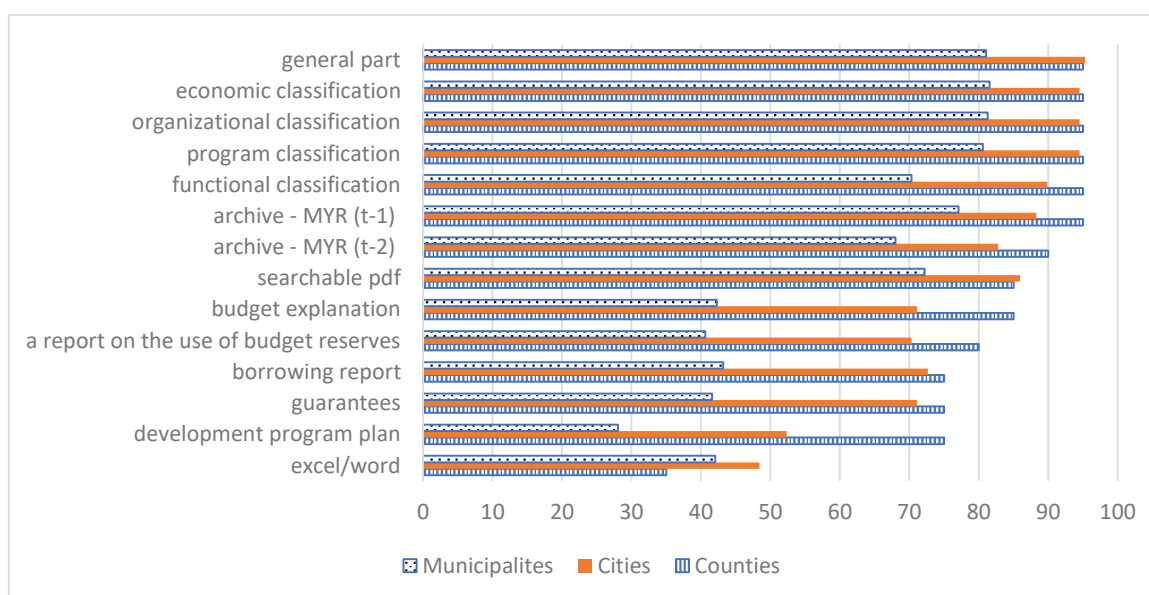
Source: Author's calculation

Figures 3 and 4 show that counties on average publish all the information sought by researchers in BP (they have all OLBI+ indicators maximal 100 points, except for the publication of BP in word/excel).

Figure 3: Average value of OLBI+ indicators relating to Budget Proposal, 2019
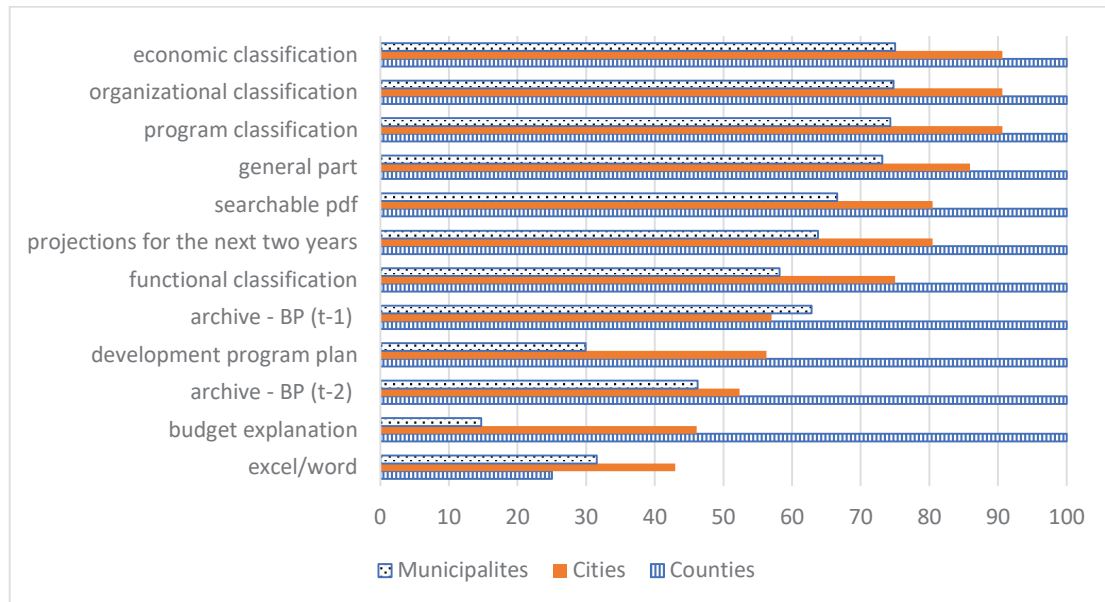
Source: Author's calculation

Along with relatively poor results regarding publishing BP and EB in word/excel versions, on average around 80% of municipalities and more than 50% of cities did not publish narrative explanations for BP and EB. Although all counties published explanations for BP, 45% did not publish explanations for EB. In general, on average it seems that LGs publish explanations more often with YER and MYR (which is stipulated by the Budget Act), and less often with BP and EP (probably because this is not explicitly stipulated by the Budget Act).

Figure 4: Average value of OLBI+ indicators relating to Enacted Budget, 2019
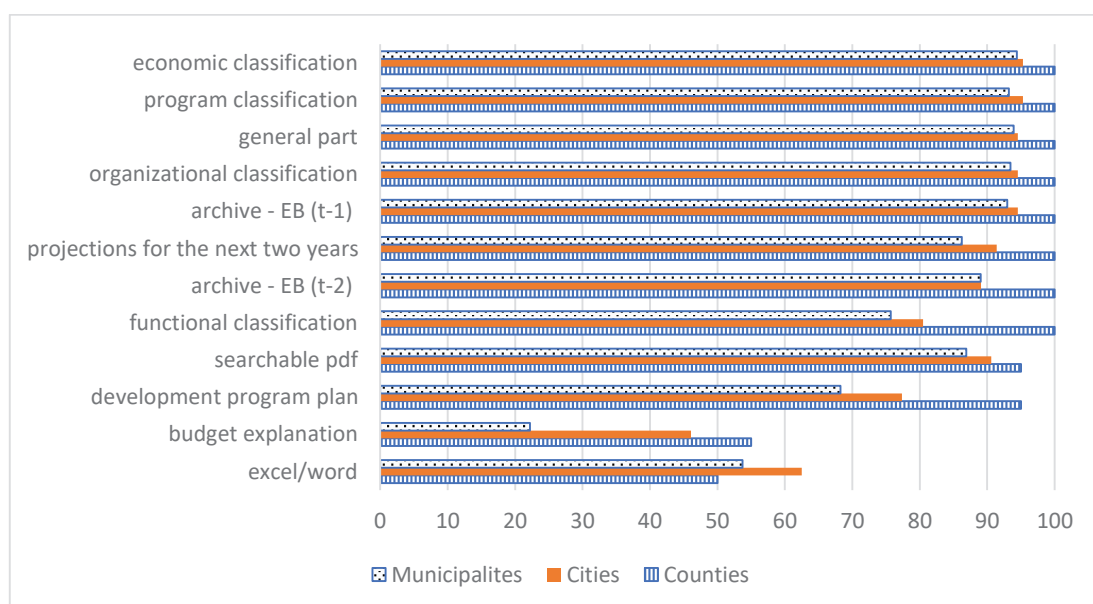
Source: Author's calculation

All counties, but only slightly more than 60% of cities and 50% of municipalities made available previous years' CB relating to EB or BP (Figure 5). Since CB are simpler versions of budget documents, made so that citizens can understand budget documents better, it is obvious that without CB for the relevant budget year, but also for the previous one they cannot meaningfully analyse BP or EB.

Figure 5: Average value of OLBI+ indicators relating to Citizens Budget, 2019
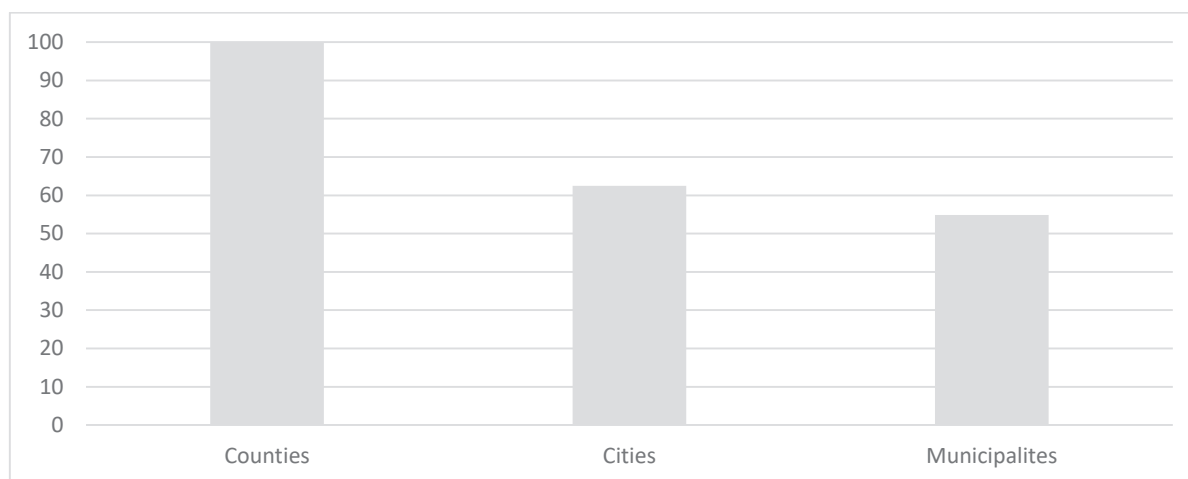
Source: Author's calculation

5. Conclusion

In order to improve the efficiency of locally-provided public goods it is necessary to improve LBT. Research into the development and measurement of OLBT is scarce and thus this article addresses the problem of how to develop qualitative and quantitative measure OLBT and hopes it will enable the replication of this measure in other environments. In 2019 the OLBI+ was developed in order to measure both the quantity and the quality of the five key budget documents previously analysed in the OLBI (which is only a quantitative measure of OLBT). It was not easy to select the most relevant indicators for the OLBI+, both because of the lack of standard indicators for measuring OLBT, and because researchers had to select only the most important indicators due to the temporal, human and financial constraints faced by the small research team annually searching and analysing 576 Croatian LGs' web sites.

In the initial year of application of the OLBI+ in Croatia, the average score was 69 (out of a possible 100), meaning that LGs on average published 69% of the information sought. However, there were huge differences, from a minimum of zero to a maximum of a hundred.

LGs often do not publish analysed key budget documents in machine readable format (word/excel), in that way weakening the possibilities for public monitoring of and participation in local budget processes. It also gives rise to concern that on average LGs publish budget explanations more often with YER and MYR (stipulated by the Budget Act), and less often with BP and EP (unfortunately not explicitly stipulated by the Budget Act). The finding that LGs often do not publish documents in machine readable format and do not offer narrative explanations (especially if they are not stipulated by law) might lead to the conclusion that LGs are actually not interested in public participation in local budget processes, as without machine readable data and without narrative explanations, it is hard for citizens to participate meaningfully in local budget processes.

It could be recommended that, on the one hand, the Ministry of Finance needs to better define and prescribe LBT in the Budget Act as well as other regulations (e.g. require the publication of narrative explanations of BP and EP) and sanction LGs that do not comply with existing laws and regulations (e.g. those that do not publish debt information in YER and MYR). On the other hand, the public, i.e. citizens, researchers, media, politicians, should use each opportunity to demand higher quality LBT, at least in the form of machine readable, complete budgetary documents and their narrative explanations.

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Appendix 1: Indicators used for measuring online local governments' budget transparency

Author(s)	Indicators*	Measures
Aguiar-Conraria et al. (2019); da Cruz et al. (2016);. Tavares & da Cruz (2014, 31)	Dimension "economic and financial transparency" consisting of following indicators: 1) annual budget, 2) balance sheet, 3) income statement, 4) management report, 5) cash flow statement, 6) budget execution maps (revenue and expenditure), 7) execution of multi-year investment plan, 8) public investment per civil parish, 9) annual budget amendments and ratification, 10) list of amounts payable to suppliers and respective maturities, 11) list of bank loans and respective maturities, 12) list of debt factoring and other debts to third parties.	Municipal Transparency Index, a composite index with 76 indicators covering 7 dimensions, calculated for all Portuguese municipalities.
Araujo & Tejedo-Romero (2016); Cuadrado-Ballesteros et al. (2017); del Sol (2013); Guillamón et al. (2011, 406); Rios et al., (2018); Ríos, Benito, & Bastida (2013)	Indicators of Economic and Financial Transparency sub-index relating to: *"A. Accounting and budget:* 1. Annual financial report published, 2. Publication of the annual financial report approval date, 3. Publication of local government budget, 4. Publication of the budget approval date, 5. Publication of budget changes approved, 6. Publication of the budget of the decentralized entities and municipal corporations, 7. Regular publication of information on budget execution (minimum monthly), 8. Publication of LG's audit reports, 9. Publication of audit reports of companies and other municipal agencies. 10. Surplus (deficit) p.c. 11. Fiscal autonomy (tax revenue/total revenues) *B. Transparency of municipal revenues and expenditures*: 12. Tax revenue p.c. (income tax/population) 13. Expenditure p.c. (expenditure/population) 14. Investment p.c. (investment expenditure/population) 15. Average payment period (outstanding liabilities x 365/ +total expenditures) 16. Average collection period (outstanding credits x 365 / total revenues) *C. Transparency of municipal debt*: 17. Publication of the municipal debt 18. Data provided on the yearly evolution of debt, 19. Debt p.c. (current financial liabilities/population), 20. Relative debt (debt/total budget)"	Global transparency index and five sub-indices, calculated for sample of Spanish municipalities.
Styles & Tennyson, (2007)	One indicator – dummy variable checking online publication of a comprehensive annual financial report (CAFR), scoring 0 or 1. Also a 10 point accessibility index measuring the ease of CAFR access, i.e. required steps for locating the report on the website.	Checking the online publication of a CAFR; calculated for sample of US municipalities.
Bernick et al. (2014)	1 – does a county have budget information on its website? 2 - if yes, then what type of budget is presented? (line item or something more sophisticated). 3 - does it provide information concerning their CAFR.	Fiscal transparency index consisting of 3 indicators, calculated for sample of US counties.
Lowatcharin & Menifield (2015, 102)	"The website includes the current budget. The website shows the budgets for previous years. A graph shows increases or decreases over time to help citizens evaluate and understand trends in local government spending. The checkbook register and credit card receipts are posted."	Website transparency index, calculated for sample of US counties.
Bronić et al. (2012)	Indicators are mostly based on IBP's Open Budget Survey and concerned with extensiveness of information presented in five key budget documents. The level of disaggregation of budget items investigated: expenditures (by types of classification - economic, functional, program), revenues (tax and non-tax, grants) and the outstanding debt. Furthermore, whether the budget figures are accompanied by relevant verbal explanations and descriptions.	Open City Budget Index, 52 questions, calculated for sample of Croatian cities.
Serrano-Cinca et al. (2008, 35)	9 indicators concerning the publication: "individual budget of the town hall; the consolidated budget; the budget of dependent entities; the budget disaggregated by economic, functional or organic classification; budgetary information regarding investment; borrowing or revenue and expenditure; the individual annual accounts; the consolidated annual accounts; the annual accounts of dependent entities; and the audit report."	A dichotomous measure e-DISCL, assigning 1 if local council discloses any of 9 indicators and 0 if it does not, calculated for sample of Spanish local governments.

Author(s)	Indicators*	Measures
Caba-Perez et al. (2008, 385-386)	*"1. Content of information supplied* (1.A. Budgetary information and cash-flow; 1.A.1. Information on the fiscal year budget; 1.A.2. Expenditure implementation; 1.A.3. Revenue implementation; 1.A.4. Budgetary result; 1.A.5. Budgetary modifications; 1.A.6. Cash-flow statement; 1.B. Financial position; 1.B.1. Information on non-financial fixed assets; 1.B.2. Information on asset variation; 1.B.3. Total borrowing; 1.B.4. Variation in public borrowing; 1.B.5. Operating statement; 1.C. Non-financial information - Indicators related to public service management; 1.C.1. Indicators of efficiency; 1.C.2. Indicators of economy; 1.C.3. Indicators of effectiveness); 2. *Characteristics of information* (2.A. Completeness - The web page should be as informative as possible; 2.A.1. The general accounts can be consulted on the web page; 2.B. Timeliness - Provide information more frequently than on an annual basis (e.g. quarterly, monthly); 2.B.1.Convenience of the information supplied; 2.C. Comparability - Provide financial information for three or more fiscal years, to enable comparative reports; 2.C.1. The possibility of comparing information exists; 2.C.2. Comparative summaries of the accounting information compiled by the entity itself are made available; 2.D. Understandability - The presence of ratios or graphs, with explanatory comments; 2.D.1. Ratios and graphs or back-up figures are included to present the accounting information; 2.D.2. Comments on accounting information are included; 2.E. Relevance - Provision of technical reports on management performance, both overall and by sector; 2.E.1. Technical reports elaborated by the entity itself are available; 2.E.2. Sorted and ranked information offered on the internet; 2.F. Reliability - Information is verified by auditors; 2.F.1. Official financial information is audited; 2.F.2. Audited and non-audited information are clearly differentiated); 3. *Navigability, design and access* (3.A. Ease of access to the information - Existence of a web site map and a specific section on financial information; 3.A.1. The web page has a specific section that includes information on public financial information; 3.A.2. A web site map showing the contents is available; 3.B. Categorisation of user accessibility - Establish diverse profiles for access to information; 3.B.1. Establish access areas bounded according to the user profile; 3.C. Ease of movement through areas of financial information - Introduce a system of hyperlinks within the sections concerning accounting data; 3.C.1. A system of hyperlinks for the information is provided; 3.D. Ease of data management; Information is provided in various downloadable formats, such that users can edit, combine or summarise the data to suit their needs; 3.D.1. Format: html; 3.D.2. Format: pdf or doc; 3.D.3. Format: xls; 3.E. Ease of use in an international context - It is highly positive for information to be made available in various languages; 3.E.1. Information content is available in different languages; 3.F. Interactivity with the user - Means are available for interactivity between the administration and users; 3.F.1. An email address other than the webmaster's is provided for information or explanations to be requested)"*	Disclosure index, calculated for sample of Spanish local governments.
Laswad et al. (2005)	Checking whether LGs publish at least one of three financial reporting documents (financial highlights, audited annual reports, annual plan (forecast information)) or any combination of those three documents?	Internet Financial Reporting dichotomous indicator, calculated for sample of New Zealand's local governments.
García-Tabuyo et al. (2016, 1211-1212)	Economic-financial transparency sub index measured by: "1) Consolidated and individual budget approved, 2) Implementation of the consolidated and individual budget; 3) Budget amendments, 4) Consolidated and individual financial reports, 5) Audit Report, 6) Outcome of public and private audits, 6) Report and indicators of annual	Index of voluntary disclosure, with 4 sub-indexes, calculated for sample of municipalities in five

Author(s)	Indicators*	Measures
	activity, 7) Recipients of non- reimbursable public funding, 8) Statistical information of general interest about municipal governance, 9) Socio-linguistic report on the users of municipal services, 10) Information about the property register, 11) Public debt, maturity and payments, 12) Comparative figures for the previous period, 13) Intermediate financial information, 14) Management indicators, 15) Budget obligations not yet implemented, 16) Non-structured graphic information, 17) Comparison of municipal results, between present and previous year, 8) Publication of comments on the budget during the public information period."	Central American countries.
Gandía & Archidona (2008, 41)	Budgetary information indicators: "1. Budget law used for the making of the last budget; 2. Objectives of the police budget; 3. Strategic axis of the budget; 4. Statement of budgetary execution; 5. Consolidated budget; 6. Total amount of budget; 7. Previous years' budgets (two years minimum); 8. Statement of taxes; 9. Consolidated tax budget; 10. Budgetary expenditures by class; 11. Summary of expenses by class; 12. Expenses separated by functional classes; 13. Summary of expenses by department; 14. Budget details with reference to personnel expenses; 15. The income and expenses of autonomous entities are separated; 16. Budget detailing sanitary services; 17. Expenditures public policy; 18. Budgetary statement of liquidity; 18. Budgetary statement of liquidity for previous years (two years minimum); 19. Real investments by class, 20. Economic classification of budget; 21. Budget distributed by programmes."	Disclosure index, calculated for sample of Spanish municipalities.

* Underlined are indicators previously used by other authors similar to or the same as those used in the OLBI+.

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THE ROLE OF SOCIO-CULTURAL PRINCIPLES AND INDICATORS OF SUSTAINABLE TOURISM DEVELOPMENT IN CROATIAN NATIONAL PARKS

ABSTRACT

The number of tourists is increasing worldwide. Often this could lead to degradation of natural and socio-cultural resources in a tourist destination if tourism is not planned carefully. Especially fragile are protected areas (PAs) which are recording the increased tourist visitation as well. Among PAs, national parks (NPs) record the highest tourist attendance. That in-focus implies the importance of long-term planning tourism development, based on sustainability. However, it is not possible to implement a unique model for all tourist destinations due to their diversity by natural and social features.

The purpose of this paper is to explore the principles of sustainability as well to underline the importance of their equal implementation in long-term tourism development.

This paper focuses on the implementation the socio-cultural sustainable principles and indicators in future sustainable development which is often neglected in tourism plans. Secondary data have been used to analyse scientific literature in the field of implementation principles and indicators of sustainable tourism development in NPs also the data from the Croatian Bureau of Statistics have been analysed. Primary data have been used to research attitudes of the local population in NPs toward future tourism development their areas of living. The findings showed that on the international level exist plenty of documents and researches in the field of the implementation principles of sustainability in tourism. However, documents and researches of indicators of sustainability are poorly represented.

Therefore, due to that, their implementation is poorly implemented in the sustainable tourism development practice. Withal, doesn't exist special methodology or indicators which could be implemented in the NPs. The paper stressed out the importance of successfully implementing all principles and indicators of sustainable tourism development, where the attitude of the local population is essential in that process.

Keywords: *sustainable tourism development, sustainable tourism principles, sustainable tourism indicators, socio-cultural principles, socio-cultural indicators, national parks Croatia.*

1. Introduction

Tourism is a cultural, social and economic phenomenon and tourism industry is one of the fastest growing industries. The numbers of international tourist arrivals are increasing in the last 70 years and in 2019 reached 1.46 billion in the world (UNWTO, 2020a). This situation is a result of economic growth and rapid urbanization since middle the 20th century when people from developed countries began to feel the need to escape from polluted urban areas (Hendija & Marguš, 2007). For the first time, the ecological deficit noticed in the 1970s, and today mostly is manifesting in the urban areas (WWF, 2009). According to the UN, 55% of the world's population lives in urban areas, and projections show that this share is going to increase up to 68% by 2050 (UN, 2018). Hence, rural areas have become increasingly popular among tourists that want to escape from urban areas and to experience authentic local lifestyles and unspoiled natural rural areas (CBI, 2020). Developing rural tourism could bring positive economic and socio-cultural benefits for the local population by creating additional employment and income (Daneshpour, Pajouh, 2014; CBI, 2020).

Since the 1990s, local population have become more aware of the positive and negative impacts of tourism on the environment, and in the same time tourists show a clear intention to visit tourist destinations that implement higher environmental standards (WTO, 2002). Tourism depends on the environment it vital interest is to preserve it and to apply the concept of sustainability as a way to achieve long-term development (UNWTO, 2017). Sustainable tourism "takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities and in that way makes optimal use of environment for the long-term economic operations, providing benefits that are distributed fairly among all stakeholders" (UNEP & UNWTO, 2005). In order to reduce the negative impacts generated by tourism development, new models of sustainable tourism development have begun to be put into practice worldwide. However, each tourist destination is different by its natural and social features. Therefore, there are serious and numerous concerns about implementing principles of sustainable development into practice where that process would imply a holistic approach tourism development based on the equal importance economic, ecological and socio-cultural principles (Torres-Delgado & Saarinen, 2013). To avoid such a general models of tourism development, thus, in tourism theory and practice appeared a need to introduce indicators that will allow to measure progress in the implementation of principles of sustainability into tourism practice. The application of these indicators could greatly help to make better decisions and actions pertaining tourism practice and therefore could be an important element in the effort to promote sustainability at all levels of the tourist destination (WTO, 2004). It is important to develop tourism according to the principles of sustainability because recent market studies indicate that the responsible travellers are more interested in an authentic travel experience that brings positive economic and social impact for the local population and tourist destination, as well (CREST, 2018). Tourists are acting on the more responsible way toward the environment during their holiday, and they support efforts actions which bring positive changes and preservation to the environment (King-Chan et. al., 2020). In 2018, by Statista 87 per cent of travellers stated that they wanted to travel sustainably (Statista, 2020). One-third of travellers are increasingly concerned about long-term environmental management protection in a tourist destination (UNEP & UNWTO, 2012). Tourist destinations which develop under sustainable principles and protect the environment are more likely to benefit from European travellers (CBI, 2020). On the tourism market one of the current trends is that tourists want to visit well preserved natural areas, especially those ones which are protected (Hendija & Marguš, 2007).

The International Union for Conservation of Nature (IUCN) defines a protected area as "a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (IUCN, 2020). Protected areas are earth's unique terrestrial and marine places devoted to biodiversity conservation and sustainable development which could be managed by legal means and that are dedicated to the protection of their authentic features (Gurung, 2010). Thus, protected areas are increasingly gaining in importance due to the constant pressure on the environment through economic and social development and, under these conditions sustainable development becomes the only way for the future development of tourism in protected areas (Tudorache et al, 2017). In 2003, protected areas covered 11.5 percent and surface with 102,102 assigned natural protected areas while in 2018 they covered 14.9 percent of earth's land surface or 20 million km^2 and 7.5 percent of the ocean or six million km^2 with 238,503 assigned natural protected areas (UNEP-WCMC, IUCN, NGS, 2018; UNEP-WCMC, 2003). The main challenge in developing tourism in protected areas is to find a sustainable balance between the flow of visitors and their behaviour and the protection of nature (Parks & Benefits, 2011).

The focus of this paper will be on national parks (NPs) as one of the most popular forms of protected areas for tourists. The paper aims to explore the importance of implementing sustainable development indicators in tourism development in the NPs. The emphasis in this research is on the socio-cultural indicators that are the less explored in the scientific literature. The paper begins with the historical and theoretical review of initiatives for implementing sustainable development in tourism at the international level. The second part examines the importance of the implementation of sustainable tourism indicators in the NPs, on the case of Croatian NPs. The last part of the paper provides the results of the research. This research used both secondary data and scientific literature in the field of sustainable tourism development and empirical research among the local population in the NPs. The purpose of the empirical case study is to explore the attitude of local populations toward tourism development in their NPs. The findings showed that it is challenging to implement indicators of sustainable development in the NPs as tourist destinations because there exist a variety of indicators, in this process all three principles of sustainability should be equally applied – economic, environmental and socio-cultural. One of the main issues regarding this process is to implement indicators of sustainability on a way that all involved in this process (destination management, local authorities, private sector, non-profit organizations, residents, tourists…) act in the same direction – the direction of sustainability.

2. Global initiatives in implementing sustainable tourism development

Tourism is considered a modern phenomenon, although in tourism theory considers 1841 as its official beginning of organised mass traveling (Čavlek et al, 2011). Since then, tourism industry has changed in order to create conditions to attract tourists and to meet their new demands and needs. However, this rapidly developing tourism which in the 1950s and in 2012 for the first-time number of international tourist arrivals around the world exceeded the number of 1 billion and in 2019 reached 1.46 billion (UNWTO, 2020a). That has often led to a conflict between different aspects of tourism development in tourist destinations. Mass tourism often could let to water pollution, loss of biodiversity, noise pollution, overcrowding, and the deterioration of local cultures in the tourist destination etc... (Kušen, 2002). Tourist destinations are physical spaces which tourists visit and where tourists spend at least one night and this space incorporates various stakeholders (WTO, 2004). Since tourism makes intensive use of space,

numerous national and international documents, aimed at environmental protection pay special attention to protect tourist destinations from over-tourism (Pešutić & Bučar, 2008).

Worldwide, since the 1960s people became more aware of environmental degradation, thus tourism cannot develop without including environmental plans and strategies vital for long-term sustainable tourism development (Bučar, 2017). Since that time, at the international level, several official international documents appeared in the field of environmental protection.

The first international conference about environmental protection was held in 1972, UN Conference in Stockholm. In 1987, the concept of sustainable development was presented for first time in the Brundtland report, in which it was defined as "that development which… meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). From there, this concept was implemented in the field of tourism as "the sustainable development of tourism implies the satisfaction of tourist needs and the needs of local population, without diminishing the possibilities for future development" (WTO, 1998). The aim of sustainable development in tourism is to provide a high quality of experience for tourists but also to bring economic benefits to local businesses in tourist destinations, improve quality of life for local populations and to develop better awareness of the importance of protecting both natural and cultural resources (Inskeep, 1991). At the Conference on the Protection of Environment, Rio de Janeiro in 1992, an action plan about environmental protection for the 21st Century was created, known as Agenda 21 (Global Programme of Action on Sustainable Development). Agenda 21 emphasize that sustainable development is the only way which will improve living standards of people, achieve higher yields and achieve environmental protection (UN, 1992). Agenda 21 for the Tourism & Travel industry stressed that development in tourism should include the interests of all participants in tourism which should include among other things, education and raising awareness about the importance of sustainable development, planning for sustainable tourism and measuring progress in achieving sustainability (WTO, 1996). Following that direction, UNWTO made lot of efforts at international level to accelerate tourism development in a more sustainable way. Therefore, in 2001 the UNWTO brought a document titled "Global Code of Ethics for Tourism - For Responsible Tourism" which emphasize the idea of sustainable tourism development and that in all tourist destinations its principles of sustainability should be implemented in the future development (WTO, 2002). This document based on the fact that the local population is more aware of the numerous problems resulting from unplanned tourism development and that, at the same time tourists increasingly expect higher standards when it comes to environmental protection (WTO, 2002).

At UN international environmental conference on Sustainable Development (Rio+20) held in 2012, a 10-Year Framework of Programme (10YFP) was devised to accelerate sustainable consumption and production (SCP) patterns (UNDESA, 2014). In this programme, for the first time on international level, tourism was highlighted and it was acknowledged the potential and significant contribution that it has in process of implementing sustainable development (UNDESA, 2014). The UN General Assembly (UNGA) in 2015 adopted the document 'Transforming our world: the 2030 Agenda for Sustainable Development' to emphasise the strategies for ending poverty and promoting sustainable development through a list of 17 Sustainable Development Goals (SDGs) (especially in goals 8, 12 and 14, which include tourism-specific targets) and 169 related targets (Eurostat, 2020). Agenda 2030 stressed out that sustainable tourism development could be a tool to protect biodiversity and to stimulate community development. In that direction, the UN proclaimed 2017 as the International Year

of Sustainable Tourism aiming at supporting the implementation of sustainable tourism development in business practices and tourists' behaviour (UNWTO, 2017).

However, when it gets the transformation from old, conventional ways of developing tourism to the implementing action of sustainable tourism development into practice implies significant changes in all participants involved in the tourism sector. The potential stakeholders in tourism destinations are local communities, public and private sector, non-governmental organizations (NGOs) and, of course, the tourists themselves (WTO, 2004). However, there is no a "one-fits-all" solution to address the question of sustainability in tourism development (UNEP & UNWTO, 2012). Each tourist destination is specific by its characteristics and to implement principles of sustainability into reality it is important to develop tools to measure its particular progress and implementation. Various instruments are available in order to accomplish this approach, such as: legislative measures - rules, regulations, penalties; market instruments – taxes; financial aid for positive experiences; codes of conduct; and information, education and research (UNCSD NGO, 1999).

Petrić and Mandić (2014) stressed out that in protected areas growth of visitors and the number of tourism suppliers requires holistically approach by designing destination management plans.

Tourism exponential growth presents challenges in terms of increased resource use. Degradation of natural resources and cultural heritage, and negative social impacts as well, stress the need for a paradigm shift. Withal, there have been numerous international initiatives for attaining sustainable development in the field of tourism and to develop accurate indicators as well. However, all these international and government initiatives will not achieve the desired goals and provide results without the conscious effort of all who are involved in the tourism, from the local population and tourists up to the government. Therefore, only a holistic approach to planning is the way to achieve tourism development precisely within the limits of sustainability.

3. Indicators in sustainable rural tourism development - the case of national parks in Croatia

Quality of life is strongly linked to socio-economic development and tourism can have an important role in linkages different economic sectors. It has the capacity to generate benefits for rural communities by stimulating enterprises and job creation, and it could help preserve culture and heritage (ILO, 2019).

Although, the beginning of rural tourism in England can be traced back to the 11th and 12th centuries, however, there is no unique definition of rural tourism. Reasons could lay in a fact that different countries define their rural regions by different criteria - natural and socio-economic characteristics (Bartoluci, et al, 2015).

Nevertheless, generally is accepted definition given by UNWTO, which defines rural tourism by 4 key elements: (i) natural rural resources; (ii) rural way of living, (iii) rural heritage and (iiii) rural activities as horse riding, walking etc... Rural tourism can be defined as tourism which "including traditional aspects such as food tourism, hunting tourism, environmental tourism, sports, agro-tourism and tourism in rural accommodation" (Sanagustin-Fons, et al, 2018). In the same time, it is important to protect natural features in rural areas, where the most protected areas are located. In the second half of the 19th century, several countries began applying environmental protection laws. The first national park in the world was proclaimed in the USA

in 1872, the national park of Yellowstone (Wright & Mattson, 1996) and in Europe Sweden was the first country to do so in 1909 while the most recent national park was declared in Denmark in 2008 (ICUN, 2020). This process means that there is no unique model of national parks, although the national parks are similarly defined as "a natural area to protect ecological processes with aim to provide basis to support natural biodiversity and environmental and cultural process and to promote education and recreation" (Frost & Hall, 2009; ICUN, 2020). On the international level, in the International Union for Conservation of Nature (IUCN) was founded in 1948 as an international organization to work in the field to protect nature conservation and sustainable use of natural resources, also intended to gather and analyse data, conduct research, field projects, advocacy, and education. The Federation of Nature and National Parks of Europe (EUROPAC) was founded in 1973 dedicated to protect nature. EUROPAC is the main network for protection of Europe's natural and cultural heritage created with the goal to improve management in protected areas and to respond to the challenges Europe's natural environment is facing (EUROPAC, 2020). NATURA 2000 was founded 1992 and it is a network of natural protect areas covering 18 percent of surface land and almost a six percent of marine territory in EU; the members of that network must manage these protected sites according to a given and accepted ecological and economic principles (EC, 2020a). The main idea behind declaration of a specific area as a national park is to protect its original natural and cultural features. However, since the first national park in the world was established, national parks have become important tourist resources. Tourists are drawn to national parks in such large numbers because of their remarkable natural beauty (Marković Vukadin, et al, 2013).

Tourism in protected areas is commonly known as ecotourism and is defined as "responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education" (TIES, 2020). In 1990, the International Ecotourism Society (TIES) was created as a non-profit organization dedicated to promoting ecotourism and providing reliable information to tourists and professionals in various segments of in the tourist industry with the objective to make tourism a viable tool for conservation, protection of bio-cultural diversity, and sustainable community development (TIES, 2020).

In order to emphasize the importance of development tourism on a basis of sustainability, UNWTO proclaimed 2002 as the year of Ecotourism to stress the idea that tourism in protected areas can contribute to the protection of the environment and to the promotion of rural development and better living condition for rural population through the development of tourism along principles of sustainability (UNWTO, 2020b). Thus, the more protected an area is, the more likely it is that it would attract more attention and it that case, it should find balance between conservation and tourism usage (Wolf, et al, 2019). The fact is that NPs try to attract as many tourists as possible in order to raise funds and achieve economic revenues. At the same time, in their efforts to protect their spaces from the devastation potentially caused by unplanned and uncontrolled tourism development, NPs try to implement indicators for sustainable development.

Since 1992, UNWTO has direct one of its activities into developing indicators of sustainable development of tourism at different destinations stressing the benefits of their implementation i.e. lowering risks and costs, prevention and identifying limits and opportunities, etc. (WTO, 2004). As such, the development of indicators is fundamental to practices of sustainable tourism development (Torres-Delgado & Saarinen, 2013). Apart from UNWTO, in 1994, the International Federation of Tour Operators (IFTO) published a list of indicators of long-term sustainability of tourist activity with aiming detect its main critical features (Hughes, 2002). In 1995, WTO published a guide of sustainable indicators for policy makers, and in 2004 it was

extended to "Indicators of Sustainable Development for Tourism Destinations – a Guidebook" containing a list of indicators with practical examples for their implementation in tourist destinations to raise awareness about tourism as an essential part of the economic and social systems and the environment (WTO, 2004).

Since that time, progress has been made in understanding and implementing the indicators for sustainable development in tourism. However, its main challenges continue to be the lack of reliable data at the tourist destination level. In order to minimize this deficiency, in 2004, UNWTO launched the International Network of Sustainable Tourism Observatories (INSTO) which measures economic, environmental and social impact of tourism at the destination level and supports support the policy-makers by giving them reliable data to make evidence-based decisions (UNWTO, 2019).

On the European level, the European Commission launched the European Tourism Indicators System (ETIS) in 2013 as a system composting 27 core indicators and 40 additional (optional) indicators for the sustainable management of tourism destinations (EC, 2020b). It is a management tool which aim to support tourist destinations by applying monitoring system and destination management to reach sustainable tourism development in tourist destination (ETIS, 2016, Eurostat, 2020). However, until this document was presented only a few practical implementations of sustainable indicators are produced. The first practical implementation was in Romania in 2014 - project Destination Intelligent Management for Sustainable Tourism (DIMAST) (Iunius et al, 2015). In 2016, Croatia as a part of INSTO and using ETIS indicators started the project Croatian Sustainable Tourism Observatory (CROSTO), which aims to monitor the implementation of tourism sustainability at regional and local levels, to develop tools to measure sustainability and to raise public awareness about the importance of implementing principles and indicators of sustainability in tourism development (CROSTO, 2020). Such a situation in the practical implementation of ETIS sustainable tourism development indicators show that ETIS indicators need to be adjusted for the specific needs of each tourist destination (Tudorache et al, 2017).

With the support of the UN Statistics Division (UNSD), in 2017 UNWTO on the international level has launched the Statistical Framework for Measuring the Sustainability of Tourism (MST) which should provide integrated information on sustainable tourism aiming to develop an international statistical framework for measuring tourism's role in sustainable development, including its economic, environmental and social dimensions (UNWTO, 2020). However, those indicators are too widely set and usually they are not developed specifically for tourism sustainable development.

3.1. Methodology

In the tourist industry it is generally accepted that sustainable development and the implementation of its principles are the only way forward if a tourist destination want to develop tourism on a long-term basis. Numerous documents exist on the international level that explains three basic principles – economic, environmental and socio-cultural and only if they are properly balanced, tourism development will reach its desired goals. Those principles are clear and simple to understand but they are too broad and as such they only provide a general framework for the tourism development. Given that, each tourist destination is different and characterized by distinctive set of features, it is not enough to simply apply general directives.

Thought, in the last two decades, increased focus of scientific research in the field of implementing sustainable tourism principles and indicators in rural and protected areas. In their research Park&Yoon (2011) proposed sustainable tourism indicators. Some researchers have used quantitative data to analysed sustainability tourism indicators (Ceron&Dubois, 2003; Tao&Wall, 2009). Some others researches in their work used qualitative research through survey questionnaires (Chuang, 2010; Muresan et al., 2016; Abdollahzadeh&Sharifzadeh, 2014). However, the main challenges are to find the correct indicators and their respective data that can be applied in a particular tourist destination.

In tourism practice, destination management can use the list of indicators which was developed by WTO in 2004 or by ETIS in 2013. These two documents were used and analysed in this research. In NPs, economic indicators could be easily monitored by the number of visitors. The same situation is with the environmental indicators because they automatically apply by themselves because NPs are protected areas. Continuous monitoring environmental indicators will ensure effective sustainable tourism development management (Kožić & Mikulić, 2011).

Although, in scientific literatures is the least researched implementation of sociocultural indicators, Warchalska-Troll (2019) stressed out that on international level many scientific studies emphasized correlation between positive attitudes of the local residents in protected areas toward tourism development and overall benefits for the protected areas. In this part of the research a case study methodology was applied.

This research aimed to inquire about the attitudes of the local population in protected and surrounding areas of NPs regarding some indicators of sustainable tourism development in their NP. People of surrounding areas were included in this research because the NPs, as protected natural areas in Croatia, are located within the municipalities of the surrounding areas, where the population lives.

For this purpose of the research, a questionnaire was created. The survey questionnaire had a total of 33 questions and the socio-demographic data of the participants was collected as well. The respondents were asked to evaluate statements about sustainable tourism development in their NPs on a 5-point Likert scale (ranging from 1 for not agree statement to 5 for strongly agree statement). The survey was conducted by telephone and totals of 497 questionnaires were collected in a period from December 1, 2017 until June 20, 2018, and the data was analysed using descriptive statistics. The profile of respondents was 54 percent female and 46 percent male, and 53 percent of them were older than 45 years of age.

This research is part of a wider research (Starešinić, 2019) and for the purpose of this paper only questions in the field of socio-cultural principles sustainable development in tourism have been analysed because in Croatia empirical scientific researches in this field does not exist.

3.2. Results and discussion

3.2.1. Indicators of sustainability in national parks in Croatia

Croatia is a middle size country located in Southern Europe. Tourism started to develop in Croatia in the age of Roman Empire in thermal spas. The establishment of health resorts in continental and coastal areas from the middle of 19th Century launched a new era of tourism development in Croatia. The modern period of tourism dates from the 1950s and for most tourists the main reason to visit Croatia is Mediterranean climate and the Adriatic Sea (Bučar,

et al, 2018). In 2019, according to the data of DZS (the Central Bureau of Statistics of Croatia), Croatia recorded 19.6 million tourist arrivals and 91.2 million tourists overnight stays with 92 percent of all tourist overnight stays located in the coastal part of Croatia, 84 percent of tourist movements made in the four summer months only and 92 percent of overnights realised by international tourists (Hendija, et al, 2020). According to research Tomas-Croatia from 2019, visiting the NPs and other protected areas is the 3rd most common activity (28%) of tourists in the continental part of Croatia, after going to restaurants and visiting cities (Tomas Hrvatska, 2020). There is a growing trend of tourists' interest in visiting national parks and other protected areas because according to a previous survey by Tomas 2017, this was only the sixth activity of tourists in Croatia (Tomas ljeto, 2018).

In the Republic of Croatia there are eight national parks (NPs) which are all located in rural areas. They are all different because of their geomorphological and landscape characteristics, diversity of flora and fauna, different by size and by location as well (five are in the coastal part of Croatia and three in the continental part). Three of them are typical mountainous areas (Risnjak, Paklenica and Northern Velebit) with characteristic relief features, such as limestone rock and deep canyons, with high meadows and extensive woods, home to many endemic species. Three of them are islands on the Adriatic see (Brijuni, Kornati and Mljet) and two of them are lakes on the river (Plitvica Lakes, Krka).

In the last decade, among the tourists who visited Croatia, the interest in visiting national parks is constantly increasing. In 2011, national parks in Croatia recorded 2,186,810 visitors and 3.876.152 in 2019 which shows that in that period the number of visitors in national parks increased by 9.3 percent per year while tourists' arrivals in tourism accommodation in Croatia in the same period increased by 7.3 percent (Table 1).

NPs in Croatia are not different only by their features; differences among them are even greater according by the number of visitors. Plitvice Lakes are the most visited NP in Croatia and the number of visitors increased from 316.710 in 1997 (Vidaković, 2003) up to 1.771.523 in 2019 which is five-time increase in that period (DZS, 2019). NP Plitvice Lakes has a total of 46 percent of all recorded visitors in NPs in Croatia, while NP Krka has close to 35 percent. These two NPs thus recorded an 81 percent of all visitors although they only cover a 19 percent total surface area of NPs in Croatia (Table 1).

Table 1: Basic data about NPs in Croatia

National park	Year of foundation	Surface area in km^2	Number of inhabitants in 2016 (estimation)	Number of visitors in 2016	Number of visitors per one inhabitant in 2016	Number of visitors in 2018	Number of visitors in 2019	Share in number of visitors in NP in 2019
Paklenica	1949	95	14,850	165,200	9.5	144,624	144,681	3.7
Mljet	1953	54	1,146	126,699	127.6	145,751	148,395	3.8
Kornati	1960	217	2,142	165,200	106.9	237,435	242,321	6.1
Brijuni	1983	34	60,263	181,560	2.8	171,794	152,522	4.4
Krka	1985	109	72,007	951,106	17.8	1,354,802	1,364,000	34.7
Coastal Croatia		509	150,408	1,589,765		2,054,406	2,051,919	52.6
Plitvica Lakes	1949	297	7,489	1,357,304	229.7	1,796,670	1,771,523	46.1
Risnjak	1953	64	30,891	12,715	0.5	16,816	31,074	0.4
North Velebit	1999	109	6,561	16,471	3.5	30,638	21,636	0.8
Continental Croatia		470	44,941	1,386,490		1,844,124	1,824,233	47.4
TOTAL		979	195,349	2,976,255		3,898,530	3,876,152	100.0

Source: DZS; Ministarstvo zaštite okoliša i energetike, (2019) Starešinić 2019
[1] the last year for which this data was available

A symbiotic relationship exists between tourism and environmental management in the protected areas where tourism is not only important for the rising awareness of protecting biodiversity but also for generating economy benefits from tourism activities and services (Gurung, 2010). According to Eagles, & Mccool (2002) NP management worldwide funding increasingly shifts from government grants to park tourism fees including: entrance fee, recreation services fee, special events and special services, accommodation, equipment rental, food sales and sales of other goods (clothing, books, crafts, etc..), contractual agreements with concessionaires, licensing of intellectual property etc. However, in analysing developing tourism other indicators for the successful implementation of economic principles of sustainability shouldn't be forgotten, mainly as imported goods, foreign exchange, tourism seasonality (occupancy rates, peak season, product diversity, length of stay), tourism revenues (daily spending per overnight tourist, average price per room in the tourist destination), relative contribution of tourism to the destination's economy (% GDP), long-term profitability, business cooperation, employment (per cent of jobs in tourism that are seasonal), etc... (WTO, 2004; ETIS, 2016). Krajinović (2015) pointed out that setting economic benefit as the only relevant indicators in sustainable tourism development could lead to opposite effects due to tourists lost their interest to visit devastated protected areas.

The constant increasing number of visitors in the NPs of Croatia represents a massive impact on sensitive resources (Marković Vukadin, et al, 2013). These negative environmental impacts are mostly due to overcrowding, pollution, wildlife disturbance, and overdeveloping, however all of this could be minimised or entirely avoided by careful planning and the implementation of national and local strategies (Hvenegaard, 1994). The main indicators for implementing environmental sustainability are: protecting critical ecosystems, managing scarce natural resources (energy savings and efficiency, water availability and conservation, limiting the impacts of tourism activity (sewage treatment, solid waste management, air pollution, controlling noise levels, managing visual impacts of tourism facilities and infrastructure), etc... (WTO, 2004; ETIS, 2016).

Table 2: Socio-cultural indicators of sustainability in NPs in Croatia

Statements of local population	The share of the local population that agrees or strongly agree with statements							
	Brijuni	Kornati	Krka	Mljet	Paklenica	Plitvica Lakes	Risnjak	North Velebit
Tourism positively effects on the living standard of local population	40%	67%	39%	85%	70%	76%	45%	44%
Tourism positively effects on residents to continue living in their home towns	30%	40%	63%	88%	79%	73%	54%	52%
Sustainable tourism development is the only way to develop tourism in NPs	77%	75%	82%	94%	66%	65%	76%	64%
Local inhabitants are familiar with the tourism development plan for their NP	40%	34%	64%	14%	30%	53%	36%	33%

Source: Starešinić, 2019

Ecological and economical sustainability are usually emphasized as crucial for managing the protected areas. On the other hand, socio-cultural sustainability is often neglected due to

excessive conservation of protected areas that restrict economic and demographic development of the local population (Marković Vukadin, et al, 2013). People and their communities have a vital role in protected area management (Gurung, 2010). Newsome, Moore and Dowling (2002) point out that local community's view tourism as an accessible development alternative which can enable them to improve their living standards without compromising their culture. The main indicators for the socio-cultural principles of sustainable tourism development are: number of tourists per 100 residents, percentage of residents who are satisfied with tourism in the destination per month/season, percentage of the destination's events that are focused on traditional/local culture and heritage, percentage of residents that are satisfied with the impacts of tourism on destination's identity (ETIS,2016), wellbeing of host communities (employment, benefits for local economy), effects of tourism on communities (social benefits, changes in lifestyles, housing), access by local residents to key assets (access to important sites, satisfaction with access levels), gender equality (family wellbeing, equal opportunities in employment), etc. (WTO, 2004) NPs generate a major impact on local communities and they are interested in developing positive relationship with them while social vitality of surrounding areas is crucial for long term success of NP (Fortin & Gagnon, 1999).

This research conducted in NPs in Croatia, has shown that the local populations mostly have positive attitudes toward tourism development in their NPs and in four of them (Kornati, Mljet, Paklenica and Plitvica Lakes) 50 percent or more of their local population agree or strongly agree that tourism have positive effects on the standard of living and on the retention of local population in their NPs (Tab 2). NPs Mljet and Kornati do not have a large share in the total number of visitors of NPs in Croatia but they recorded large number of visitors per one inhabitant. Research has shown that in these two NPs local population agree or strongly agree that tourism positively effects on the standard of the local population. However, research has shown that in the two most visited Croatian NPs (Krka and Plitvica Lakes) local populations agrees or strongly agrees that tourism positively affects their standard of living, even the number of people who lives in these areas is decreasing (Tab 1). Therefore, overtourism could annulated positive economic effects when it comes on the living standard of local population.

In all NPs local population agrees that sustainable tourism development is the only way to develop tourism in their respective NPs. However, only in the most visited NPs in Croatia (Krka and Plitvica lakes) the local population is, in significant percentages, familiar with tourism development plans while in other NPs the local population, in most cases is not informed about the existence of those plans. This result indicates that destination management does not properly communicate with local the population about their future steps in tourism development.

3.2.2. Discussion

Last few decades generally is accepted, that sustainability is the only way to develop tourism. However, on the international level exist only 2 documents with the elaboration of sustainability indicators which could help destination management in their effort. Withal, there are no special indicators have been developed for specific areas, as rural and preserved areas are. Destination management could use a philosophy of Limits of Acceptable Change (LAC), which defines specific indicators of tourism impacts on environmental quality and social impacts (CREST, 2018).

Despite their heterogeneous features, all NPs strive for long-term sustainable development of tourism and to achieve this goal it is necessary to implement the principles of ecological, socio-

cultural and economic sustainability which have to be monitored and analysed through sustainable development indicators (Pešutić & Bučar, 2008).

Unpredicted visitation growth in NP Plitvica Lakes brings lot of positive economic effects, while it at the same time endangers ecological values of the NP. Although, Plitvica Lakes is the only Croatian NP on UNESCO protected list, it may lose this status due to the ecological destruction while exponential growth of visitation caused production of the huge amount of solid waste and sewage water (Hina, 2018). This situation with overtourism in Plitvica Lakes illustrates why in the future development of tourism in all Croatian NPs larger number of indicators in each of the three sustainable principles should be taken in consideration. Therefore, overtourism may bring positive economic benefits to NPs but in the same time local population does not need to feel those positive effects as it was pointed out by Goodwin (2017), that a situation in which local population in tourist destinations feel that the number of visitors is too high and that the quality of life in the area is unacceptably reduced.

The leading question for management of national parks is: "Where to set the boundaries for the protection of natural and social resources while developing tourism? And what kind of tourism activities are acceptable in that fragile space?" Managing NPs is becoming increasingly challenging to enable future tourism development and at the same time, ensure maximum protection of natural and cultural resources. To reach these goals, management of NPs must adopt strategic development plans. This process should consider not only natural features, environmental protection, economic benefits and number of visitors, but also the input from the local population.

In protected areas, on the attitudes of local residents toward environment protection mainly is result what their source of income (Zhang et.al., 2019). And, although tourism creates many positive benefits to local economies in protected areas, from placement of their agricultural products and crafts to the participation in the transportation, cooking, tour guiding, nevertheless also requires participation of the local population in the process of decision making and future tourism plan development (Wondirada & Ewnetu, 2019). The destination management should be very careful in the future planning of tourism and not to be followed only by number of tourism while overtourism could diminish all economic positive effects. Local people's perception is essential for implementing strategies and plans because if they oppose this process of the development then sustainability will not be reached and the whole future development could be jeopardized.

4. Conclusion

In the last few decades, the term sustainable development has been widely used in tourism theory and practice. So far, there have been several documents drafted at the international level geared to accelerate the implementation of sustainable development in the tourism practice. However, implementing principles of sustainability in tourism practices is not an easy task. Each tourist destination has unique natural and sociocultural features and that complicates the implementation process. The problem is even more in pronounced protected areas, because NPs are fragile natural areas which should be developed by carefully implementing environmental management practices. Mostly they are located in rural and less developed areas of country. However, very often, destination management in protected areas is mainly led by economic principles in this process. Two reasons could be pointed out for this situation: (i) it is easier to measure tourism's economic rather than its overall effects and (ii) these positive economic effects bring numerous beneficial effects for the local population such as increasing living

standards, new jobs opportunities, and more generally stimulating the local economy. However, when the number of visitors crosses the limits, the positive effects diminish. Therefore, it is important to develop a methodology which could be implemented in protected areas, especially in those which are constantly recording an increase in the number of visitors.

Findings from the research strongly suggest how only the adequate implementation of sustainable tourism development principles and indicators could lead to long-term tourism development. Research also showed, that in this process of tourism development none of the three sustainability principles should be neglected. Therefore, in this process, it is crucial to apply a holistic approach that will equally respect all principles of sustainability.

The main limitation of this research is in the insufficient number of questionnaires that were completed according to the socio-demographic groups of respondents as well. Future research should include a larger number of the local population. Withal, other indicators in the field of socio-cultural principles, including general living conditions, health care and education possibility should be implemented.

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THE IMPACT OF REGULATORY CHANGES ON THE TAX REVENUES OF THE CITY OF ZAGREB

ABSTRACT

Frequent changes in laws regulating subnational[1] units' funding have led to system instability, poor budget planning, and difficulties in effectively financing devolved functions. Particularly significant changes occurred in the distribution of the personal income tax revenues, corporate income tax sharing and real estate transfer tax. The paper aims to describe in detail these changes and their impact on the revenues of local and regional units in general and the City of Zagreb in particular. The paper covers the period from 2007 to 2019, with a particular focus on the period from 2014 to 2019 when most significant changes occurred as a consequence of the tax reform. The average total revenues and receipts of the City of Zagreb in the period from 2002 to 2018 amount to HRK 6.4 billion, while total expenditures and expenses stood at HRK 6.5 billion on average. Authors employ fiscal impact analysis and scenario analysis to estimate the total cumulative loss of Zagreb's tax revenues due to changes in regulations (net fiscal effect) in the five-year period (from 2015 to 2019) to about HRK 5.1 billion. In the same time, revenues (including taxes) of subnational sector in general have increased. These results should be interpreted with extreme caution because in addition to changes in tax regulations, the revenues were affected by macroeconomic trends (cycle change), but also some other variables and effects that are not analyzed in more detail. Nevertheless, the analysis can be very useful for getting an impression of the influence of recent regulatory changes on intergovernmental fiscal relations and redistribution of financial resources on local and regional government level.

Keywords: *the City of Zagreb, regulatory changes, net fiscal effects, tax revenues, local and regional government units.*

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[1] Subnational government units in Croatia includes regional government units (counties) and local government units (cities and municipalities).

1. Introduction

Tax revenues are the most important revenue source for local and regional government units (LRGUs). In the last ten years, there have been significant changes in the LRGUs' financing system. They have been on the rise since fiscal decentralization began in Croatia, and are decreasing after 2008 due to the effects of the global financial crisis. This was followed by years of recovery from 2012 to 2014, whereas the decrease in the tax revenue after 2014 was mainly due to regulatory changes (in the tax system, but also in the LRGUs' financing system).

Figure 1: Tax revenues of the City of Zagreb and other LRGUs from 2002 to 2018 (in billion HRK)
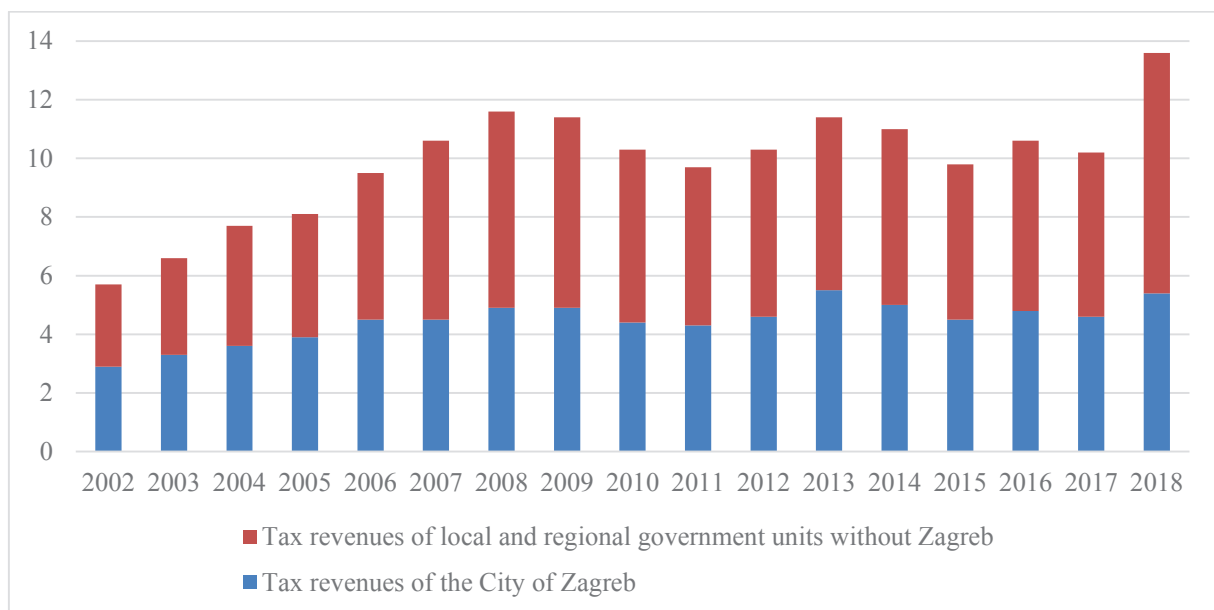
Source: authors' calculation based on data from the Income and Expenditure, Receipts and Expenditures Report (PR-RAS Form) for the years 2002-2018

These changes have also affected the fiscal position of the City of Zagreb. This paper aims at describing these changes in detail and analyze their impact on the City of Zagreb's revenue. The paper refers to the period from 2007 to 2019, with an emphasis on the period from 2014 to 2019 when it came about significant changes in the LRGUs' financing due to a comprehensive tax reform.

The effects of regulatory changes on Zagreb's revenues are first analyzed on an annual basis, i.e. for a period of 12 months from the entry into force of each change. However, it raises the question of how much Zagreb lost cumulatively compared to the hypothetical scenario assuming constant regulatory framework (no changes) throughout the observed period. Therefore, the overall cumulative impact of changes is analyzed for the period from 2014 to 2019, when most significant changes occurred.

This paper uses fiscal impact analysis (FIA), to estimate the impact of regulatory changes on LRGUs revenues. Since the 1930s FIA has been part of the planning profession. During the 1960s, fiscal impact techniques were applied to evaluate the effects of industrialization on local governments (Hirsch, 1964; Kee, 1968). FIAs are increasingly demanded by policy makers and resource managers because they address issues that are key to a wide variety of decisions, and can be defined as changes in LRGUs revenues and expenditures due to economic, but also

regulatory changes (see Shaffer, 1989). Because the fiscal impacts are of considerable interest to local officials and their constituents, the FIA should be designed to produce information in a form that is most useful to policymakers (Leistritz, Murdock, 1988). In the 1970s, FIA emerged as an almost universal accompaniment to large-scale development proposals, either volunteered by the developer or required by local governments or state regulatory bodies (Leistritz, 1994). As state and local governments become more heavily involved in economic development efforts, FIA tools can be useful in helping establish priorities for incentive programs. In an era of budget stringencies, local units may feel an increasing need to examine direct as well as indirect benefits and costs in determining the use of scarce resources for incentive programs. FIA offers tools that can be useful in guiding such decisions (Lansford, Jones, 1991; Coon et al., 1993). More recently, FIA has become essential for evaluating fiscal impact of structural reforms. Fiscal impact analysis of structural reforms is a tool for connecting budget planning and economics by estimating the effect of changes in construction, employment, population, school enrollment, and other structural changes on government's budget.

After introduction, the second chapter provides a detailed analysis of key changes in the LRGU's financing system in the period from 2007 to 2019, whereas the third chapter describes analysis of key changes in the personal income tax (PIT) in the same period. The fourth part of the paper present the effects of these changes on the revenues of the City of Zagreb on an annual basis. The fifth part analyzes the total cumulative effect of changes for the period from 2014 to 2019, and the sixth part is the conclusion.

2. Regulatory changes of the LRGUs' financing system

Since 2006, the Law on financing of local and regional government units has changed 6 times, and the Personal income tax act has changed just as many times. This means that in 12 years (until 2019) there have been a total of 12 changes to the laws regulating this part of LRGUs' revenue. Besides changes in the PIT and revenue sharing arrangements, changes occurred also in the corporate income tax (CIT) (only for the period up to 2007 when the CIT was shared) and real estate transfer tax (RETT). Such frequent regulatory changes regulating the financing of LRGUs are not desirable because they prevent long-term strategic planning and make it difficult to prepare budgets and budgetary projections, plan investment projects, perform long term borrowing and draw up repayment projections. To avoid adverse effects, regulations related to LRGUs' financing should be as stable as possible, and if they do change – these changes should be planned, known in advance and preferably set out in transparent, clear and publicly available formulas. In addition, a transition period should be envisaged.

2.1. Changes in the PIT revenue sharing

Through revenue sharing, the central government cedes the part of the tax and/or non-tax revenues to LRGUs. In Croatia, PIT revenues were shared between the central government and LRGUs. Until 2007, the CIT revenues were also shared, but in 2007 the central government completely took over the CIT and in turn gave up additional share of PIT revenues for the benefit of LRGUs. By 2017 the RETT was also shared and now it is left to local government units (LGUs) – cities and municipalities.

Following the amendments to the Law on financing of local and regional government units that were in effect in 2019, PIT revenues were divided between counties (17%) and cities and municipalities (60%). An additional share of 6% belongs to LRGUs that have taken over the financing of decentralized functions, and a 17% share is used to finance the fiscal equalization

system. The City of Zagreb, having simultaneously the status of a county, retains the sum of the PIT shares belonging to the city and the county, increased by the share intended for the financing of decentralized functions.

Table 1: PIT revenue sharing in the City of Zagreb (in %)

	Central government	City of Zagreb	Decentralized functions	Equalization fund for decentralized functions	EU projects	Total for Zagreb
1.1.1994-1.7.2001	55	45				45
1.7.2001-1.1.2002	24.2	45	9.8	21		54.8
1.1.2002-1.1.2003	24.6	45	9.4	21		54.4
1.1.2003-1.1.2007	21.6	47	10.4	21		57.4
1.1.2007-1.7.2008		67	12	21		79
1.7.2008-1.3.2012		70.5	12	17.5		82.5
1.3.2012-1.1.2015		72.5	12	15.5		84.5
1.1.2015-1.1.2018		76.5	6	16	*1.5	82.5
1.1.2018-		77	6	**17		83

Notes: * Share for projects co-financed by European structural and investment funds led by municipalities, cities and counties, legal entities under their majority ownership or co-ownership and institutions they founded; ** Share for financing the fiscal equalization system (Until 2018, funds within this category were used to finance equalization grants for decentralized functions. However, from 2018 the central government takes over the equalization funding for decentralized functions leaving this share of PIT for funding the newly-established fiscal equalization scheme.)
Source: Law on Financing of Local and Regional Self-Government Units (OG 117/93, 33/00, 59/01, 107/01, 117/01, 150/02, 147/03, 132/06, 73/08, 25/12, 147/14, 100/15, 115/16, 127/17).

2.2. Changes in the CIT revenue sharing

Although only the PIT revenues are currently shared in Croatia, the tax sharing system included also the RETT and, until 2007, the CIT. CIT revenues have played a significant role in the fiscal equalization system also after 2007, as the central government assumed the obligation to compensate LRGUs in the areas of special national concern (SNC) for the revenues lost by ceding the CIT to the central government level. Thus, the central government returned the CIT collected in their territory to LRGUs in areas of (SNC) through central government grants.

The transfer of CIT to the central government budget caused a decrease in the tax revenues of LRGUs, which was (more or less) compensated by an increase in LRGUs' share of PIT. This hypothesis can be further tested for the City of Zagreb by calculating the amount of revenue from the CIT, PIT and surtax that the City would generate according to the regulations that were in force in 2006 when the CIT was still shared between the central government and LRGUs (figure 2). According to available data – without considering the macroeconomic cycles and other variables that may indirectly affect the revenues from these taxes – the City of Zagreb would in 2018, according to the regulations that were in force in 2006, collect about HRK 3.68 billion from PIT and surtax, which is by HRK 1.25 billion lower than what the City has actually collected. However, at the same time the City would realize HRK 1.29 billion from the CIT revenue, which is currently not realized. Therefore, according to the regulations from 2006 the City of Zagreb would in 2018 generate about HRK 40 million more from CIT, PIT and surtax than it has actually achieved in that year.

Figure 2: Net fiscal benefit from the transfer of CIT revenues to the central government for increased part in PIT (in million HRK)
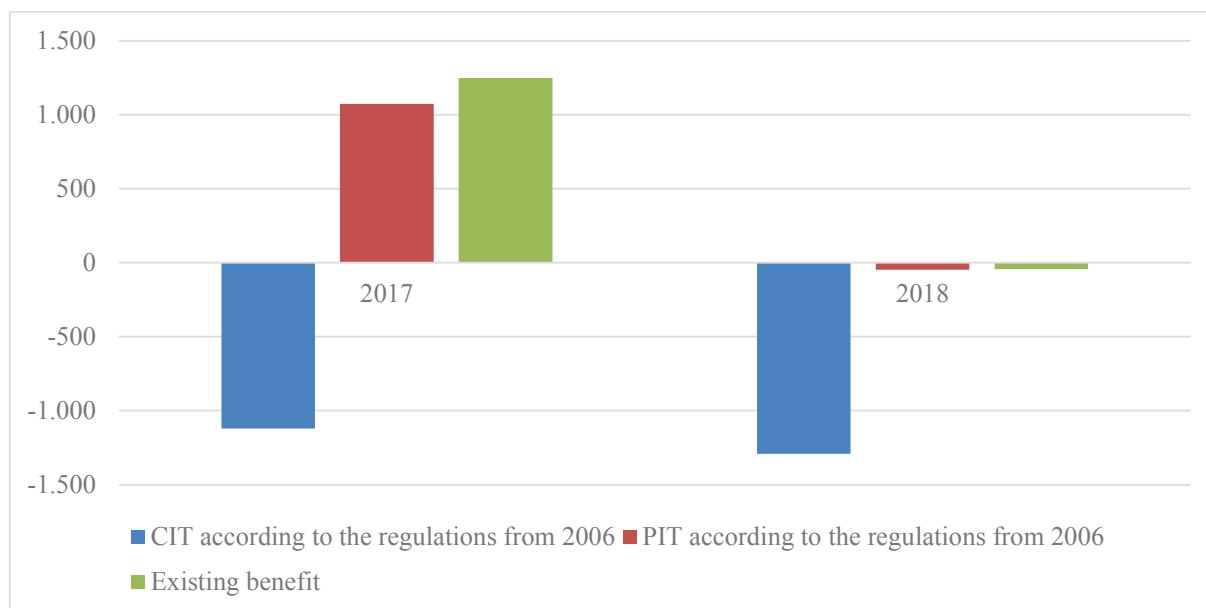
Source: authors

Although this calculation is very rough, it can be concluded that an increase in the PIT revenue really compensated the loss of CIT. Therefore, the regulatory changes in the LRGUs' financing system that occurred in 2007 (and their effect in comparison with 2006) will not be considered in more detail in the context of this paper

2.3. Changes in the RETT system and revenue sharing

The regulations regulating the RETT were significantly more stable in the period under view. Several changes have nevertheless affected the City's revenues. Until 2014, neither the rate nor the City of Zagreb's share of real estate transfer tax revenues have changed. Table 2 provides an overview of key changes that have affected the City's revenues. Since 2014, the tax rate has decreased on two occasions, which has affected the reduction of tax revenues.

Table 2: Changes in real estate transfer tax between 2007 and 2019

	2007-2014	**2015**	**2016**	**2017-2018**	**2019-**
Rate	5%	5%	4%	4%	3%
Share of the City of Zagreb	60%	80%	80%	100%	100%

Source: authors based on Real Estate Transfer Tax Act (Official Gazette 69/97, 26/00, 127/00, 153/02, 22/11, 143/14, 115/16, and 106/18)

On the other hand, in 2017 the RETT ceased to be shared and became a local government tax. The City of Zagreb's share of RETT revenues also increased on two occasions, first in 2015 to 80%, and then in 2017 to 100%. These changes have had a positive impact on the revenues of the City of Zagreb. Another change, with a positive impact on tax revenues, is the abolition of the first property purchase reliefs since 2017.

3. Regulatory changes in the PIT system

Besides changes in the LRGUs' financing system (revenue sharing arrangement) itself, the most important regulatory changes that have occurred in the last decade, having a significant impact on LRGUs' financing, are changes in the PIT system, i.e. changes in the elements determining the level of the PIT burden such as personal allowance, tax brackets and rates or expansion of the tax base in the context of capital income taxation (dividends, interest, and capital gains). The system of PIT in Croatia was subject to frequent changes during the observed period. In general, the PIT is set to tackle various objectives – from LRGUs' financing to pro-natal policy, income redistribution, territorial redistribution and other political objectives. Such a wide and often unspecified spectrum of objectives pursued by PIT has resulted in frequent changes that have contributed to the instability of the tax system as a whole. Croatia has some sort of a hybrid dual PIT system, i.e. it taxes several types of income in different ways. In particular, the tax treatment of income from labour on the one hand and income from capital and assets on the other is different. In this context, regulatory changes in these two segments of PIT have a different effect on changes in the City of Zagreb's revenue.

3.1. Changes in the taxation of labor

The most important elements determining the PIT revenue include personal allowance, tax rates and tax brackets. In the period between 2007 and 2020, there were eight changes of the PIT system, where at least one of these elements has changed (Table 3).

Table 3: Changes to the personal allowance, rates, and brackets in the PIT system between 2007 and 2020

Period	Short description of the change	Basic personal allowance (in HRK)	Tax rates and tax brackets
2005-2008/Jun.	Personal allowance	1,600	15% to 3,200 25% 3,200-8,000 35% 8,000-22,400 45% above 22,400
2008/Jul. – 2010/Jun.	Personal allowance	1,800	15% to 3,600 25% 3,600-9,000 35% 9,000-25,200 45% above 25,200
2010/Jul. – 2012/Feb.	Rates and brackets	1,800	12% to 3,600 25% 3,600-10,800 40% above 10,800
2012/Mar. – 2015	Personal allowance and brackets	2,200	12% to 2,200 25% 2,200-8,800 40% above 8,800
2015 – 2017	Personal allowance and brackets	2,600	12% to 2,200 25% 2,200-12,200 40% above 12,200
2017 – 2019	Personal allowance, rates and brackets	3,800	24% to 17,500 36% above 17,500
2019 – 2020	Brackets	3,800	24% to 30,000 36% above 30,000
From 2020	Personal allowance	4,000	24% to 30,000 36% above 30,000

Period	Short description of the change	Basic personal allowance (in HRK)	Tax rates and tax brackets
From 2021 to 2030		Tax refunds to young people through the tax return	

Source: authors based on the Personal Income Tax Act (Official Gazette 177/04, 73/08, 80/10, 114/11, 22/12, 144/12, Decision USRH 120/13, 125/13, 148/13, USRH Decision 83/14, 143/14) and Personal Income Tax Act (Official Gazette 115/16, 106/18, 121/19)

The basic personal allowance is the most important factor determining the tax burden. It is a non-taxable part of income that reduces the tax base. According to the principle of fairness, it is considered that income used to cover the basic living needs of the taxpayer (existential minimum) should not be taxed. Table 3 shows that the basic personal allowance is growing continuously. The higher the personal allowance, the more taxpayers do not pay tax. In other words, the increase in the personal allowance affects the decline in revenues of LRGUs, including the City of Zagreb.

3.2. Changes in the taxation of capital and assets

In addition to the PIT from labour, in Croatia, there is also income from property and property rights and income from capital. In both cases, income tax is paid at proportional rates that vary depending on the type and manner of generating the income from capital and assets. The personal allowance is not recognized in both cases. It is important to mention that the tax paid in this way is considered the final tax, i.e. it does not enter into the annual calculation of taxes.

Changes in this segment of PIT in the observed period are rare. It is mainly about aligning tax rates with those applied in labour income. The changes that are important for collecting the tax revenues relate to the expansion of the tax base in the segment of capital income taxation. Three key changes have had a positive impact on LRGUs' revenue-raising capacities:

1) Introduction of dividend taxation in March 2012 of 12% on receipts above 12 thousand HRK. Furthermore, since 2015 census has been abandoned, i.e. dividends are taxed regardless of the amount.
2) Extension of capital income coverage for interest on savings and capital gains from financial assets. Interest on savings has been taxed since 2015 and capital gains since 2016.
3) PIT revenue based on interest on savings is from 2018 left to LRGUs. Until then, this was the central government revenue.

Figure 3 shows revenues from PIT and surtax from capital, property and property rights. The figure clearly shows that only capital income tax revenues have changed significantly in the observed period. In particular, the revenue increased after 2012 – with the introduction of dividend taxation, in 2015 – when the taxation of interest on savings was introduced and in 2016 – with the taxation of capital gains.

Figure 3: Revenues from the PIT and surtax on capital, property, and property rights in the City of Zagreb from 2006 to 2018 (in million HRK)
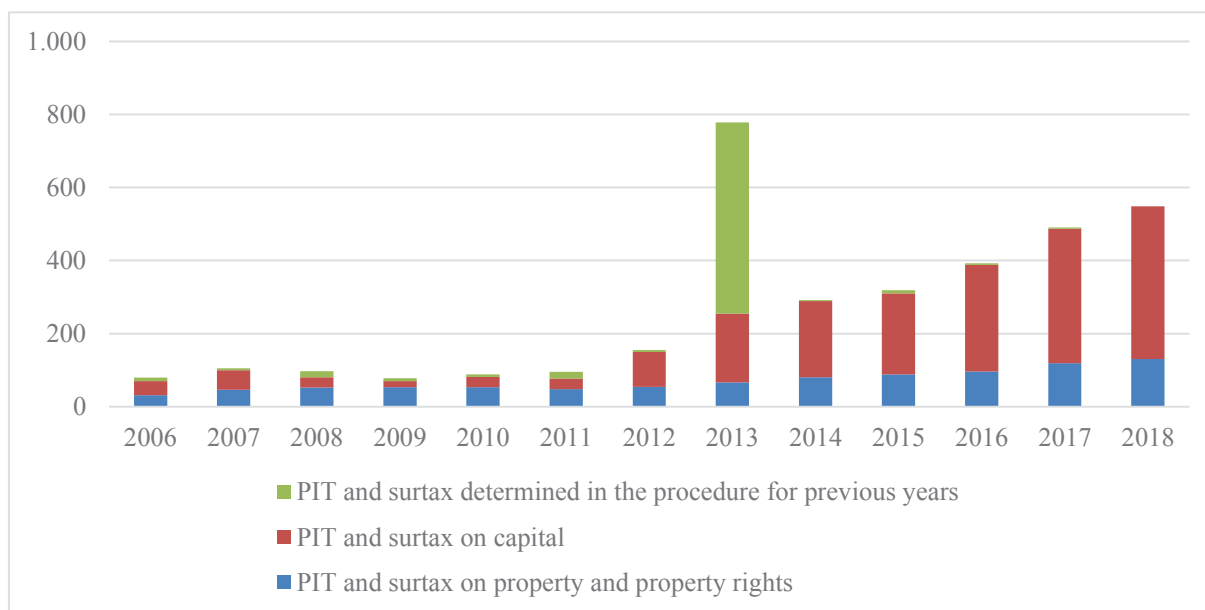
Source: authors according to data of the Ministry of Finance

An additional increase in revenues was achieved in 2018 when PIT revenue based on interest on savings was ceded to LGUs (prior to that – it was the revenue of the central government budget).

4. Total effects of changes in regulations on the tax revenues of the City of Zagreb

In the period observed, from 2007 to 2019, City of Zagreb's total revenues from PIT, CIT and RETT increased in cumulative amount by HRK 1 billion (from 4.4 billion HRK in 2006 to 5.4 billion in 2019). Table 4 shows the decomposition of the overall fiscal impact of all regulatory changes described in previous sections. These effects were analyzed and interpreted on an annual basis as required by the generally used methodological framework for analyzing the fiscal effects of regulatory changes. In 2015, for example, the City's share of PIT revenues decrease, but the impact of this amendment was recorded only in 2015 (for a period of 12 months from the entry into force of this regulation). In 2016 and 2017, the impact of the change in regulations was not recorded (amounts to 0) although the change in regulations that came into force in 2015 affected the reduction of tax revenues in all subsequent years. In other words, applying only the methodological framework used in this part of the analysis ignores the cumulative effect of the changes. For this reason, the total cumulative effect of changes in regulations on City of Zagreb's revenues in the five years period (from 2015 to 2019) is analyzed in the next section.

Table 4: Annual fiscal impact of changes on City of Zagreb's revenue from 2006 to 2019 (in million HRK)

Years	Income PIT, RETT, and CIT	Annual change of PIT, RETT, and CIT						Total Change
		PIT labour	PIT capital	PIT sharing	RETT	CIT	Cycle	
2006	4,405							
2007	4,413			930		-1,433	511	8
2008	4,731	-135		79			376	320
2009	4,720	-140		78			50	-11
2010	4,270	-130					-319	-449
2011	4,200	-132					61	-70
2012	4,457	-90	41	70			236	257
2013	5,407	-29	90	16			871	949
2014	4,897						-509	-509
2015	4,412	-696	80	-85	32		182	-485
2016	4,695		70		-41		254	282
2017	4,490	-685			38		442	-204
2018	5,302			24			787	812
2019	5,411	-77			-102		289	108
Total		**-2,117**	**282**	**1,114**	**-73**	**-1,433**	**3,235**	**1,008**

Source: Authors

The largest loss of income was achieved due to regulatory changes in the PIT from labor. The sum of annual changes amounts to -2.1 billion HRK. This was the PIT segment with most frequent changes and significant tax relief. The second biggest loss came from the CIT (in 2007, Zagreb lost around HRK 1.4 billion). However, this was compensated with an increased share in the PIT, so the total cumulative impact of these changes is almost neutral. The total sum of the annual effects of changes in the PIT sharing scheme on the City of Zagreb's tax revenues amounts to HRK 1.1 billion.

However, not all LRGUs suffered the same consequences of recent regulatory changes. In order to give a more comprehensive picture of these effects, we provide below the results of the fiscal impact analysis for all LRGUs in aggregate (complete local and regional government sector in total). The most significant loss of revenue due to changes in regulations was achieved in the PIT and surtax and the LRGUs' financing system itself. The sum of annual changes (12 months after the entry into force of each new regulation) for both of these systems (laws) is about 2 billion HRK. The changes in the Law on financing of LRGUs were to the benefit of the LRGUs (increasing the LRGU's revenue by about 2 billion HRK), whereas the changes in the PIT and surtax were to the detriment of the LRGU (by the same amount).

Table 5: Fiscal impact of changes in the LRGUs' financing system, PIT and surtax, RETT and local taxes from 2015 to 2019 (in million HRK)

	2015	2016	2017	2018	2019	Total
Law on financing of LRGUs						**2,045.0**
RETT changes	232.0					232.0
Interest on savings	308.0			369.0		677.0

	2015	2016	2017	2018	2019	Total
Equal. grants for dec. funct.				1,647.0		1,647.0
Abolishment of grants to LRGUs				-716.0		-716.0
Compensating measures				102.5	102.5	205.0
Personal Income Tax Act						**-2,010.0**
Allowance, rates and brackets	-1,800.0		-1.500 +1.500		-210.0	-2,010.0
Real Estate Transfer Tax Act						**61.0**
Abolishment of allowances			115.0			115.0
Decrease of tax rate			-126.0		-100.0	-226.0
Changes in the tax sharing			172.0			172.0
Local Tax Act						**-126.0**
Decrease of IGT, abolish. of CTT			-123.5			-123.5
Scope of RMVT				-2.5		-2.5
Total	**-1,260.0**	**0.0**	**37.5**	**1,400.0**	**-207.5**	**-30.0**

Note: RETT – Real Estate Transfer Tax, IGT – Inheritance and Gift Tax, CNT – Company or Title Tax, RMVT – Road Motor Vehicle Tax.
Source: Authors' calculations based on Government of the Republic of Croatia (2014, 2014a, 2015, 2016, 2016a, 2016b, 2016c, 2017, 2017a, 2018, 2018a and 2019)

In general, the effects of changes in the LRGUs' financing system, PIT and surtax, RETT and local taxes from 2015 to 2019 seem to compensate each other so that the sum of all annual fiscal effects of all these changes turns out to be only marginally negative (by HRK 30 million). Comparing these results with results from the previous table – it is evident that significant redistribution has been performed between LRGUs at the cost of the City of Zagreb. In order to calculate the total cost of 2015-2019 regulatory changes – in terms of the foregone revenue – for the city of Zagreb, we continue with calculating the total cumulative effects of these changes in the period under observation.

5. The cumulative impact of regulatory changes on City of Zagreb's tax revenues from 2015 to 2019: a hypothetical model

This part of the paper presents cumulative effects of regulatory changes based on a hypothetical model that reveals what the tax revenues would be for each year observed if other regulations (those from 2014) were in force. In other words, it reveals, for example, how much PIT from labour would the City of Zagreb have collected if basic tax elements (personal allowance, tax brackets, and rates) had remained the same as in 2014. At that time, the personal allowance was set at 2,200 HRK, while three tax brackets were in use (12% up to a tax base of 2,200 HRK; 25% for a tax base between 2,200 and 8,800 HRK and 40% for a tax base above 8,800 HRK). Since the average tax burden was significantly higher then, if it had remained in force it would have meant higher tax revenues for the City of Zagreb in the coming years. Table 6 depicts the decomposition of foregone revenue for each year observed.

Table 6: Estimate of tax revenues changes assuming constant tax regulations as of 2014 (in million HRK)

Years	PIT			Total PIT	RETT	Total taxes
	Labour	Capital	Sharing			
2015	-696.50	80.77	-99.06	**-714.79**	32.77	**-682.02**
2016	-714.02	82.81	-104.33	**-735.54**	10.41	**-725.13**
2017	-1,442.39	158.61	-114.27	**-1,398.04**	47.68	**-1,350.36**
2018	-1,494.10	208.43	-95.39	**-1,381.06**	93.49	**-1,287.57**
2019	-1,695.28	264.99	-100.96	**-1,531.25**	0.00	**-1,531.25**
Total	**-6,042.29**	**795.62**	**-514.01**	**-5,760.68**	**184.36**	**-5,576.32**

Source: Authors

If there had been no changes in regulations in 2015, Zagreb would have collected HRK 696.5 million more PIT revenues in that year than it actually did. In 2016, PIT regulations for labour were unchanged. However, if it had remained the same as in 2014, Zagreb would have earned HRK 714 million more in 2016 than it actually earned. In 2017, there has been a further reduction of the tax burden and the impact of the change is skyrocketing. If the 2014 regulations had remained in force in 2017, Zagreb would have earned HRK 1.44 billion more. In the period from 2015 to 2019 Zagreb lost a total of over HRK 6 billion from PIT on labor alone.

Since 2015, there have been also positive tax changes for City of Zagreb's revenues. Since 2015, the census for dividends has been abandoned. Interest on savings has been taxed since 2015, and capital gains since 2016. PIT revenue based on the taxation of interest from savings is ceded to LGUs in 2018. Without these changes, in the period from 2015 to 2019 Zagreb would have earned HRK 795 million less.

Changes in the PIT sharing scheme have had a negative impact on the City of Zagreb's tax revenues. Since 2015, the share of PIT belonging to Zagreb has decreased from 84.5% to 82.5%. As of 2018, this proportion has increased to 83% but remains below 2014 levels. If the PIT share in the period from 2015 to 2019 had remained 84.5% (as of 2014), Zagreb would have earned HRK 514 million more throughout the observed period. In addition, Zagreb earned HRK 184 million more due to changes in the RETT. Although the tax rate decreased, the positive effect of eliminating the tax reliefs for the purchase of the first property and increasing the share of the RETT for the benefit of the City of Zagreb prevailed.

Finally, in the period from 2015 to 2019, Zagreb has cumulatively lost over HRK 5.5 billion. The total annual loss of revenue increases year after year. This is logical because the number of employees in the observed period grew, as did the wages, as well as turnover and real estate prices.

The results of the analysis point to extremely high losses of the City of Zagreb due to changes in regulations that directly or indirectly affect the financing of LRGUs. However, this data should be interpreted with caution because, in addition to changes in tax regulations, the City's revenues were also affected by macroeconomic effects, but also by some other variables that have not been analyzed in this paper. The total cumulative effect of all the analyzed regulatory changes on City of Zagreb's revenue is shown in Figure 4.

Figure 4: The cumulative effect of regulatory changes on City of Zagreb's tax revenues from 2015 to 2019 (in million HRK)
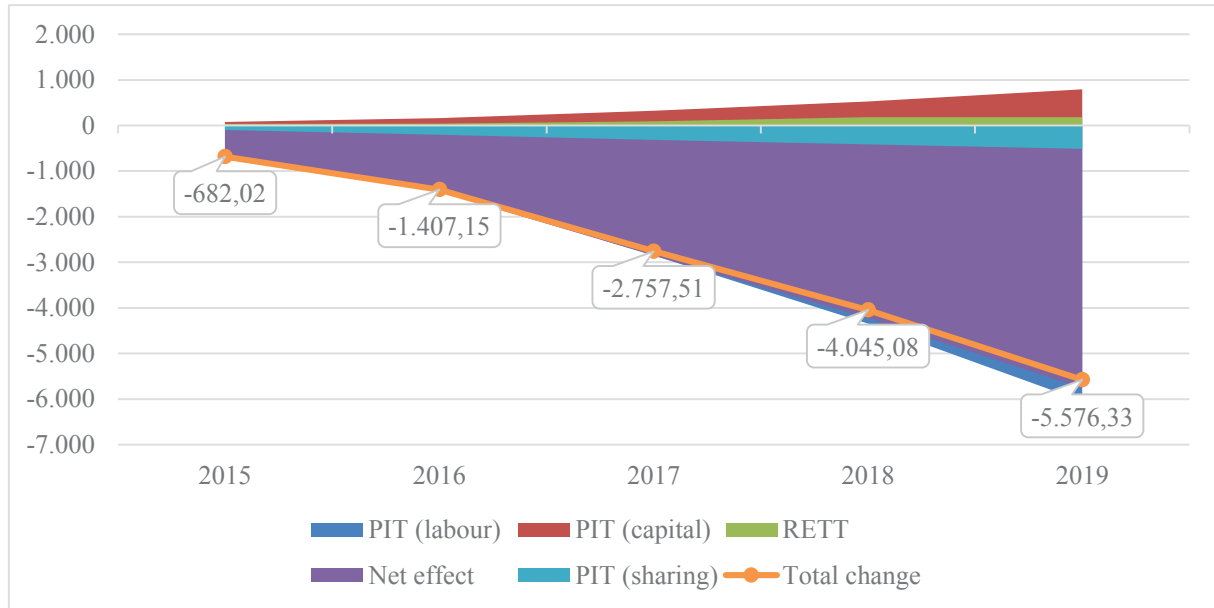
Source: Authors

Since in several "circles" of tax reform in recent years the tax burden on labour has been significantly reduced, and consequently the revenues of LRGUs, under the Law on the Implementation of the State Budget of the Republic of Croatia for 2017 (The Official Gazette 119/16) grants are planned as a compensation measure in the State Budget for 2017. These grants were paid to LRGUs, every month, in the amount of the difference between PIT revenues generated in 2016 and 2017. The funds are unconditional (non-earmarked) and are not considered as current grants from the central government budget following the regulations that govern the criteria for determining the salaries and fees of county prefects, city mayors, and municipal heads and their deputies, as well as salaries of officials and employees in administrative departments and services of LRGUs.

Figure 5: Equalization grants for decentralized functions and grants received as compensation measures by the City of Zagreb from 2015 to 2019 (in million HRK)
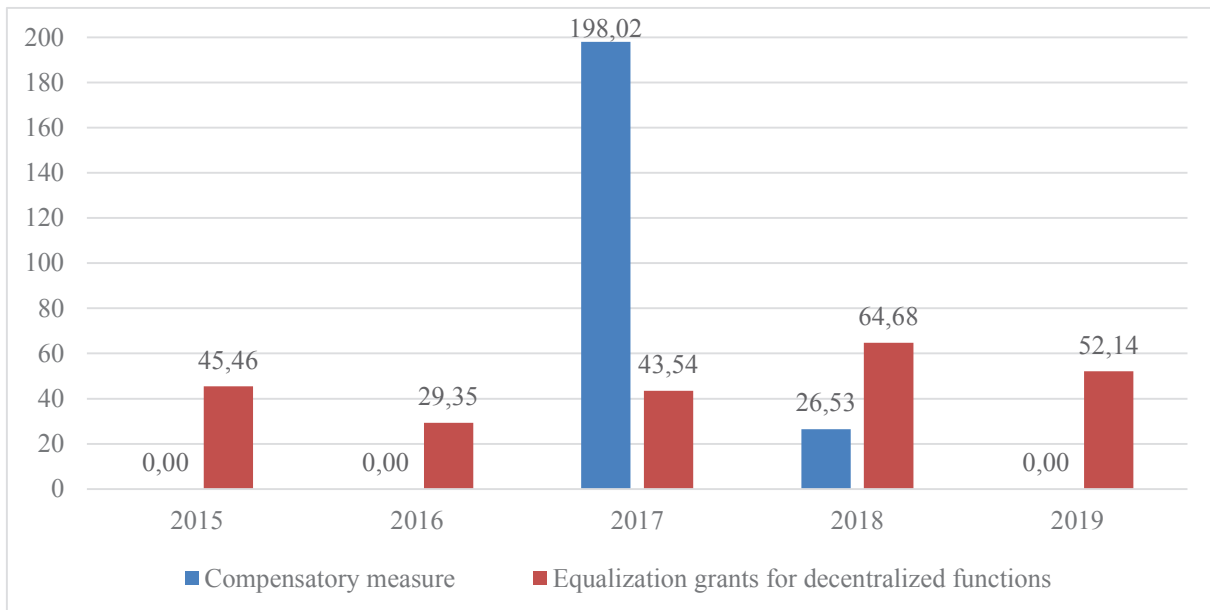
Source: authors based on data of the Ministry of Finance

In addition to grants received as compensation measures, since 2015 the City has become the beneficiary of equalization grants for decentralized functions. These grants ranged from the lowest HRK 29.3 million in 2016 to the highest HRK 64.7 million in 2018 (Figure 5). Since this grant evolved as a direct consequence of the disruption of Zagreb's financial position due to changes in regulating the collection and distribution of tax revenues, they should be taken into account when calculating the overall (cumulative) effects of regulatory changes on Zagreb's tax revenues.

Figure 6: Total cumulative effect of regulatory changes on City of Zagreb's tax revenues from 2015 to 2019 (in million HRK)
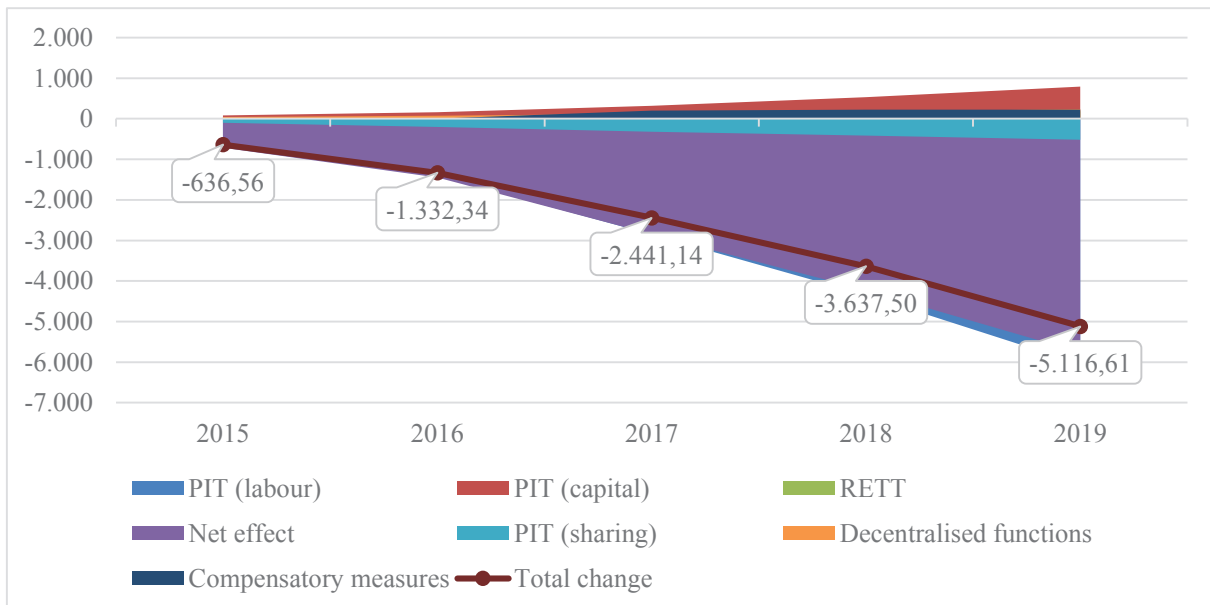
Source: Authors

By including grants received as compensation measures and equalization grants for decentralized functions, that Zagreb receives as of 2015 as elements that had a positive impact on the budget, the total foregone tax revenues of the City of Zagreb due to regulatory changes decreased to about 5.1 billion in the period from 2015 to 2019.

Despite compensatory measures, it is evident that regulatory changes had a negative impact on the fiscal capacity of the City of Zagreb in the observed period. Given that PIT relief is politically highly opportunistic as it affects almost the entire population and the tax expenditure incurred by such measures mainly affects the budgets of LRGUs, it is possible to expect a further reduction of the tax burden on labour. However, if this occurs, consideration should be given to the possibility of permanent compensation of fiscal capacity for LRGUs through introducing or decentralizing additional sources of revenue.

6. Conclusion

The City of Zagreb has the highest fiscal capacity of all LRGUs in Croatia. Frequent changes in laws regulating LRGUs' funding lead to instability of the financing system, difficult budget planning, and poses significant obstacles in effectively financing devolved powers. Particularly significant are changes in the PIT sharing system, elements determining the level of the PIT burden – such as personal allowance, tax rates and brackets or expansion of the tax base in the context of capital income taxation. Changes in the CIT and RETT have also proved to have an impact on Zagreb's budget.

Most of these changes, that negatively affected the City of Zagreb's revenue collection capacity, occurred after 2014. Therefore, in the assessments of the fiscal effects of regulatory changes on the revenues of the City of Zagreb, special emphasis is put on this period. The results show that if the legislative framework of 2014 had been in force also between 2015 and 2019, the City of Zagreb would have collected over HRK 6 billion of PIT from labour more than it actually collected. However, PIT on capital income would have been HRK 795 million lower. Zagreb would have also collected HRK 514 million more if the PIT sharing scheme had remained intact in the 2015-2019 period. At the same time, the City would have collected HRK 184 million less from the RETT. Finally, in the observed period, Zagreb faced a total of over HRK 5.5 billion of foregone tax revenues due to regulatory changes affecting LRGUs' tax revenues.

Nevertheless, not all LRGUs suffered the same consequences of recent regulatory changes. The effects of changes in the LRGUs' financing system, PIT and surtax, RETT and local taxes from 2015 to 2019 seem to compensate (cancel out) each other so that the sum of all annual fiscal effects of all these changes for all LRGUs in aggregate (complete local and regional government sector) turns out to be only marginally negative (by HRK 30 million). Comparing these results with results obtain for the City of Zagreb alone, it is evident that significant redistribution has been performed between LRGUs at the cost of the City of Zagreb. This is in line with the deserved outcome of changes implemented in the LRGUs' financing system and the introduction of new fiscal equalization system aiming to mitigate disparities in LRGUs fiscal capacities.

Given that PIT relief is politically highly opportunistic as it affects almost the entire population and the tax expenditure incurred by such measures is mainly reflected in LRGUs' budgets, it is possible to expect further lowering of the tax burden on labour. Nevertheless, without precise analyses and clear, transparent and effective measures by which LRGUs will be compensated in the long run for the loss of fiscal capacity due to a reduction of the PIT burden, further PIT

relief, through the increase in the basic personal allowance, or the reduction of tax rates, could significantly impair the financial stability of certain LRGUs and consequently of the subnational public sector as a whole. In addition, recent developments in financing of LRGUs further support the idea of the introduction of property tax, which would be much more stable and predictable revenue source for LRGUs.

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CUSTOMER RELATIONSHIP MANAGEMENT AND ONLINE SHOPPING UNDER THE INFLUENCE OF THE COVID-19 PANDEMIC IN THE REPUBLIC OF CROATIA

ABSTRACT

The traditional way of doing business and communicating with consumers is changing with the help of digital transformation. Companies have seen the benefits of e-business such as increased interactivity, lower costs, and better communication with consumers, and increasingly offer their products and services online. Customers can make their purchases via smartphone online and avoiding crowds. This research paper aims to explain the importance of developing relationships with consumers in digital marketing. Consequently, the term Online Shopping is gaining importance nowadays when facing the challenge of the COVID-19 pandemic. Because of epidemiological measures and the reduction of risks to themselves and their families, people are more inclined to shop online. The primary goal of this research paper is to analyze consumer behavior during online shopping in the Republic of Croatia. The research aims to find out how often people shop online and which products, why they choose to buy in such a way, what they consider to be the biggest risk of online shopping, what can attract them to choose to buy online, and whether their online shopping increased at the time of the COVID-19 pandemic.
The methodology used in this research paper consists of secondary research, analysis, and synthesis as well as primary quantitative research with the questionnaire survey as an instrument, conducted on a representative sample of 285 respondents.
Research results show that there is still a certain level of uncertainty and mistrust when shopping online, which is why the consumers in Croatia still prefer the method of payment on delivery when picking up goods. Furthermore, the main reason for online shopping for consumers is the variety of offers that allow them to buy products or services that were not previously available.

Keywords: *COVID-19, CRM, e-business, internet, online shopping.*

1. Introduction

Managing consumer relations is of utmost importance in today's business. It represents a business strategy focusing on the customer that has become a major factor in business success. It is necessary to understand and get to know consumers, their habits, desires, needs, and preferences, and based on information to build a database that in the modern world represents a relative competitive advantage. Digitalization is changing, using technologies to identify target consumer groups. The emergence of new bits of intelligence will significantly affect the lives of consumers. More and more companies turn to e-business, which achieves greater interactivity with consumers, flexibility, and faster and cheaper business. While consumers can be easily tracked online through their mobile devices, they are very demanding in their satisfaction with a particular product or service. This is why more and more of them use online capabilities to explore the best solution for their interests. An important segment of this research paper relates to online shopping, which is also the main research topic. Online shopping is on the rise, given the situation caused by the COVID-19 pandemic.

Online sales are growing, but the COVID-19 pandemic and the closure of some stores have led to a much greater interest in internet sales. Although people have not trusted online sales before, it is growing precisely because of the inability to make physical purchases in stores. It could be said that the COVID-19 pandemic and the closure measures adopted by national headquarters have had a positive impact on online sales and caused customers to think about it. Many companies have just maintained their business or expanded it because of such a change in mindset.

The paper aims to analyze consumer behavior when shopping online in Croatia. This research's main goals are to identify what motivates consumers in Croatia to buy online and what is considered the biggest risk. Additionally, the aim is to determine what attracts them to choose to buy online and the link between online shopping with the current situation caused by Covid-19. The research's primary method is quantitative, done using a Google survey as an instrument. Research results are presented, and a conclusion is drawn. The results are presented through charts showing the respondent's responses.

The research paper aims to highlight the importance of technology, digitalization, and consumer relationship management on the Internet. Globalization is achieving an increasing connection between society, which will grow even further in the future, so it is important to align its business and consumers accordingly. The conducted survey also analyzes consumers' habits in Croatia regarding online shopping, which is currently growing significantly due to the Covid-19 pandemic. These data will serve as a basis for comparison for future research on the same or similar topic to be able to see a change in the buying habits of online consumers in Croatia over a period of time. Also, with future research, it is possible to expand the consumer pattern and analyze in more detail in which direction online shopping goes concerning Covid-19, or whether consumers choose foods smarter, types of products that were mostly purchased during the pandemic, whether the number of companies on the internet will increase, etc.

The topic is important given that in Croatia online shopping has not yet been developed on the scale on which it was developed in some other Western countries. The COVID-19 pandemic has led to businesses turning to developing online stores, but also to increased customer interest in online shopping.

1.1. Literature review and the development of hypotheses

Previous research on online shopping conducted by other authors can be a helpful source of information and contribute to gathering data and showing historical data and trends in the consumers' attitude towards online shopping.

Authors Anić, Marković, and Vouk (2013), in their paper "Attitudes of young consumers about the ethics of selling of online retailers, " surveyed 405 students of the Faculty of Economics, Zagreb. The research is related to online shopping and young consumers' attitudes about the ethics of selling of online retailers. Results show that 54.8% of respondents never bought a single product over the Internet, while 45.2% of respondents bought at least a single product. The most purchased products were jewelry, watches, cosmetics, accessories, clothing and footwear, and mobile phones, which is expected because the higher proportion of respondents is female. As the main limitation of online shopping, they cited the inability to try products or goods and their intangibility. It can result in dissatisfaction with the purchased product. Respondents are also concerned about the security of payment for products and services and the security of information. Ethical issues such as security, personal data protection, shipping accuracy, and delivery of goods are the factors that make them resistant to use online shopping. Authors Shanthi and Kannaiah (2015), in their paper "Consumers' Perception on Online Shopping," researched to determine which products are most purchased online and analyzed the factors that influence shoppers to shop online. The most purchased products were clothing and footwear, books, electronics, and eBay, and Amazon proved to be the most desirable websites. The study also found that product prices have the greatest impact on online shopping. The second most affecting factor is product safety, and the third factor affected by online purchases is the warranty, followed by the company's image, data privacy, and a detailed description of the specifications of goods and services.

Sheehan et al. (2019), in the paper "Consumer reactions to price discounts across online shopping experiences," concluded that optimal discount price strategy is number one when it comes to online shopping. With modern machine and digital learning technology, online traders can easily adapt the information to which consumers are exposed and control that certain information reaches a particular consumer. The research concluded that discounts greatly affect online shopping's effectiveness and reinforce the intention to purchase a particular product or service.

Sheth (2020), in the research paper "Impact of Covid-19 on consumer behavior: Will the old habits return or die? " analyses consumer behavior changes under the influence of Covid-19. It has been concluded that the so-called lockdown and social distancing in the fight against the Covid-19 virus have generated significant disruption to consumer behavior. All consumption is limited in time and is tied to the place. Since for the consumer going to the store poses some risk, trade and goods must reach consumers. How technology turns desires into needs has a significant impact on developing new habits such as online shopping that increased significantly at the Covid-19 pandemics.

Santiago-Omar Caballero-Morales (2021) in his work Innovation as a recovery strategy for SMEs in emerging economies during the COVID-19 pandemic referred to small and medium-sized enterprises in times of pandemic. These companies have very limited resources and some of them are expected to disappear from the market due to challenging business adjustments. In his work, he gives an overview of possible steps towards business maintenance even after the pandemic and ways to make better utilization of limited resources. The paper also gives an example of product innovation as a way out of the COVID-19 crisis.

Eger et a. (2021) The effect of COVID-19 on consumer shopping behavior: Generational cohort perspective provides an overview of consumer behavior affected by the COVID-19 pandemic. The study was conducted on the population in the Czech Republic and on people who belong to baby boomers, X and Y generation. Within the research, the influence of fear for health on the change of behavior of these generations has been proven, especially regarding Internet shopping.

Salvatore Aliano et al. (2021) conducted a study in Italy in which they studied customer satisfaction with online food shopping and described the same in the work Measuring

consumers' level of satisfaction for online food shopping during COVID-19 in Italy using POSETs. The research was conducted at a time when Italy was the focal point of the pandemic in Europe and is considered essential for the development of online sales in the future and adaptation for future possible pandemics. From the research, it can be concluded that customers have switched to an online form of shopping to comply with the rules adopted by the competent institutions in the fight against the pandemic.

In India, Goswami and Chouhan (2021) conducted a study on the Impact of change in consumer behavior and need prioritization on the retail industry in Rajasthan during the COVID-19 pandemic. As in other studies, this has resulted in how the COVID-19 pandemic has significantly affected changes in consumer behavior. Also in this study highlighted the importance of analyzing customer behavior by enterprises.

For research in this paper, three hypotheses were set. The first hypothesis refers to forms of payment. Namely, the assumption is that due to the extreme distrust of consumers in the online store and whether the product will arrive at the address and whether it will be of the appropriate quality, customers have a distrust of the online shopping system. In addition, the assumption is that customers do not trust banking transactions either, so that the online form of payment does not seem safe to them and they prefer payment on the spot, i.e. they prefer payment on the spot. when delivering the product. To analyze these assumptions, the first hypothesis was set, which reads:

H1: For safety reasons, most consumers in the Republic of Croatia decide to pay on delivery or on pick up.

The following assumption is that due to the frequent discounts that have recently been presented on different websites or through influencers, customers want a more affordable purchase and tend to shop online. In addition to the above, online shopping shortens their time, so due to today's fast-paced lifestyle, online shopping is becoming more frequent. To prove the above assumptions, hypothesis H2 was set.

H2: The most common reason for online shopping for consumers in the Republic of Croatia is to save time and money.

As evidenced by the review of already conducted researches in other countries, it is safe to assume that with the development of the COVID-19 pandemic in the Republic of Croatia, customers begin to shop online. In addition to giving them the security to buy products from their own home, online shopping is often used during lockdowns. The assumption is that with the start of pandemic more customers turn to online shopping than it would have been if the pandemic had not occurred. To prove these assumptions, the H3 hypothesis is set:

H3: Due to the Covid-19 pandemic, consumers in the Republic of Croatia are more likely to shop online.

2. Managing customer relationship

At the time of today's globalization and high competition, it is necessary to produce high-quality and affordable products and products that meet each consumer's individual needs. Information superiority plays a significant role in this. To succeed in this, it is necessary to continuously collect consumer behavior information and provide them with adequate information. Companies that collect a large amount of information about their consumers also have a greater opportunity to transform their consumer into a client. "Creating competitiveness through information superiority to build long-term relationships with consumers is precisely the focus of the last development phase of marketing" (Dukić, Martinović and Dukić, 2015:50).

That is why the beginning of the 21st century resulted in a new CRM business strategy, i.e., consumer relationship management. CRM includes a new marketing area. Its development started from the initial mass marketing through segmental marketing, niche marketing, and via

micro-marketing; an individual consumer is the one who plays a major role in marketing as an active participant in developing relationships (Dukić and Gale, 2015:584). Many authors define the meaning of the term consumer relationship management. Authors Kotler and Keller (2008:152) define CRM as " the process of managing detailed information about each consumer and the process of managing point of purchase with consumers to increase their loyalty."
Authors Muller and Srića (2005) view CRM "as a business strategy that includes the selection and management of customer relationships to increase their long-term value for the company. CRM software applications can provide the company with quality and efficient customer relationship management if it has leadership, strategy, and culture that is aimed at achieving maximum customer satisfaction."
Furthermore, the authors, Buttle and Maklan (2015:4), consider CRM to be the main business strategy that integrates internal processes, functions, and external networks to create and deliver value to target customers within a given time frame. It is based on high-quality customer-related data and is enabled by information technology. CRM can also be defined as a series of tools, techniques, and technologies in management and interaction with customers. It represents a strategy in which companies operate and communicate with clients to collect and use customer information to increase satisfaction and loyalty (Mihajlinović,2015:162). Customer relationship management is an app designed for businesses to organize any data they have about their customers. The primary purpose of CRM is to organize, track, and manage all customers, information, activities, and conversations. This helps sales, marketing, and customer support teams better understand their customers (Lepenskhin, 2016:88).

3. E-BUSINESS

In modern business, companies should focus on connecting their participants in business processes and their consumers. The Internet has enabled businesses to have greater interactivity, connectivity, flexibility, and cheaper and faster business. New trends and challenges bring new business and dynamic business that includes suppliers, customers, partners, and all other participants (Ružić, Biloš, Turkalj, 2014:15). E-commerce offers many benefits to sellers. With the help of technologies, the trader can differentiate groups or individual consumers, personalize the offer concerning their special needs and desires, and advertise directly to their consumers (Kotler, Wong, Saunders, and Armstrong, 2006:135). "Taking the risk of implementing such a complex system, which profoundly changes habits in connection, exchange, communication, and monitoring, has a significant impact on adapting to the global market and trends that often and quickly occur in the digital environment" (Ružić, Biloš, Turkalj, 2014:441). Since clients are in direct contact with merchants, e-marketing brings more frequent lower costs and greater efficiency of channel functions and logistics such as order processing, inventory management, delivery, and trade improvement (Kotler, Wong, Saunders and Armstrong, 2006:135).
Modern technology has transformed the way people behave, communicate, and shop. Big data has become a business reality and a reality for every consumer, who must adapt to the information age and develop new behavior patterns. Online consumers are easy to track, especially as smartphones have become the dominant medium for Internet access to consumers of all ages. They are increasingly using digital channels to research products or services, select and buy. By comparing traditional consumers who shop in physical stores, consumers take a different approach online regarding shopping and marketing reactions. They focus more on information and reject messages and ads that aim to sell. E-marketing is directed towards consumers who actively choose which pages to visit, what marketing information they will receive about what kind of products, and under what conditions.

In 2014, Perpetuum Mobile, in cooperation with Zrika (marketing and public relations agency), conducted a survey on a sample of 500 respondents related to Croatian network users. According to the survey results, most online shoppers in Croatia are on average between 23 and 35 years old, with monthly income ranging from 5,600 to 7,800 Croatian kunas. The price is the most important motive for online shopping, with 76% of respondents expecting lower prices on the Internet than those in the store. Likewise, the delivery cost is one of the key factors perceived concerning the purchase value of the purchased products. Consumers believe that delivery price should be proportional to the total value of the consumer basket (67%) respondents, and (22%). In terms of web store locations, 47% of respondents replied that it did not matter about domestic or foreign web stores. Also, 85% of respondents do not have a favorite web store, while Amazon, eBay, and DealeXtreme are considered the most desirable (Dadić, Plazibat, Petričević, 2018:349).

4. Research results

The survey was conducted during September and October 2020. The research was conducted online, using a Google form. Based on the defined objectives of the paper, three hypotheses were set:
H1: For safety *reasons, most consumers in the Republic of Croatia decide to pay on delivery or the pick up of goods.*
H2: The *most common reason for online shopping for consumers in the Republic of Croatia is to save time and money.*
H2: *Given the current situation caused by COVID-19, consumers in the Republic of Croatia are more likely to shop online.*
The questionnaire consisted of 10 questions, and the sample of respondents was 285. The sample included people of all ages. The study mostly included the female population with 88.7%, and the male population was 11.3%. The most respondents were 39.8% between the ages of 18 and 25, followed by 26 to 35 years, 29.9% and 22.5% between the ages of 36 and 50, and 3.90% of respondents were over 50 years of age.

Chart 1: Have you done your online shopping so far?
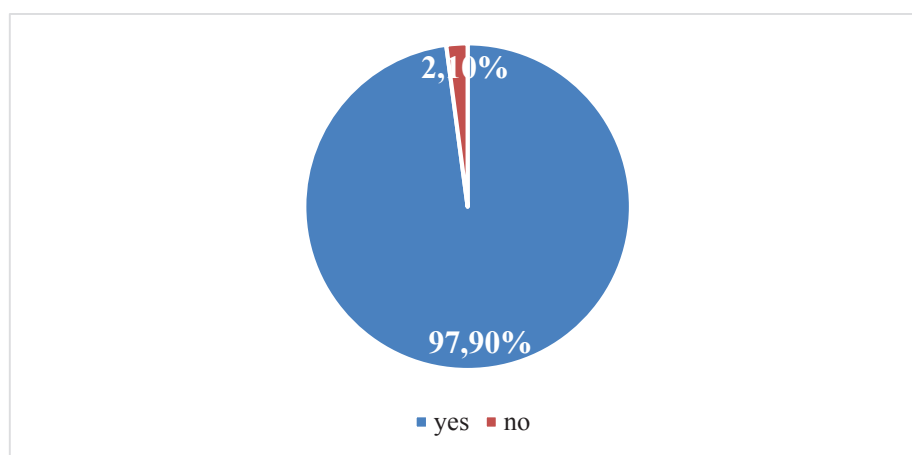
Source: Authors' creation

When asked if they had made online purchases so far, 97.9% answered yes. This question proved that online shopping is not a mystery to consumers and that most of them have already done it.

Chart 2: How often do you shop online?
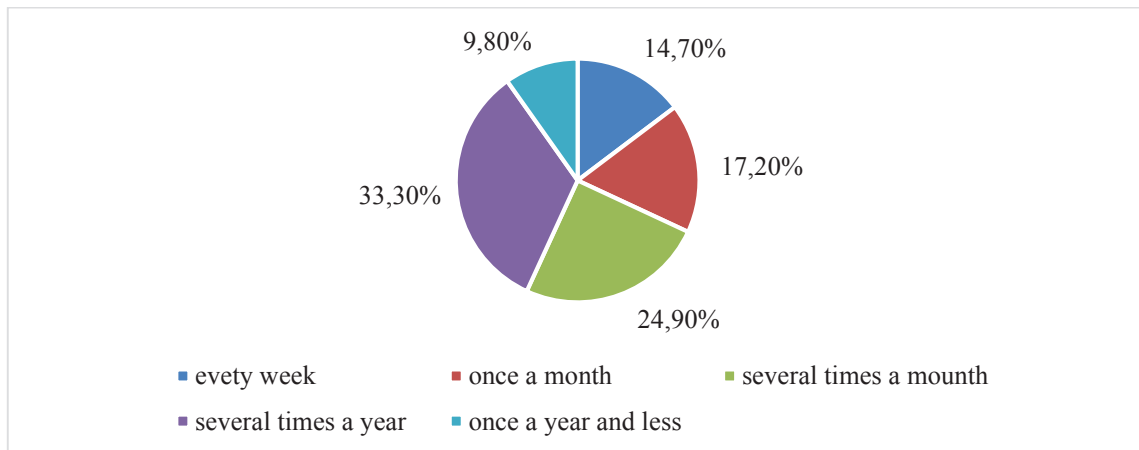
Source: Authors' creation

Looking at the frequency of online shopping, 33.3% buy several times a year, 24.9% do so several times a month, and the smallest number of respondents, 9.8%, said they buy once a year or less. This concludes that online shopping is an increasingly popular way of shopping, which will be even more on the rise in the future and over time, given the progress and modernization of technology and digitalization.

Chart 3: Which products do you buy most often online?
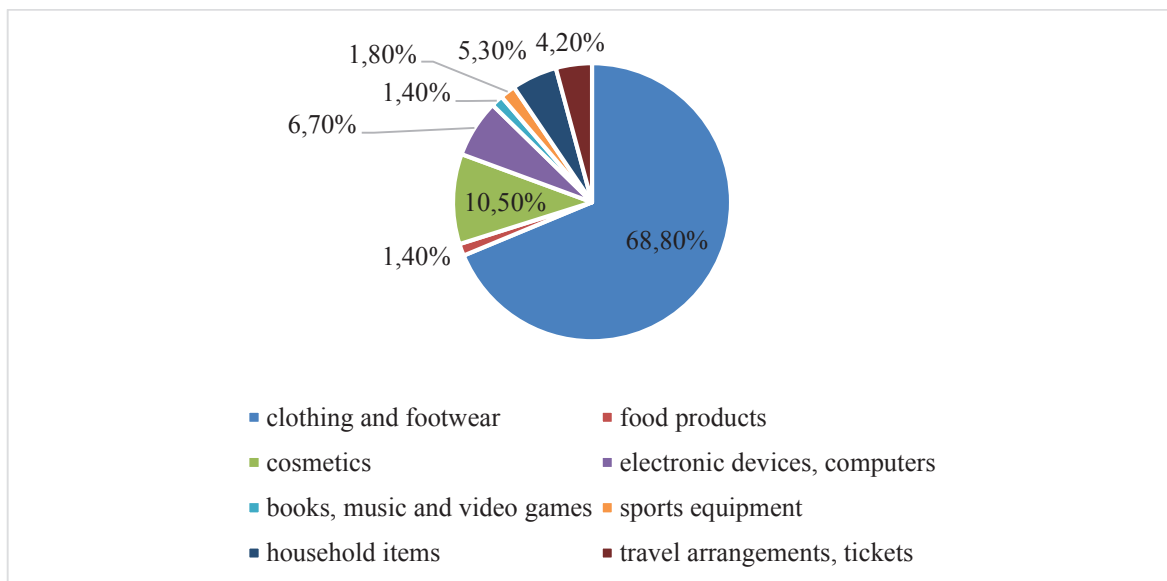
Source: Authors' creation

A total of 68.8% of respondents buy clothes and shoes online, followed by cosmetics 10.5%, and electronic devices and computers with 6.7%. Given the significantly higher percentage of the female population filling out the questionnaire, it is easy to conclude that the answers of clothing, footwear, and cosmetics will take first and second place by the percentage of most often purchased products.

Chart 4: Which payment methods do you use most often?
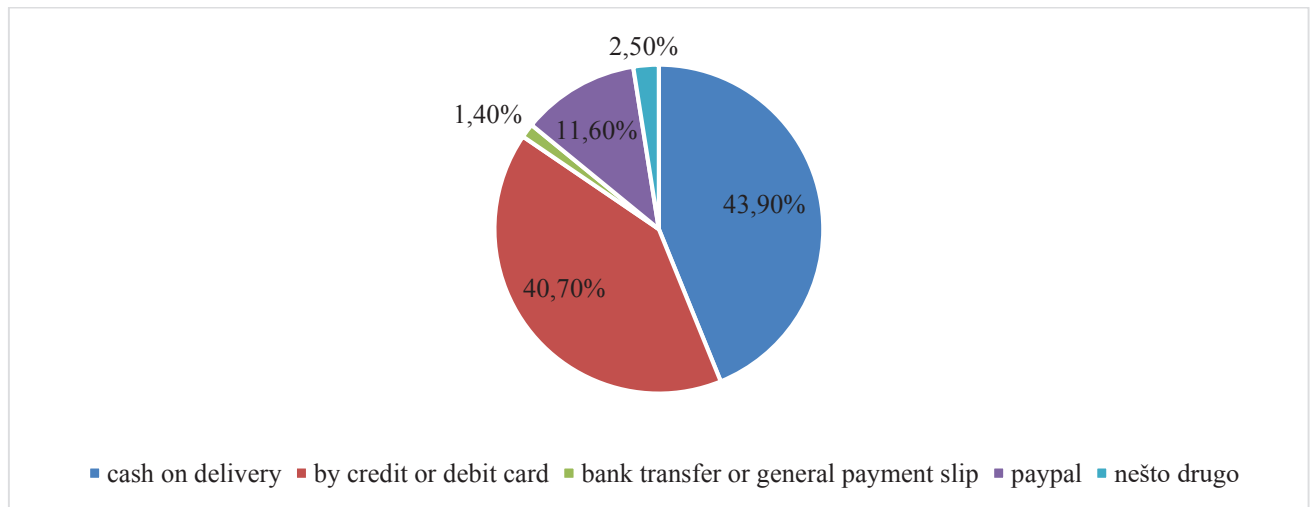
Source: Authors' creation

Most respondents opted to use payment on delivery or when picking up goods 43.9%, 40.7% of them using a credit or debit card, and 11.6% said they did so through PayPal accounts.

Chart 5: Why do you decide to shop online?
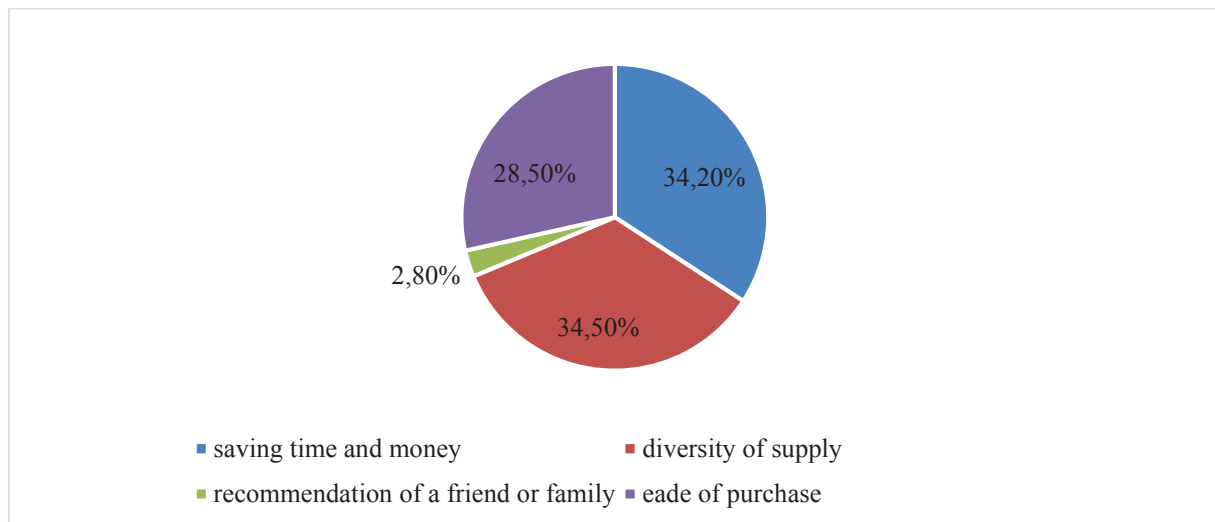
Source: Authors' creation

As a reason why they choose to buy online, 34.5% of respondents chose the variety of offers, 34.2% of respondents shop online to save time and money, then 28.5% cited ease of shopping as the reason, and the smallest of them with 2.8% shopping online due to recommendations from friends or family.

Chart 6: What is the highest risk of online shopping?
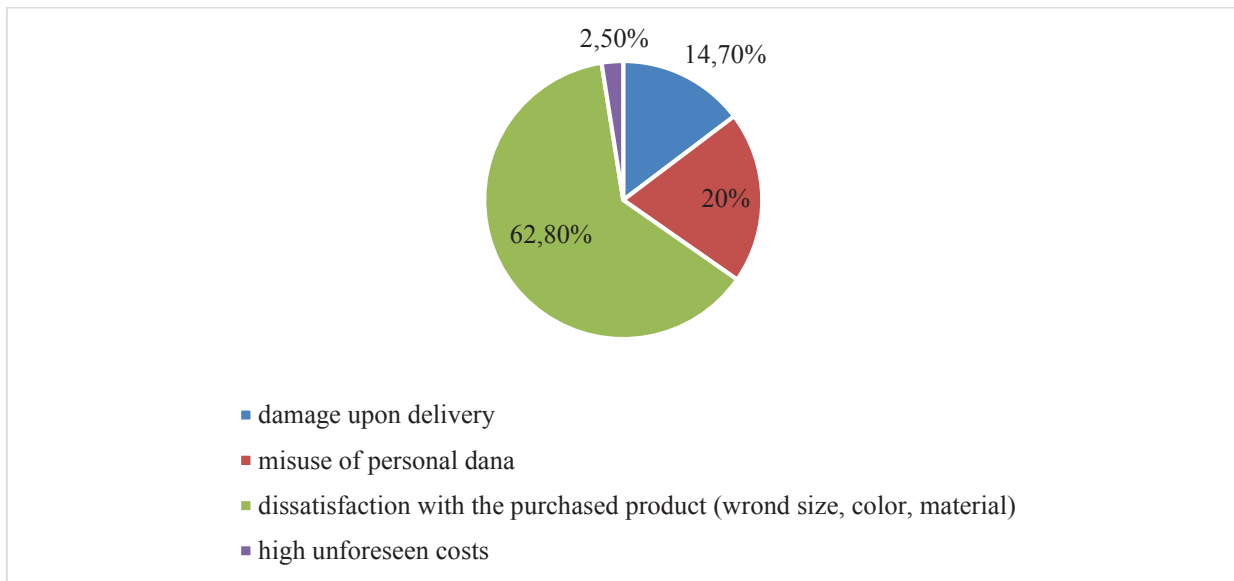
Source: Authors' creation

Majority of respondents, 62.8% of the highest risk of purchase online cited dissatisfaction with the purchased product, followed by misuse of personal data with 20% and damage to goods when delivering 14.7%, and the fewest cited high unforeseen costs 2.5% which are most common when shopping is done through foreign websites. According to the above, it can be concluded that the inability to tangible and try the goods is a characteristic of online shopping that can greatly affect dissatisfaction with the purchased product. This is one reason why consumers will still prefer the traditional way to shop where they can physically feel and try a particular product that interests them.

Chart 7: What can attract you to choose to shop through a specific online site?
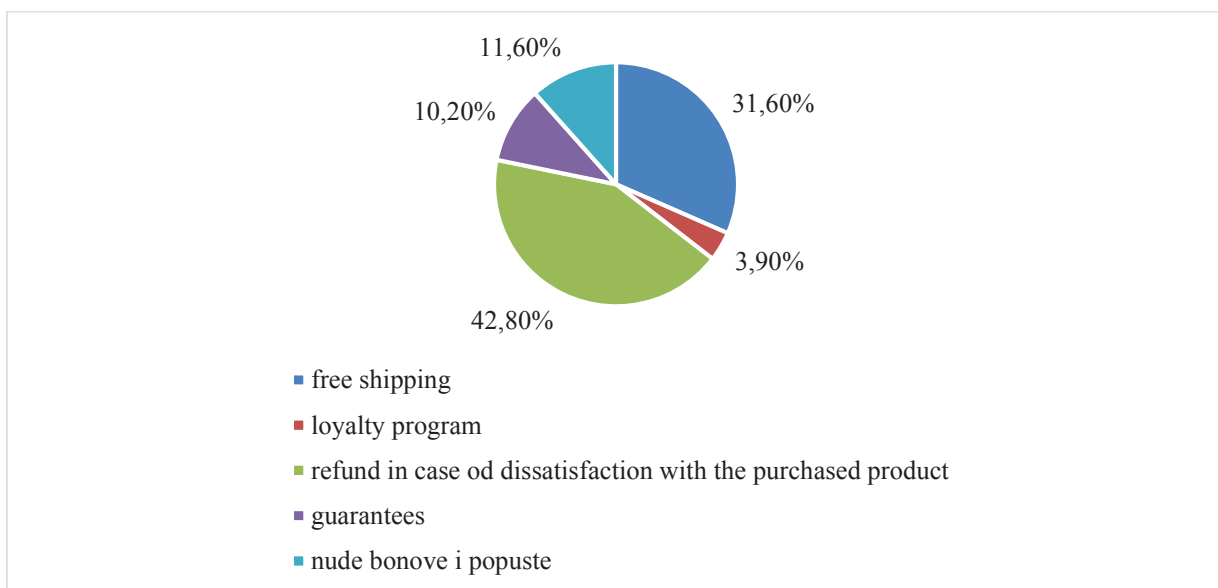
Source: Authors' creation

When asked what may attract them to choose to buy through a certain online site, most of them answered that the site has the possibility of return when dissatisfaction with the product 42.8%,

in second place is free shipping 31.6%, followed by benefits of vouchers and discounts 11.6%, that the site has certain guarantees indicated 10.2% of respondents and with 3.9% there is a loyalty program. The last question concerned the link between online shopping and the current situation, namely the COVID-19 pandemic. Since going to the store yourself poses a risk to our family and us, the results will show whether consumers are more likely to shop online to protect themselves in some way.

Chart 8: Due to the Covid-19 pandemic, online shopping poses less risk to my family and me than the traditional way to shop
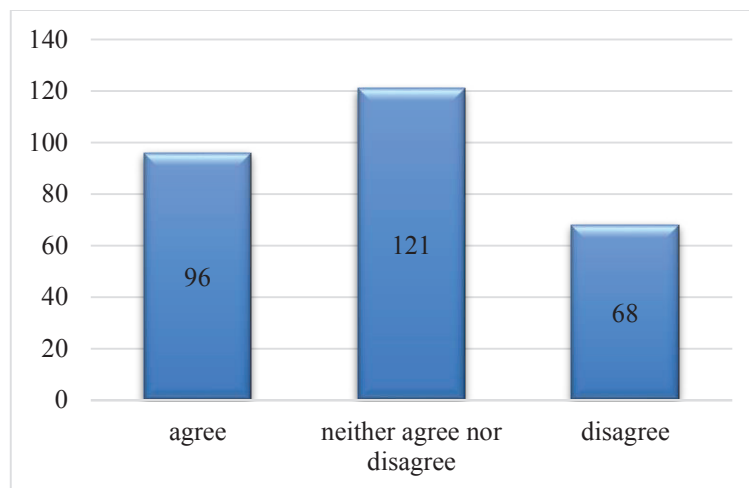
Source: Authors' creation

Given this claim, 96 respondents stated that they agreed, 121 respondents neither agreed nor disagreed, and 68 respondents stated that they disagreed with the above or did not consider that online shopping posed less risk than the traditional way of shopping.

Chart 9: Due to the Covid-19 pandemic, I have learned more about online shopping
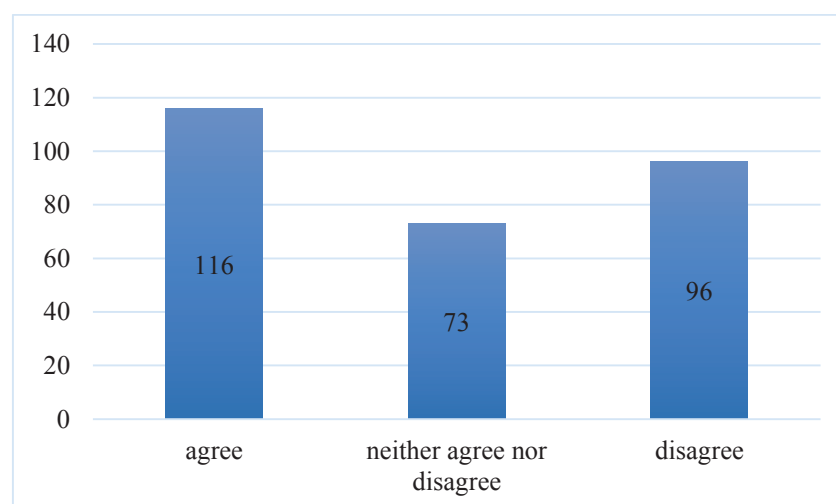
Source: Authors' creation

The majority of 116 respondents who say they are more inclined to shop online because of the COVID-19 pandemic agreed that they are more inclined to shop online because of the Covid-19 pandemic, 73 of them neither agree nor agree, and 96 respondents said they were not more inclined to shop online given the current situation.

Chart 10: I believe that the purchase process due to the Covid-19 pandemic has changed significantly
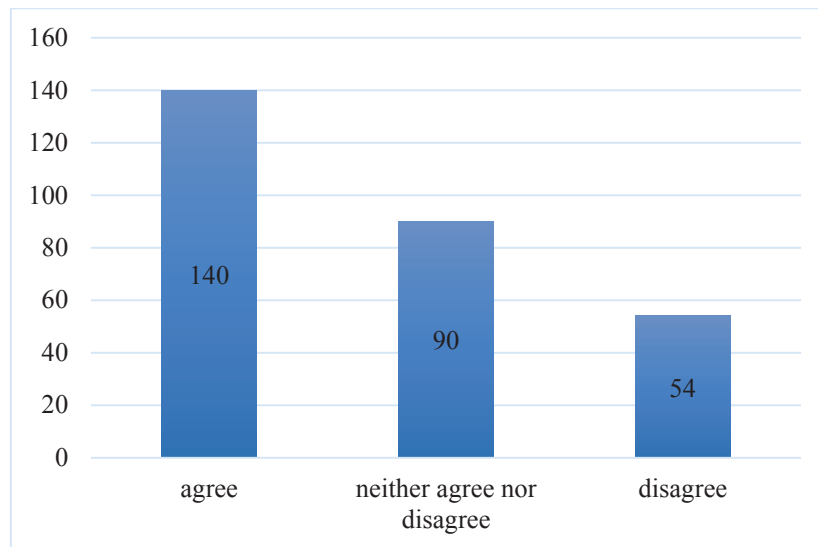
Source: Authors' creation

With the claim that they believe that the purchase process due to the Covid-19pandemic has changed significantly, 140 consumers agreed, 90 respondents neither agree nor agree, while 54 disagree with the stated claim.

4.1. Discussion

After the collected data and their analysis of the defined and set hypothesis, it is necessary to accept or reject.

The problem of online ethics continues to stem from consumer distrust and uncertainty. Misuse of personal data, identity theft, and financial fraud can lead to consumers not feeling safe and protected when shopping online. This is evidenced by the data collected on the most common methods of paying consumers when shopping online. According to these data, (43.9%) declared that it prefers to pay on delivery when picking up goods while (40.7%) paid by credit or debit card and (11.6%) selects PayPal. It can be concluded that the defined and set hypothesis has been accepted. However, with the advancement of technology and digitalization, consumer law, and various guarantees and free refund services in case of websites dissatisfaction, they can represent some certainty for the consumer in online shopping, thus increasing their trust. Hypothesis H1 is accepted.

Saving time and money is certainly one of the advantages of online shopping. It allows you to buy from your own home and via smartphone to avoid crowds and save time, especially nowadays of constant hecticness. By analyzing the collected data, the most common reason for online shopping for consumers in the Republic of Croatia with (34.5%) diversity of offers, while saving time and money ranked second with (34.2%), i.e., the difference between the above percentages is in one respondent. It can be concluded that these two reasons are critical to consumers. The variety of offers allows consumers to buy certain products that were not available to them before, and the reason is that online stores do not have to "refresh" their shelves and assortment but can have a large number of products in their warehouses that they offer to consumers. Given the above, the hypothesis is partially accepted. For online companies to save consumers even more time, certain innovations can be introduced, such as reducing the time needed to deliver the product to their home address, improving customer support in case of return of goods, simplifying overall purchases through the website, etc.

Hypothesis H2 is accepted.

With the advent of Covid-19, there was also a change in consumer behavior when shopping. Epidemiological measures, hand sanitizer, the mandatory wearing of masks, queues when going to the store, and keeping distance to reduce the risk to themselves and their family have encouraged consumers to opt for online shopping. In this way, consumers can make purchases of everything they need from their home, avoiding contact with other people. The data results can also confirm this according to which 119 respondents agreed that due to the current situation caused by Covid-19, they are more likely to shop online, and 73 respondents neither agree nor agree with the above claim, while 96 respondents disagree with the above. It can be concluded that the Covid-19 pandemic has changed consumers' shopping habits. Most of them have increased their online shopping, demand for certain products online has increased, and therefore, companies online should take advantage of the current situation through creative change and supply to attract consumers to opt for them.

Hypothesis H3 is accepted. This hypothesis can also be compared with previous studies in which the authors also proved that during the Covid-19 pandemic they are more inclined to buy online. It can be said that customers in the Republic of Croatia, as in other countries, turned more to online shopping than at the time when the pandemic was not there.

By comparing the research presented so far, it can be concluded that most consumers are familiar with online shopping and have done the same. Furthermore, the products that are most purchased are certainly clothing and footwear, and electronic devices. Although in previous studies the price has been highlighted as the main reason for online shopping, the diversity of the offer that was conducted by the survey is the number one reason for online shopping can also be cited as an important factor. Equally, by comparing research, one can conclude that certain ethical problems rule the Internet world, which consumers are well aware of. Security, data protection, and trust are important factors that companies should work on to ensure a greater trust level for consumers to opt into online shopping. Looking at the Covid-19 pandemic, it can be seen that there is certainly an increase in online shopping. However, the current topic will surely be explored in the coming years when more precise and accurate conclusions can be drawn. Recommendations for further research are to conduct a time-lapse study with a retesting of the H2 and H3 hypotheses. It would be important to see if the share of customers using online shopping will increase over time, whether the number of customers who are inclined to shop online even after the end of the pandemic will remain the same or change, and whether over time customers will start paying more with credit cards rather than on delivery. There were few shortcomings in the research methodology. Firstly, there was a short time to collect data, and secondly, the survey was conducted online, mostly through social networks, while physically due to the pandemic, it was not possible to conduct it physically. Such a restriction reduced the number of respondents, which would otherwise have been certainly higher.

5. Conclusion

Technology and digitalization play a significant role in managing consumer relations and doing business today. More and more companies are "moving" their business to an electronic platform, seeing the benefits of such a way of selling their products and services. Consumers on the Internet are spending more and more time researching certain information about the products and services they are interested in. The increase in online shopping is the reason for writing this research paper whose main subject was to analyze consumer behavior during online shopping in the Republic of Croatia through research and analyze how the Covid-19 pandemic affected consumers and their shopping habits.

The major conclusion of the research shows that most consumers in Croatia used online shopping, several times a year during the pandemic. The collected data shows that there is still a certain level of uncertainty and mistrust when shopping online, which is why the consumers in Croatia still prefer the method of payment on delivery or when picking up goods. Furthermore, the main reason for online shopping for consumers is the variety of offers that allow them to buy products or services that were not previously available. Based on the research, the connection between online shopping and the current situation of the Covid-19 pandemic was also examined. With the advent of Covid-19, consumption habits have changed significantly, i.e., research data shows that consumers are more prone to online shopping to avoid possible crowds and contacts with other people and thereby reduce the risk to themselves and their family.

The Covid-19 pandemic has contributed to the rise of online shopping both worldwide and in Croatia. For many consumers, when shopping, the first thing they will do is inform themselves online about a particular product or service that helps them make their purchasing decisions. Online shopping is becoming increasingly popular, and it is thought that it will only grow in the future. With the development of technology, consumer protection, and security, online users' trust to opt for this way of shopping increases, bringing certain advantages such as saving time and money.

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SOCIODEMOGRAPHIC PATTERNS OF HOUSEHOLD CONSUMPTION IN CROATIA: A DESCRIPTIVE REVIEW

ABSTRACT

Demographic changes in developed countries affect economic processes and impact contemporary economic paradigm on virtually all levels. Interest in research dealing with the relationship between consumption and demographic change has increased in the last two decades. Significant body of literature states the clear and robust impact of demographic change on volume and structure of consumption. However, there is a lack of empirical evidence from micro-perspective, especially for Croatia. The aim of this paper is to study the main sociodemographic characteristics that shape the consumption patterns in Croatia. Since no comparable research on this topic exists for Croatia, we conclude our research from a descriptive standpoint. We used microdata from Croatian Household Budget Survey. The datasets we used provide rich information on consumption from household level. To analyze the correlation of main socioeconomic variables with consumption volume we employed methodology used in comparable research: studying single households. Also, we grouped households by age, size, income, composition and other variables of interest to study the differences in consumption. The consumption was measured in monetary value on annual level to mitigate seasonality. Our descriptive findings provide first insights into identifying key sociodemographic patterns of household consumption in Croatia. Our results indicate that older households have different consumption patterns than young households. Also, results lead us to assume that regional differences in Croatia also exist, but location variables were not available in the dataset so we could not support it with clear empirical results. Datasets we used limited our results in terms of analyzing a broader set of sociodemographic variables since most of the dataset is oriented towards household level.

Keywords: *demographic change, ageing, household consumption, demography.*

1. Introduction

Demographic changes affect contemporary economies through different channels and impact has been significant and persistent across time and space. Population ageing is one of the most widely recognized population changes affecting economies of developed countries. However, population ageing is not exclusive to developed countries since ever more developing countries are clearly witnessing transformation of their demographic indicators of age structure.

Croatia has been witnessing negative natural change since 1990. and demographic indicators clearly speak about severe levels of demographic ageing (Akrap, 2019; Wertheimer-Baletić, 2004). Moreover, emigration wave since Croatian accession to European Union has catalysed long-term downward demographic trends. Population projections towards 2051. reflect those processes through even higher levels of depopulation and population ageing in Croatia (Akrap, 2019; Akrap & Ivanda, 2019).

Economic theory expects that individual characteristics affect consumption volume and structure. However, most of the literature views consumption as an aggregate phenomenon as one of the main components of GDP or through other aggregate indicators of consumption. Smaller body of literature views consumption as a result of specific behavior and characteristics of individuals, which we call micro-level approach. However, this is to be expected, given that most research on this topic comes from the field of macroeconomics.

In light of the mentioned demographic change, we expect that demographic change affects consumption volume in Croatia. Therefore, the aim of this paper is to investigate whether specific individual or household characteristics correlate with consumption volume in Croatia. We limit the characteristics of interest to basic sociodemographic variables since this paper is one of the first analyses of this kind in Croatia. Also, we limit the methods used to descriptive statistics since basic correlates and descriptive findings are still unknown.

Although we assume that demographic change significantly affects consumption patterns in Croatia, we acknowledge that relationship is rather complex since we witnessed, in general, significant economic growth and increase in living standard during 20th and 21st century. Rise in GDP adds complexity to studying the link between sociodemographic characteristics of population and consumption by increasing available income for all age groups. Broadening social security systems and financial transfers in decades after World War II allowed even the most disadvantaged social groups in developed countries the unprecedented rise is living standard. Also, new financial services for older age population and available financing in recent period made relationship even more complex. The emerging "silver economy" and increased focus of markets toward older population brings even more complexity and challenges in studying this topic. Deciphering the sole impact of demographic change onto consumption is a rather challenging task. Therefore, we focused on correlation and descriptive findings to begin with, since comparable literature for Croatia is rather scarce.

However, we do not assume that potential impact of demographic change on consumption is not temporary. On the contrary, we believe that cohorts behave differently and that today's retirees spend differently than their predecessors did, and that the same will continue in the future.

Increase in healthy life expectancy paired with digitalization and other contemporary processes can significantly change patterns of behavior not only in older age groups but also throughout the life cycle. In a world of ever-changing determinants, we need further research on the topic of economic aspects of aging. In addition to microdata surveys like Household Budget Survey we used, longitudinal data and especially digital data could provide new insights into this emerging field of research.

2. Literature review

In recent years, demographic determinants of economic growth have been gaining more research interest. Prior to mentioned rise in interest, major body of literature noted population growth as the single most important demographic determinant in economic literature dealing

with economic growth. However, relatively newer economic literature shifted its primary focus from population growth to population structure, most notably age structure.

Demographic transition phase and population age structure proved to be a key demographic factor of economic growth, although with a temporary effect (Bloom & Williamson, 1998). Population ageing is a result of several changes in population processes. However, increase in life expectancy and especially sharp decline in child mortality proved to be the key to population ageing in modern societies (Coale, 1984; Weeks, 2015), although some historical evidence shows that decline in child mortality did not trigger decline in fertility and some researchers disagree on the impact of child mortality on demographic transition (Galor, 2012; Murphy, 2015). Whatever the sequence of events in demographic processes truly occurred, the results of demographic transition are unprecedented population growth and increase in longevity.

Economic theory expects that individuals smooth their spending (and savings) across life-cycle. It is expected that longevity and improvements in healthy life expectancy increase working age thus limiting the effect on savings. However, literature shows that longevity and ageing population increased savings rates at all ages (Bloom et al., 2003, 2007).

Literature on economic aspects of demographic ageing gives mixed results. For instance, some cross-section studies for Asian countries found that ageing is positively correlated with aggregate consumption, albeit without an uniform connection (Estrada et al., 2012; Lee & Mason, 2011). Also some studies on particular type of consumption, like energy consumption, showed a clear positive correlation with age, both on individual and aggregate level (Estiri & Zagheni, 2019; Raty & Carlsson-Kanyama, 2009).

Although this field of research gained increased interest in recent years, analyzing aggregate level consumption dominated the literature with the clear lack in micro-level approach. However, the gap is narrowing in recent years with more sources being produced on individual/household level data and longitudinal data.

3. Data and descriptive findings

We used micro-level data from Croatian Household Budget Survey (HBS) for 2017. which is the last available dataset. Earlier Surveys are not fully comparable since interviewing method has changed and expenditure classification has changed.

Household Budget Survey is a national-level survey focused on household consumption expenditures. Household Budget Survey has been used in EU Member States since 1960s and various attempts have been made to harmonize Survey among all EU Member States. However, some differences between countries remain. The main applicable goal of Household Budget Survey is calculation of Consumer Price Index (Eurostat, 2021). Household Budget Survey consists of basic sociodemographic variables, basic dwelling characteristics and array of different expenditure variables. Sociodemographic variables are given on an individual level, and the rest of the variables are given on a household level.

The Croatian variant of Household Budget Survey is conducted every three years and it is based on Eurostat guidelines and methodology for national Budget Surveys in European Union. Unlike Labour Force Survey and some other annual surveys, HBS does not use panel samples. Therefore, this dataset does not need addressing that issue.

In HBS, demographic and socioeconomic variables are given for individuals and expenditures are given for household level. We should note that expenditures are given in monetary value (Croatian national value - kuna). Also, we used annual levels of consumption and income to mitigate seasonality. Other than HBS, there are several data sources that include demographic, socioeconomic and consumption variables. Those are EU-SILC and Croatian National Bank's Household Finance and Consumption Survey.

This paper adds contribution in evaluating HBS strengths and weaknesses in studying individual patterns of consumption in Croatia which we discuss later.

We analyzed expenditures on highest grouping presented in Household Budget Survey which consists of 12 different groups of goods and services. We acknowledge that these groups are broad and that lower-level grouping could also show some interesting and significant findings. Yet, since no comparable research exist for Croatia, we focused on highest grouping.

HBS dataset provided information for 1377 households and 3751 individuals. Of those, 308 households were single households which were used for analysis on age and gender variables which we discuss later.

Figure 1: Expenditures breakdown for mean household
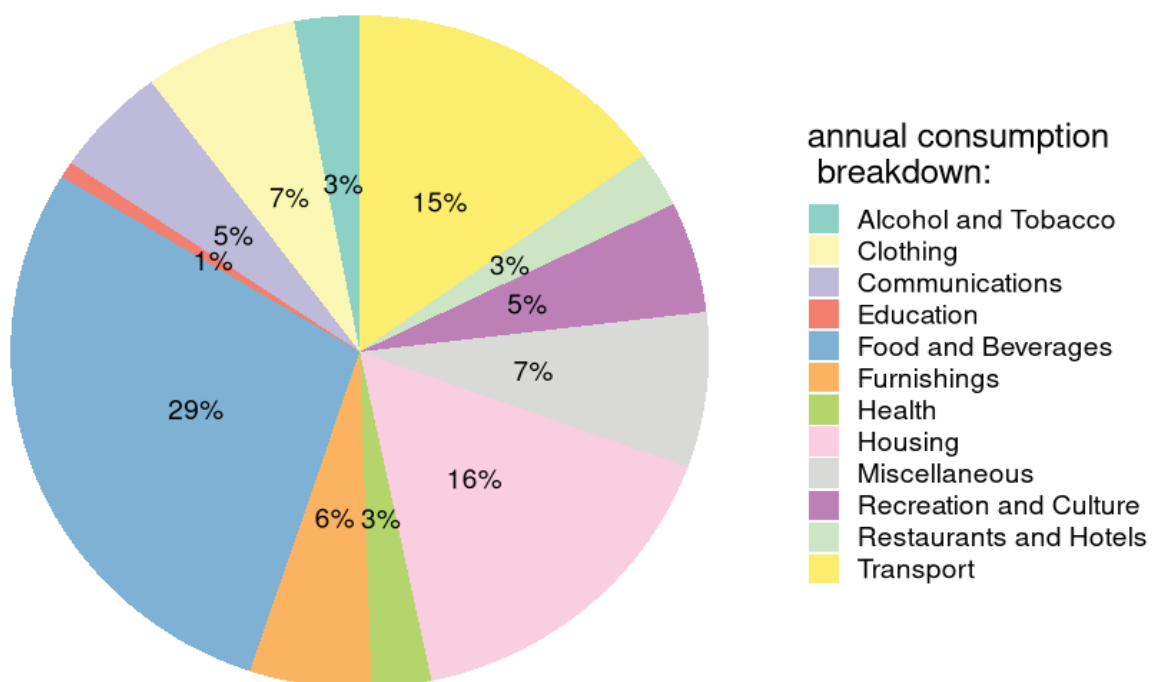
Source: HBS 2017, own calculations

As shown in Figure 1., average household spends most on category *food and non-alcoholic beverages* (29%). Also, high share of expenditure goes for *housing* (16%) which includes actual rent and energy costs. However, in *housing* and total expenditures we excluded imputed rent. Imputed rent is not the actual expenditure or income. It is the hypothetical amount of rent that apartment owners would have to pay in case they rent the same apartment. It is a concept introduced to better comparison between households in rented apartments and those owning the apartment *(Nestić, 2002)*. However, imputed rent is a debatable concept and scholars are not unanimous on using it in their analyses. In the rest of this paper, we excluded imputed rent from both consumption and income figures. Mean household spends 15% of its annual consumption on *transport.* Other categories fall in the range 1% to 7%. We should note that group *miscellaneous* includes broad group of goods and services ranging from personal care to child care services and various insurances. Thus, it results in relatively high share of total consumption of 7%.

Due to rounding on lower level consumption categories, sums may not add up to 100, and some values might slightly vary from other sources but not significantly.

Following chart (Figure 2.) shows summary statistics for each category of consumption, as grouped in original HBS dataset.

Figure 2: Annual expenditures by category (household level)
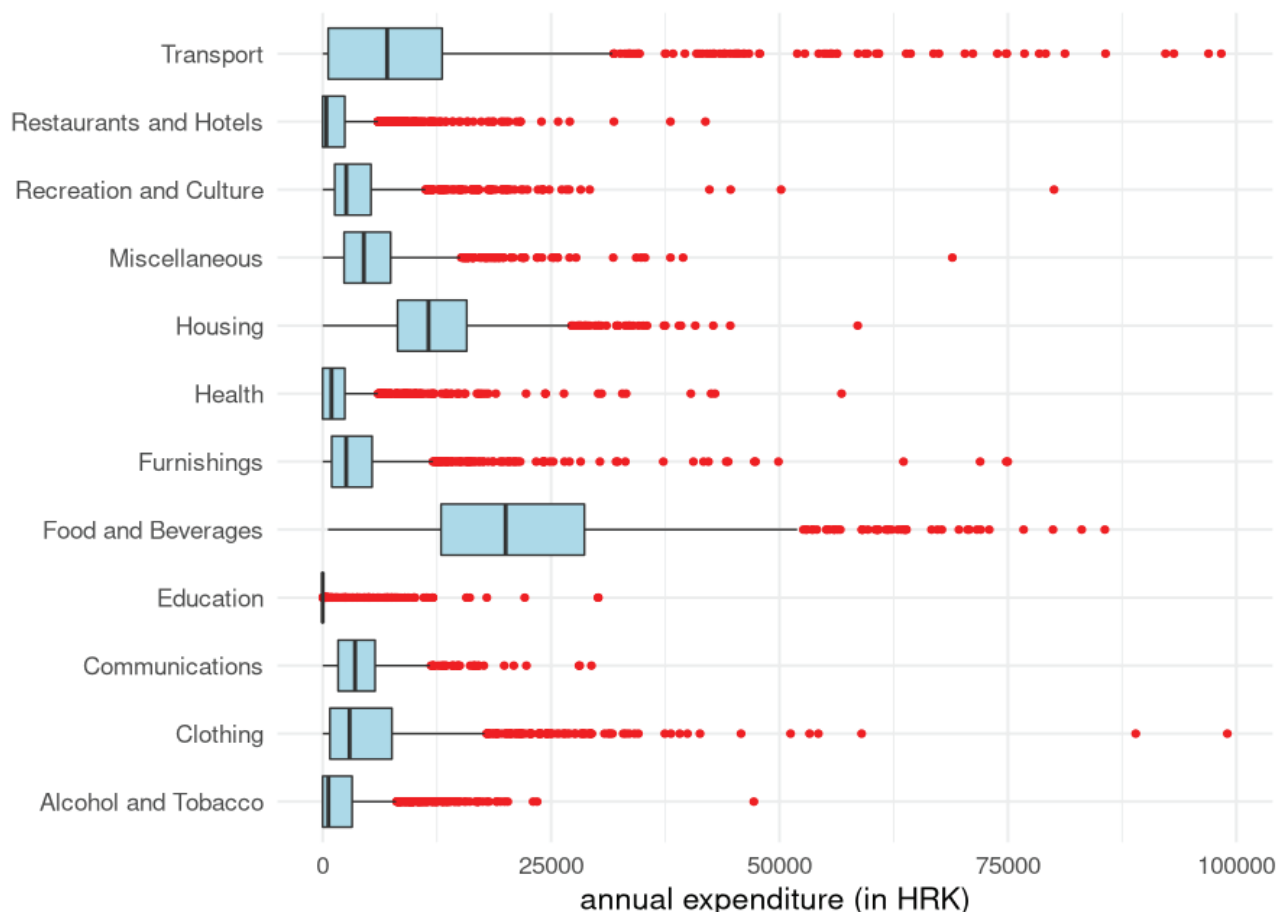
Note: Outliers are shown in red. We excluded outliers higher than 100 000 hrk.
Source: HBS 2017, own calculations

Categories food and beverages, housing and transport make around 60% of all expenditures. However, there is a relatively high range (deviance) in consumption patterns as shown in Figure 2. We expected high deviance since we used whole population (households) in our analysis, thus not dealing with heterogeneity of households according to income and other sociodemographic variables. It is expected that some categories are highly dependent on household size (e.g. Food and Beverages or Clothing) while some categories are less dependent on household size and more dependent on household composition (e.g. Health or Education). Unfortunately, deeper analysis on consumption structure goes beyond the scope of this paper. Although it is common to use *log* transformation of monetary values in more advanced analyses, we left the data in monetary value to retain the information on actual expenditure since information on expenditure patterns are scarcely present in Croatian literature and we focused on descriptive analysis.

Income is a key determinant of consumption. Economic theory notes strong positive correlation between income and consumption. Also, it is known that individuals with lower income spend high share of their income and save less. Climbing up the income ladder, the share of consumption decreases and savings increase. However, the relationship is more complex than that given the mentioned rise in personal debt, social security systems and continuous increase in GDP in many developed countries.

In the following two figures, we try to illustrate mentioned hypotheses from our dataset. We used household level data on annual level in national level currency or *log10* transformation of data on income for Figure 4. Although we did not use dedicated statistical modeling, we fitted linear regression line to visualize the relationship.

Figure 3: Income and consumption
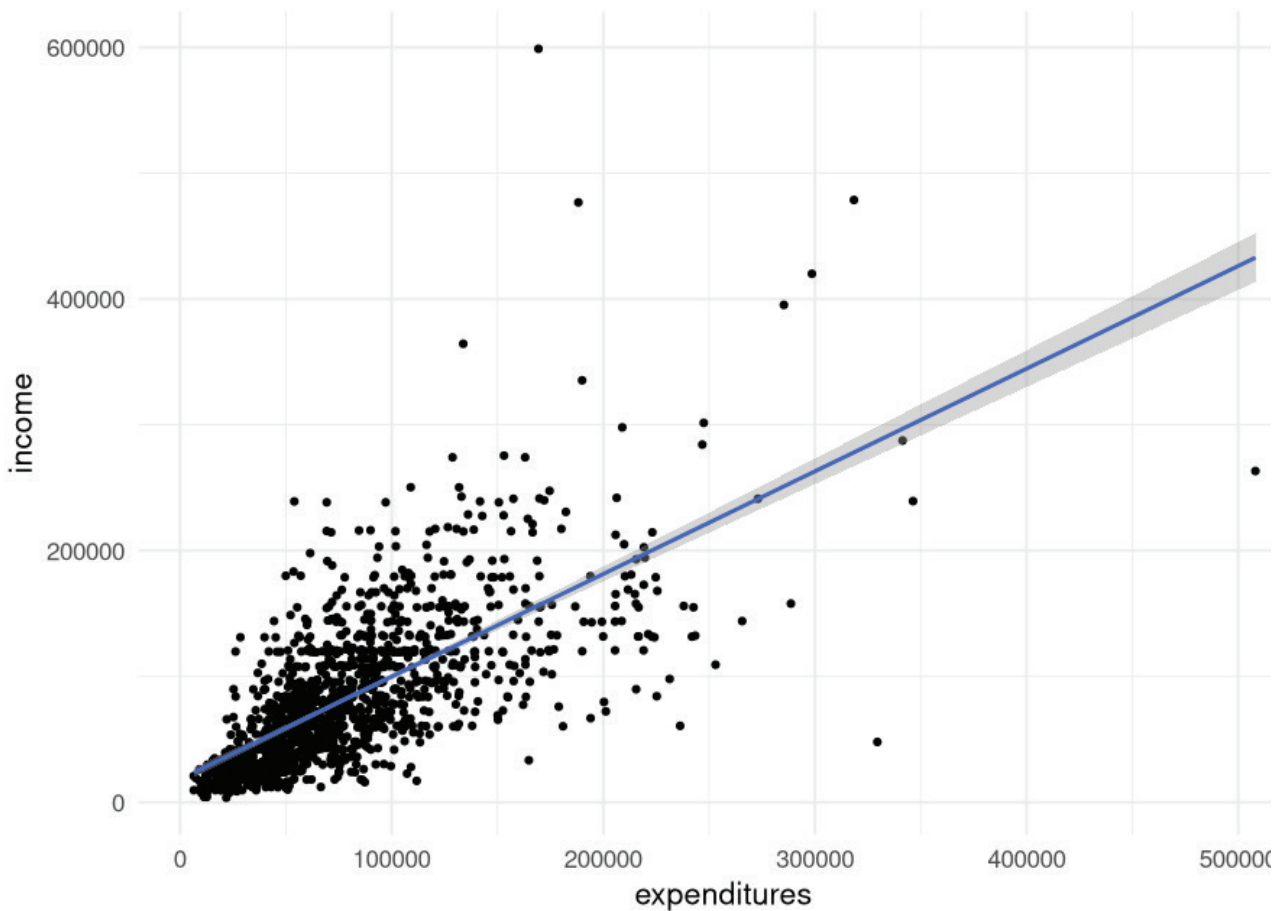
Source: HBS 2017, own calculations

As expected, there is a strong positive correlation between income and expenditures on a household level (Figure 3.). We also fitted simple linear regression trend line (standard error shown as grey shading) to illustrate positive link between income and expenditure on a household level. Furthermore, we tested for linear correlation between household income and household consumption. Pearson's correlation test resulted with statisticaly significant ($p < 0.05$) strong positive correlation (coefficient 0.69 with 95% confidence interval of 0.67 to 0.72) thus supporting our initial descriptive results shown in Figure 3.

Next, we calculated the consumption to income ratio on household level. When the ratio equals 1, consumption is equal to income. The summary statistics show relatively high levels of consumption to income ratio.

Table 1: Consumption to income ratio

min.	q1	median	mean	q3	max.
0,22	0,74	0.98	1,17	1,37	6,88

Source: HBS 2017, own calculations

However, when we further compared (Figure 4.) consumption to income ratio to income, we confirmed the negative correlation between income and consumption to income ratio (otherwise we could say positive correlation between income and savings). In other words, households which earned less, had significantly higher consumption relative to their income than

households which earned more. This result is expected, since it is known that higher income is positively correlated with savings and investment. We used *log10* transformation of income data to better illustrate this pattern due to the skewness of the original data, a common approach in similar studies.

Figure 4: Consumption to income ratio vs. income
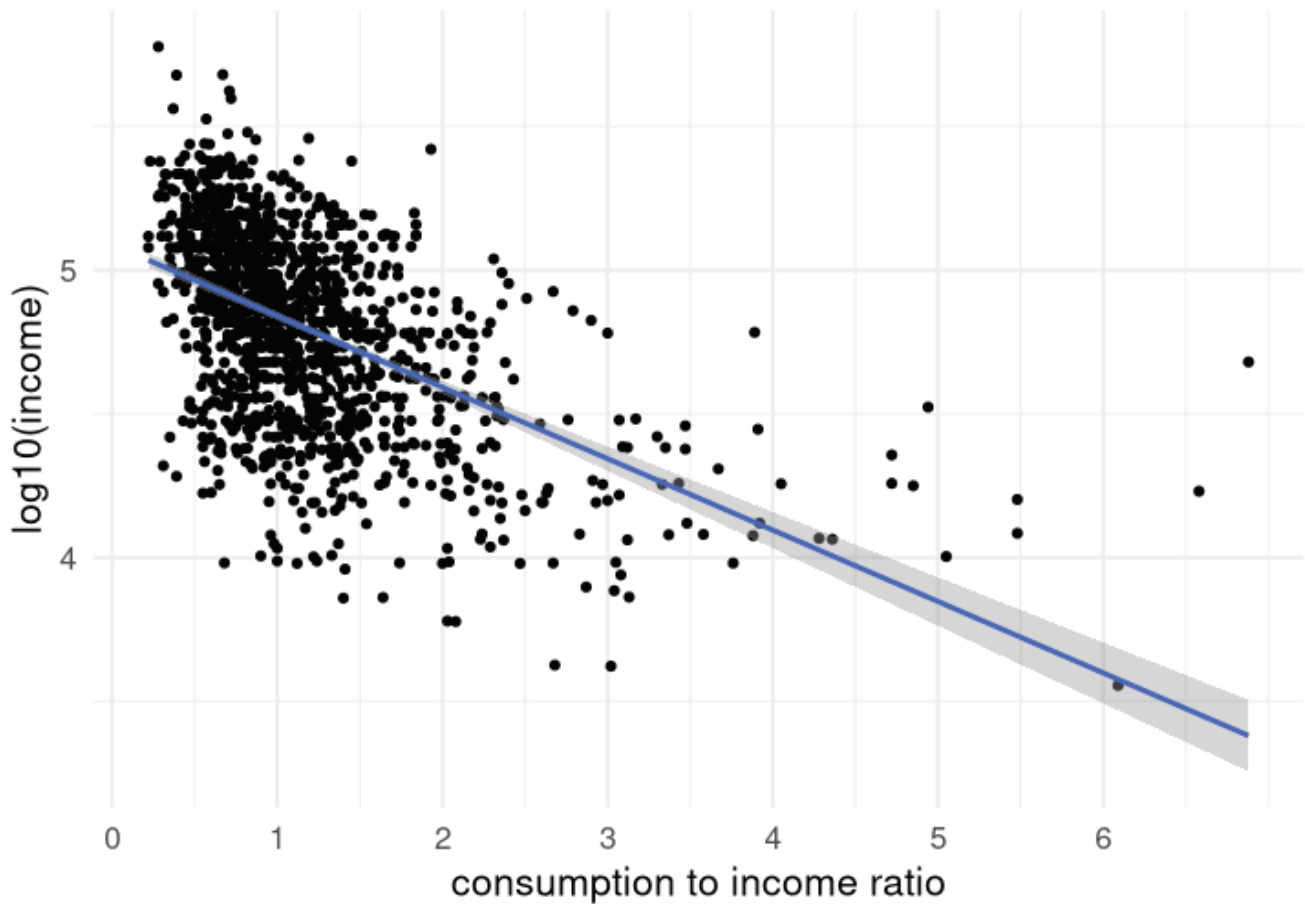
Source: HBS 2017, own calculations

Furthermore, our analysis showed relatively high levels of expenditure to income ratio, with a median of 0.98. Note that the ratio of 1 indicates that the expenditures (consumption) is the same as income. This indicates that almost half of households in Croatia simply spend majority of their earnings or more than they earn. However, we should note the potential effect of undeclared income, transfers, debt or other reasons and their combination whose addition would give more insights to this finding. This finding goes in line with findings based on Croatian National Bank's Household Finance and Consumption Survey which indicate severe inequality in financial assets among households and no or low savings in majority of households (Kunovac, 2020). Multigenerational financial transfers play an important role whether by increasing income of older population or acting as a "consumption" in case older population transfers financial means to others. This is not reflected in our data source, but research proved that multigenerational transfers in Croatia are mostly financial (Strmota & Ivanda, 2015). Also, the income was stated by the respondents themselves, so it is possible that this information was underestimated.

As mentioned, the existing literature sets age as a significant variable in the analysis of consumption at the aggregate level. In the micro-level approach, a data-related problem arises

- consumption and income are given at the household level, and sociodemographic variables are given at the individual level.

In such analyzes, the rule of thumb is to analyze single households (Raty & Carlsson-Kanyama, 2009). We also took that approach. However, our sample of 1377 households had only 308 single households. Given that in demographic analyzes we distinguish the population at least by age and sex, our sample is further fragmented.

This is precisely the biggest limitation of our research - too small a sample of single households from which smaller subsample based on other sociodemographic variables cannot be created. Our recommendation for further research on this topic is certainly to expand the sample of single households over which the correlates and the relationship between sociodemographic variables and micro-level consumption could be investigated in more detail.

However, we were able to identify the framework in which age affects consumption volume and structure as shown in Figure 5. Note that the age groups 30-34 and 35-39 have only 8 observations, while the older age groups have a significantly larger sample. This is expected because the prevalence of single households is significantly higher in the elderly population.

Figure 5: Age groups and consumption (single households)
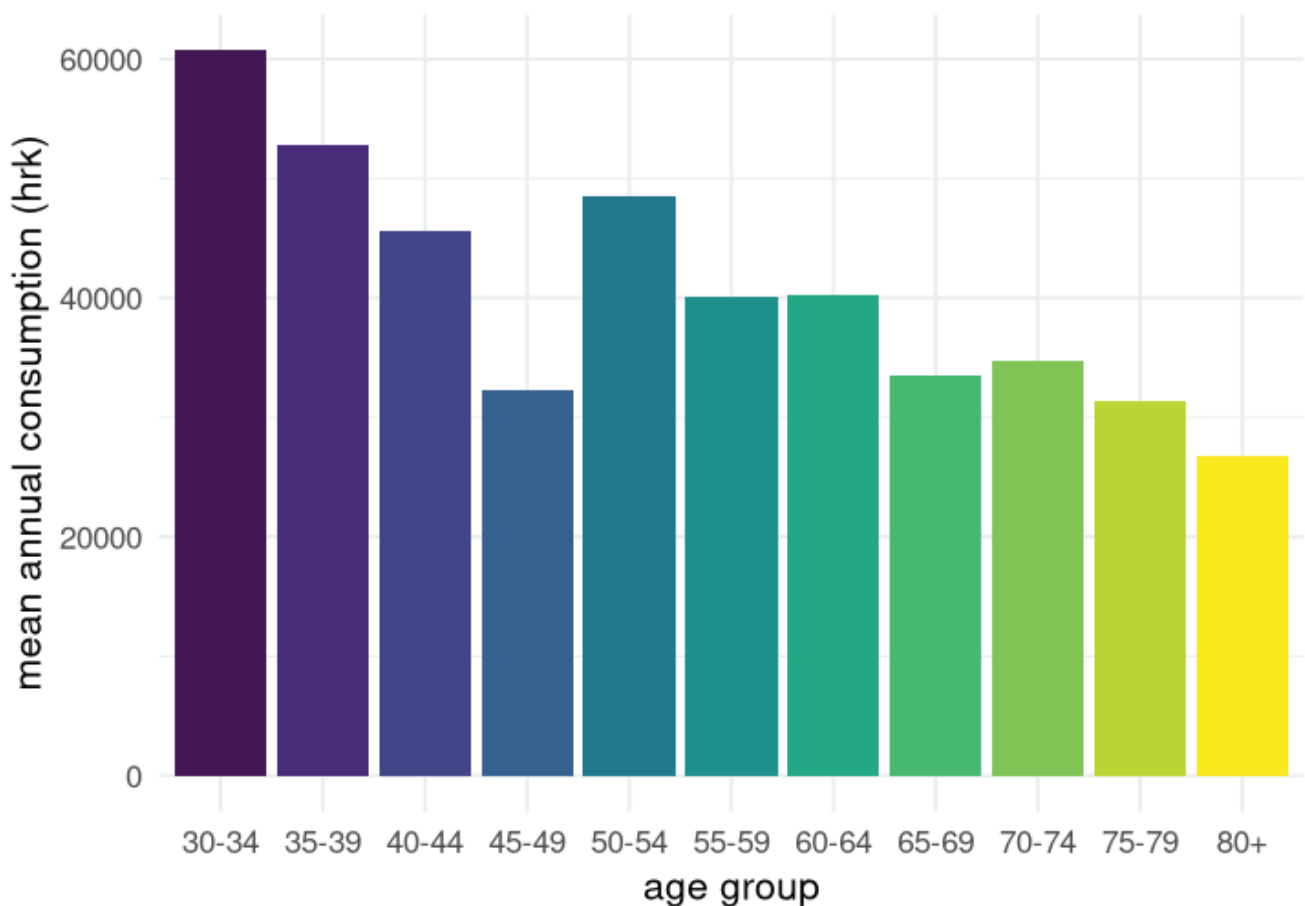
Source: HBS 2017, own calculation

As literature shows, age is negatively correlated with consumption, as shown in Figure 5. Although, one can argue that age relieves financial burdens such as debt used for higher education or real estate, the current trends in many European countries show worrying trends in pension adequacy (European Commission, 2018). Pension adequacy is specifically

challenging in Croatia (Nestić & Tomić, 2012), which we argue is the single most important reason for low consumption in older age groups. Also, our findings on correlation between income and consumption go in line with this statement.

Furthermore, analysis of single households showed that men spend around 17% more than woman. However, this result should be taken with caution since single households are strongly concentrated in age group 65+ which has significantly higher share of woman. Therefore, this result is strongly affected by age and requires further research.

Next, we categorized households on the basis whether they include anyone older than 65 (has_old variable) or anyone younger than 65 (has_children variable). The categorizations were independent of each other. We acknowledge high share of multigenerational households in Croatia (Strmota & Ivanda, 2015). Thus, we selected only households sized 2 to 5 in order to lower the number of multigenerational households, although they are also present in this analysis. Following figure illustrates the summary statistics on consumption per household member.

Figure 6: Consumption per house member – households with children or older individuals
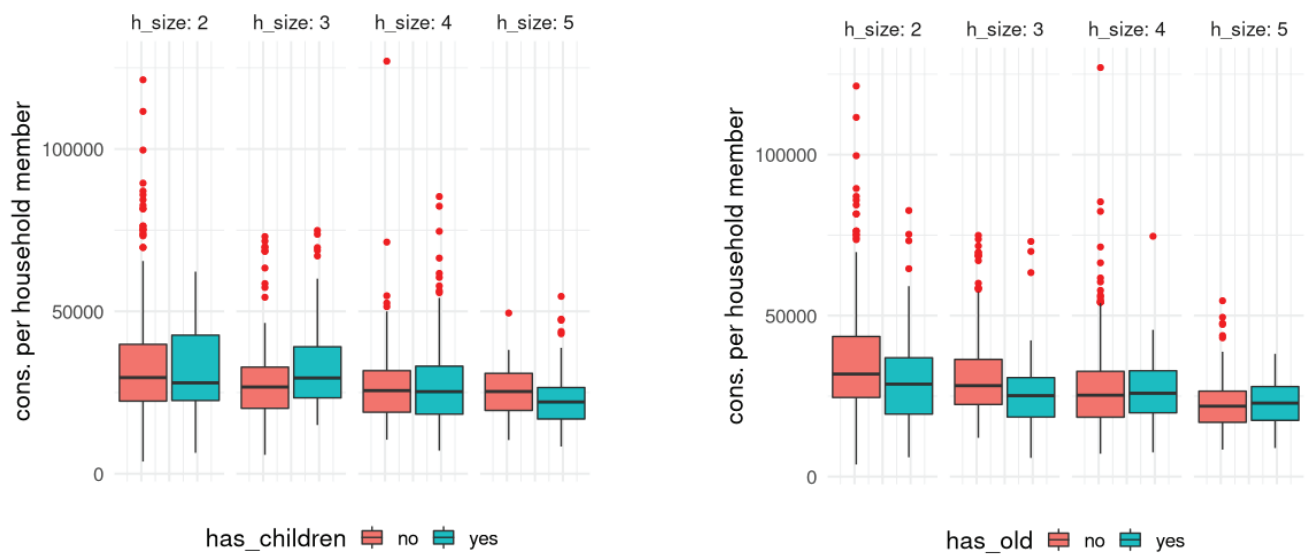
Source: HBS 2017, own calculation

Table 2: Mean consumption and income – households by children and older members

Household type	Consumption (household)	Consumption per member	Income per member
Has children: YES	112 372	26 844	27 646
Has children: NO	64 287	32 825	33 207
Has old: YES	62 714	28 982	30 201
Has old: NO	85 723	32 113	32 258

Source: HBS 2017, own calculation

Mean consumption is highest in households with children aged 18 or younger and lowest in households with member(s) aged 65 or more. However, consumption per household member is

different: households without children and households without old members note highest levels of consumption. Although raising a child presents a financial burden, we assume that young children spend less than adults do, thus resulting in the lowest consumption per member in our analysis. The same counts with income. These results go in line with before mentioned results that showed highest consumption in age groups 30-45 when analyzing single households.

These results can be interpreted in line with existing research in Croatia dealing with economic activity since highest economic activity in Croatia is within the same age group (Akrap et al., 2018). Note that all categories of households have slightly higher income per member than consumption per member.
However, these descriptive findings need further support in terms of more robust statistical modeling.

We identified several limitations of using this data source for this topic. First, Croatian Household Budget Survey does not provide geographical information, so we could not differentiate lower-level administrative regions to identify possible regional specifics (e.g. continental Croatia should have higher housing expenditures due to longer season of space heating). Second, since Croatian HBS includes variables on expenditure and income, the addition of other financial transfers and debt would be of great value. Third, Croatian HBS does not have enough observations of single households to study the effect of sociodemographic variables. This is not a limitation of dataset *per se*, since the dataset represents population of Croatia but rather a limitation of using it for such studies. We can only argue that bigger sample would be beneficial or at least to increase comparability with other years (methodology often changed, thus limiting comparability of datasets). Fourth, the demographic aspect of analysis is limited to age and sex due to data source itself. HBS is primarily used for weighting inputs to Consumer Price Index. Datasets specifically aimed at demographic research often come with different weighting, to include more observations of less represented groups. However, these limitations do not exclude HBS as a valuable dataset for similar analyses. On the contrary, HBS does include enough sociodemographic variables on individual level but in case of Croatia for 2017. there is a lack in size of specific subsamples that would yield statistically justified analyses.

4. Conclusion

Our descriptive review yielded with several results and insights. Most notably we presented major strengths and weaknesses of Household Budget Survey as a data source for researching consumption from micro-level approach. HBS proved to be a viable source for this research. Unfortunately, earlier HBS is not comparable to 2017. edition so we could not increase our sample of single households. Single households are crucial for identifying correlation between age and consumption patterns. It also applies for other sociodemographic variables given on an individual level. Some results were not significant and small sample of single households in younger age groups limited our analysis.
In line with the existing literature, we showed that income is the key factor in consumption. Also, we supported existing findings that show how with rising income, share of consumption in that income falls. Significant share of households (mean household had ratio consumption to income 1,17) had higher consumption than income which opens new questions on financing those levels of consumption or the quality of HBS data on income. This could be an interesting research question for further research.
We found negative correlation between age and consumption, however results should be supported with further research. Also, we found that gender differences exist, but results were

heavily influenced by age, thus they should be interpreted with caution. Finally, we supported our findings on age correlation with analyzing household composition. Households with member(s) aged 65 or more witnessed lower consumption and income levels. Also, households with member(s) aged 18 or less showed lower consumption per household member. In conclusion, we argue that highest consumption volume is highly dependent on age and income. Analysis on other sociodemographic variables was limited with small subsample of single households. Therefore, the main suggestion for further research is to broaden the sample of single households, especially for younger age groups.

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POSITION OF ADVENTURE TOURISM WITHIN NATURE PARK TOURISM OF CONTINENTAL CROATIA

ABSTRACT

The main objective of the paper is to determine whether nature parks in Continental Croatia recognize the global position and significance of adventure tourism in the tourism industry. The main question is whether its development is planned, organized, and coordinated with respect to prominent global trends of adventure tourism or is it spontaneous, mostly related to the expansion of the market and initiatives of individuals and certain groups? Accordingly, the paper seeks to determine whether nature parks tourism is focused and adapted to the adventure tourism market? It is extremely important to determine the questioned condition because the intensity of the positive and negative tourism effects depends on it. For the purposes of the paper, the research was conducted by the survey method, using a semi-structured questionnaire. Using the questionnaire, the attitudes and approach of public institutions of nature parks and tourist boards that operate at nature parks' area, regarding the representation of adventure tourism products, were examined. Furthermore, the possibilities and limitations of their optimal representation in the tourism supply have been identified. The research is directed to the directors of nature parks or the person responsible for tourism development and the directors of tourist boards or the expert assistants, while obtained data were analysed using the appropriate scientific methods. The obtained results are expected to contribute to a better understanding of nature park managers about the need to develop unique and well-differentiated adventure products, which can provide additional benefits to nature parks and the local community, as well as increase competitiveness and the tourist value across a wide range of adventure products. A good example are destinations that are focused on maintenance preparing programs to undertake specific, physically, and mentally demanding adventure activities that can provide visitors who stay longer than usual one day in nature parks.

Keywords: *protected areas, nature parks, adventure tourism, adventure activities, Continental Croatia.*

1. Introduction

Protected area tourism is recording a steady increase in the number of visitors (Pickering et al., 2018; Tverijonaite et al., 2018; Buckley et al., 2017) on a global scale, with an estimate of about eight billion visits per year globally (Weaver and Lawton, 2017; Balmford et al., 2015). In addition to ecotourism, which generally prevails in protected areas in its soft variant (Weaver, 2008), protected areas increasingly host many adventure tourists (Wang and Lyons, 2012; Newsome et al., 2011; Buckley, 2006) who consider the natural environment to be a dominant factor in choosing a travelling destination (ATTA, 2015). The Republic of Croatia, although rich in protected nature areas (currently 410 protected areas[1]) with a large share of total territory coverage (38.36% of terrestrial protected area coverage and 8.99% marine protected area coverage[2]), still fails to sufficiently use its tourist potentials (e.g. compared to Costa Rica). Aside from certain national parks that face over-tourism in summer months (e.g. The Plitvice Lakes NP, Krka NP), the remainder of Croatia's nature parks are still underutilized (especially in terms of the length of stay and in terms of consumption), all the more so since those are the areas that are being visited throughout the year. On the other hand, adventure tourism is globally recognized as a form of tourism that increasingly commodifies the values of protected areas during the whole year, since it presents an array of activities that entice adventurers to travel throughout all four seasons of the year. The data from ATTA (2015)[3] according to which the natural beauty of the place is a crucial factor for adventure tourists in choosing the travel, i.e. the destination, ahead of the activities that are the primary motive for their travel, confirm the adventure travelling as a strong driver of tourism development in protected areas. Although many adventure activities do not require significant infrastructure, nature parks are still in a better position as opposed to national parks due to the "looser" level of formal protection that allows for certain temporary and / or permanent interventions in the area. Some examples of activities that require specific infrastructure are e.g. hosting adventure races, arranging climbing areas, touring and observing natural beauties with adapted vehicles, and others that take place mainly on land and / or water. Accordingly, the purpose of this paper is to determine the level of harmonization of tourism in the nature parks of Continental Croatia with the trends of adventure tourism. The empirical research aims to compare the offer and promotion of tourist activities of nature parks with the currently most sought-after activities of adventure tourists according to ATTA's adventure travel reports. In this sense, the paper presents the level of representation of adventure tourism products (activities) in nature parks, considering their natural and other characteristics, with a previous summary of the literature regarding the adventure tourism market and its current trends, as well as opportunities and engagement of protected areas in adventure tourism.

2. Adventure tourism

The share of adventure tourism in the tourism market is growing with the increase in demand for activities and staying outdoors, primarily in an unusual natural environment that provides an experience based on challenge, excitement, research, novelty, etc. Given that "adventure" is an increasingly prevalent element in travel selection, it is predicted that adventure travel will

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[1] Bioportal, Analyses and reports of protected areas in the Republic of Croatia, Summary report as of March 5, 2021, available at: http://www.bioportal.hr/gis/ (March 5, 2021)

[2] Protected Planet, World Database on Protected Areas, available at:
https://www.protectedplanet.net/country/ENG (March 5, 2021)

[3] ATTA - Adventure Travel Trade Association is a leading global network of adventure travel leaders of over 30,000 stakeholders from various sectors (tour operators, guides, outdoor educators, gear companies, travel advisors, lodges DMO, DMK etc.), available at: https: // www.adventuretravel.biz/about/ (March 8, 2021)

be one of the most popular forms of tourism worldwide with the status of one of the fastest growing segments of the tourism industry (Giddy and Webb, 2018, Cheng et al., 2016; Buckley, 2014; Williams and Soutar, 2009; Schott, 2007; Ewert and Jamieson, 2003). If we consider the fact that the adventure trip lasts from 7 to 9 days on average, with an average daily consumption of $ 241 to $ 470 (ATTA, 2017), it is not surprising that more and more leading destinations and tour operators are moving towards adventure travel by reshaping existing activities, i.e., by repositioning within the target segment of the adventure tourism market (Swarbrooke et al., 2003). By strengthening the competition, the products of adventure tourism are being continuously improved, while trying to offer the most innovative version of the already known and highly sought-after activities, primarily by specialized tour operators (ATTA, 2018).

As adventure tourists are mostly residents of urban areas that are attracted by the charms and hidden beauties of the unique natural environment (rivers, mountains, deserted islands, jungles, etc.), the level of adventure attractiveness (excitement, exploration, mental and physical challenge, etc.) largely depends on the level of the attractiveness of the natural environment in which the preferred activity takes place (Beedie and Hudson, 2003). Furthermore, the peculiarity of adventure tourism is reflected in the fact that it does not necessarily require investment in infrastructure, i.e. that it does not require significant interventions in an area rich in valuable natural and cultural attractions, and on the other hand it relies on local providers of products and services (local guides, carriers, accommodation providers, etc.). By recognizing its value in the context of sustainable development, adventure tourism is "prioritized" by several countries, both developed and developing countries (UNWTO, 2014). The additional strength of adventure tourism is reflected in the fact that it can meet the needs of different types of visitors (individuals, groups, young, old, experienced-passionate professionals and inexperienced, etc.), given the possible variations and combinations in creating the product delivery (Buckley, 2010) and mostly within the more dominant soft or less represented hard segment (Rantala et al., 2016; Newsome et al., 2013; Beedie, 2008; Buckley, 2006; Page et al., 2006; Pomfret, 2006; Page et al. , 2005; Hudson, 2003). Both segments (soft-low level of difficulty and hard-high level of difficulty) can be commercial trips (individual-non-specialized and specialized adventure tours) and non-commercial trips (private tours of individuals or small groups). Equally, the trips can range from typical adventures to trips taken as such within some other form of tourism (Buckley, 2006). Below are the best ranked elements by the adventure travel market (Table 1), including high-demand trips and activities, high trending clients' motivations and destinations, as well as top clients' purchase method and booking channels.

Table 1: A concise overview of the main features of the adventure tourism market for 2019

High demand trips	High demand activities	High trending client motivations	High trending destinations	Top client purchase methods	Top booking channels
Custom Itineraries	Hiking/ Trekking	Wellness/ Betterment Goals	South America	Word of mouth	TourRadar
Sustainable/ Low Impact Itineraries	Culinary/ Gastronomy	Cultural Encounters	The Antarctic	Tour operator partnerships	TripAdvisor
Electric Bike Itineraries	Cultural	To Travel Like a Local	Western and Eastern Europe	Google AdWords advertising	Facebook
Expert or Specialist-Guided Trips	Wellness-focused activities	Go Off the Beaten Track	The Mediterranean	Travel trade shows	Evaneos

High demand trips	High demand activities	High trending client motivations	High trending destinations	Top client purchase methods	Top booking channels
Remote Destinations/ Trails	Cycling (electric bikes)	New Experiences	Central Asia	Online tour booking platforms	Responsible Travel

Source: ATTA (2020): Adventure Travel Trends Snapshot, Recap of 2019, Adventure Travel Trade Association

According to the latest data by The 2020 Adventure Travel Trends Snapshot, the average cost of travel amounted to $ 3,000 per person or $ 341 per day (excluding transportation costs), of which an average of 74%, or $ 206 per traveller, is spent on local products and services. Also, a significant commitment to visitor safety (74% has a formal visitor safety and risk management plan) and sustainability certification (32%) has been identified. When it comes to tour operators, most of them show that Italy is their main receptive market, while North America is their main regional emitting market. Europe is second in line, with Germany and the United Kingdom being the most important emitting markets (ATTA, 2020). In addition, the previously presented data (Table 1) gives a global overview which differs from region to region. For example, hiking/trekking is the most desired activity in Europe and Asia, while cultural itinerary is a high demand in the remaining regions of the world. In general, Buckley has identified several trends at the beginning of the past decade that have influenced, and still contribute to the spread of adventure tourism. Primarily, we are speaking about an increasing number of events and destinations that adapt to the current needs of adventurers, the increase in products based on multi-activity and combined packages, and the emergence of more luxury products and expedition travels (Buckley, 2010). The data by ATTA (2020) show that middle-priced trips are the most common trips on the market (73%) followed by luxury, expensive trips (23%), where customers spend an average of almost $ 4000 for trips in North America and Africa. It is necessary to mention that adventure travel requires the prior preparation of clients in terms of necessary skills and handling of equipment, regardless of the type of activity and the tour operator program, group or individual itinerary (Ewert and Jamieson, 2003).

Although a product that encompasses the adventure experience can exist separate to the tourism supply (since the adventure experience depends on the client's perception of what is and what is not an adventure), destinations in cooperation with adventure operators create products that meet the requirements of adventurers. Essentially, the adventure tourism supply has created products that include components that immediately associate the client with the adventure. Primarily, the emphasis is on physically demanding and exciting activities or travel to an inaccessible area or high attractive nature.

2.1. Adventure tourism in protected areas

Given the fact that adventure travel is becoming increasingly desirable, there is a growing interest of destinations that offer adventurous experiences. Since adventure tourists prefer to stay in a particular natural environment, protected areas are inevitably desired destinations, from national and nature parks to the remaining lower-ranked ones. The data below (Table 2) presents examples of countries seeking to commodify the potential of protected areas through adventure tourism.

Table 2: Examples of stimulating the development of adventure tourism in selected countries

Country	Examples of stmulating adventure tourism
Chile	Hosted the Adventure Travel World Summit in 2015 given that it owns ten UNESCO Biosphere Reserves and with nearly 20% of its land protected.
Iceland	Iceland's environmental protection authorities are collaborating with its tourist board and other members of the tourism industry to conduct research concerning the carrying capacity of the protected areas.
Slovenia	Continues tourism planning around the idea of a very active and adventurous country using the brand identity of "Green, Active, Healthy, Slovenia".
Botswana	Botswana's National Parks and Reserves comprise 17% of available land and a further 22% has been classified as Wildlife Management

Source: adapted according to ATTA (2015), Adventure Tourism Development Index, The 2015 Report. pp. 3

One of the most prominent factors contributing to the rapid growth of adventure tourism is the commodification of adventure tourism (Giddy, 2018; Beedie and Hudson 2003; Cloke and Perkins 2002), based on adventure tour operators who increasingly create products and services within protected areas. A well-known example of increasing the number of adventurers in protected areas through adventure tour operators are the New South Wales national parks in Australia (Wang and Lyons, 2012). Australia is one of the destinations focused on nature-based tourism, which also includes outdoor adventures in protected areas. Activities available in protected areas range from the prevalent soft ones in national parks to somewhat harder ones in nature parks, and Buckley (2020) argues that participating in such activities can lead to the improvement in health and happiness, i.e. that it helps one recover from stress. According to Newsome et al., (2011), some of the popular activities are often part of various competitions within running, walking, cycling, and alike.

Although it is commonly known that tourism can contribute to protected areas achieving their conservation goals as well as that it can improve the quality of life of the local community (income, education, health care, etc.), adventure tourism can lead to undesirable consequences (primarily ecological and social ones). One of the reasons for that is the fact that adventurers often undertake activities in the more sensitive parts of protected areas and prefer close relationships with the local population (especially with indigenous ones - tradition, customs, culture). Therefore, if tourism in protected areas is poorly managed, such areas may ultimately lose their purpose of existence - protection of natural and cultural values, etc. (Bushell et al., 2006). Therefore, some protected areas are sought to be "preserved" from the invasion of organized adventures, although adventure tourism is increasingly present in such areas, primarily through private arrangements (individuals or smaller groups). On the other hand, most of the mentioned protected areas are focused on adapting to the needs of this segment, which can be considered a "sustainable" practice to some extent, especially since such an approach can systematically monitor and prevent potential negative effects and go in the direction of achieving the desired effects of adventure tourism.

Since there are numerous adventure activities that can be a significant burden on the natural environment (especially land and water activities), it is necessary to adhere to the policy of sustainable tourism, with special emphasis on nature protection and conservation when such activities take place in protected areas. On the other hand, the local community expects greater delivery of benefits through tourism, even more so since the management of public protected areas is mostly financed through public money. Sustainability is no longer a matter of choice – it is an imperative that is, in economic terms, tightly connected to competitiveness. In protected area tourism, sustainability is the basis for continuous optimization of the relationship between the protection and the use of resources, for the benefit of all parties involved. Sustainability, i.e.

what is considered sustainable, may differ from one protected area to another, from their values and conservation objectives, as well as depending on the activities, group size, place of activity, time of year, etc.[4] Therefore, it is necessary to carefully choose the activities that can be undertaken within certain parts of the protected area to ensure a symbiosis of protection and sustainable use (Golub and Jaković, 2019) since environmental impacts depend on the type of adventure activity and what they require (modifications in space, equipment, etc.) and the place where it is undertaken (Buckley, 2006).

Despite the fact that adventure tourists are increasingly present in protected areas, the topic has not yet gained an appropriate position (space) in the academic community, as evidenced by the limited number of available papers (e.g. Newsome, 2014; Barros et al., 2013; Kent et al., 2012; Wang and Lyons, 2012; Buckley, 2010). Although the adventure tourism industry recognizes the potential of protected areas (ATTA, 2018), it is assumed that many protected areas do not use their full potential, especially those whose legislation allows their more intensive, sustainable use (e.g. nature parks, regional parks, etc.). In part, this can be seen in many management plans which show that protected areas do not take the engagement in the adventure tourism market seriously (guidelines for the development, monitoring and management of adventure activities).

3. Protected areas in Croatia and tourism: adventure tourism in nature parks

Croatia is one of the leading countries in the European Union in terms of the number and share of protected nature areas. According to the Nature Protection Act of the Republic of Croatia (OG 80/13, 15/18, 14/19, 127/19), there are nine categories of protected areas. A total of 410 protected areas are currently registered in the Register of Protected Areas of the Nature Protection Administration economy and sustainable development, and detailed data are publicly available through Bioportal[5]. In terms of territory, the mentioned number of protected areas covers 9.32% of the total area of the Republic of Croatia (13.43% of the land area and 1.93% of the territorial sea), and nature parks are the most represented type of protected areas (5.62% of territory). The following is an overview of the national system of categorization of protected nature areas in the Republic of Croatia with basic indicators (Table 3).

Table 3: National system of categorization of protected nature areas

Category	Number of protected areas	% of the area of Croatia	Management level
Strict reserve	2	0.03	County
National park	8	1.11	State
Special reserve	79	0.46	County
Nature park	12	5.61	State
Regional park	2	1.16	County

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[4] Swedish Environmental Protection Agency, Outdoor recreation and nature tourism in protected natural environments, available at: https://www.naturvardsverket.se/Documents/publikationer6400/978-91-620-8738-8.pdf?pid=16071 (March 10, 2021)

[5] Institute for Environmental and Nature Protection, available at: http://www.haop.hr/hr/tematska-podrucja/zasticena-podrucja/zasticena-podrucja/zasticena-podrucja-u-rh (March 9, 2021)

Category	Number of protected areas	% of the area of Croatia	Management level
Natural monument	79	0.00	County
Significant landscape	81	1.56	County
Forest park	27	0.03	County
Monument of park architecture	120	0.01	County
Total	**410**	**9.32**	

Source: adapted according to data from Institute for Environmental and Nature Protection, available at: http://www.haop.hr/hr/tematska-podrucja/zasticena-podrucja/zasticena-podrucja/zasticena-podrucja-u-rh (March 9, 2021)

In addition to the national system of protected areas, Croatia has also seen the establishment of the Natura 2000 ecological network (based on the EU Birds Directive and the EU Habitats Directive). This ecological network aims to influence the conservation of biological diversity, i.e. to preserve areas with endangered species and habitat types. 36.67% of the land territory and 16.26% of the territorial sea and internal sea waters of the Republic of Croatia are protected within the ecological network Natura 2000, i.e. 29.34% of the total area of the Republic of Croatia. Areas under Natura 2000 largely overlap with the existing national categorization system (90.04% within protected areas), which increases the ecological value and tourist attractiveness of the area itself. Considering the data on the share of protected land territory within Natura 2000, Croatia is the second country in terms of the share of covered area, right after Slovenia with 37.9%[6]. The fact that Croatia has an extremely valuable natural heritage is evidenced by protected areas that are recognized within global initiatives that support nature conservation (Table 4), such as UNESCO Heritage List, UNESCO Geoparks, MAB Biosphere Reserve, List of Internationally Valuable Wetlands of the Ramsar Convention and alike.

Table 4: Internationally protected areas in the Republic of Croatia

International protection	Area name	Year of establishment	National protection
UNESCO – World Heritage List	Plitvice Lakes	1979	Plitvice Lakes National Park
	Beech rainforests and native beech forests of the Carpathians and other regions of Europe	2017	Northern Velebit National Park Paklenica National Park
MAB – Biosphere reserve	Velebit Mountain	1977	Paklenica National Park Northern Velebit National Park Nature park Velebit
	Mura-Drava-Dunav	2012	Mura-Drava Regional Park
List of internationally valuable wetlands od Ramsar Convention	Crna Mlaka	1993	Crna Mlaka Natural Reserve
	Kopački rit	1993	Kopački Rit Nature Park

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[6] Natura 2000 Barometer, available at: https://www.eea.europa.eu/data-and-maps/dashboards/natura-2000-barometer (March 10, 2021)

International protection	Area name	Year of establishment	National protection
	Lonja Field and Mokro Field, including Krapje Đol	1993	Lonja Field Nature Park Ornithological Nature Reserve Krapje Đol
	Neretva Delta	1993	Confluence of the Neretva Delta Nature Reserve Nature reserves Modro oko and Jezero Desne Kuti Nature Reserve
	Lake Vrana	1999	Lake Vrana
UNESCO World Geoparks Network	Papuk Vis archipelago	2007 2019	Papuk Nature Park Blue Grotto Nature Monument Medvida Grotto Nature Monument Zelena špilja-island of Ravnik Nature Monument Island of Jabuka Nature Monument Island of Brusnik Nature monument Stiniva Bay Significant Landscape Ravnik Significant Landscape

Source: adapted according to the data of the Institute for Environmental and Nature Protection, available at:
http://www.haop.hr/hr/tematska-podrucja/zasticena-podrucja/zasticena-podrucja/zasticena-podrucja-u-rh
(March 9, 2021)

It is common knowledge that national parks are the highest ranked protected areas in terms of tourist demand, as they possess highly attractive, rare and unique Earth's natural phenomena that attract many visitors. When such areas are recognized globally or regionally, their tourist attractiveness is even more pronounced. An example that confirms this is certainly the Plitvice Lakes National Park (UNESCO Heritage List), which attracts the largest number of visitors of all protected areas in Croatia. Below are more detailed data on tourism in the "Parks of Croatia", with special reference to tourism in the nature parks of Continental Croatia.

3.1. Tourism in parks of Croatia

The policy of nature protection in Croatia began at the beginning of the 20th century, and the first national parks (Plitvice Lakes National Park and Paklenica National Park) were formally declared in 1949 (Ćorić and Šantić, 2012). Although protected areas have attracted visitors (primarily nature lovers and people involved in the study of nature) from the very beginning, today they attract all groups of visitors en masse. In terms of visits, protected areas in the Adriatic region are the predominate ones in Croatia, given the proximity of the main receptive tourist markets in the Adriatic region. National parks, namely Plitvice Lakes National Park and Krka National Park, which are visited by about 75% of the total number of visitors to protected areas in Croatia, are certainly in the forefront. In order to bring the entire protected natural heritage of the Republic of Croatia closer to the tourist market and connect high-ranked areas

with lesser-known ones, a platform, i.e. the brand "Parks of Croatia"[7] – which unites all national parks and nature parks – has been established. These are the categories that are most represented in the tourism of protected areas in Croatia and for which the number of visitors is monitored at the national level. Table 5 shows the number of visitors for 2019 and 2020 for each individual national park and nature, with a significant decrease in the number of visitors in 2020 because of the COVID-19 epidemic (except nature park Biokovo).

Table 5: Number of visitors in national parks and nature parks in 2019 and 2020

Protected area	Number of visitors in 2019	Number of visitors in 2020
Brijuni National Park	152,522	74,135
Kornati National Park	242,321	8,521
Krka National Park	1,364,000	423,010
Mljet National Park	148,395	37,844
Paklenica National Park	144,681	64,924
Plitvice Lakes National Park	1,771,523	445,841
Risnjak National Park	31,074	14,580
Northern Velebit National Park	21,636	19,691
Kopački Rit Nature Park	70,000	18,418
Lastovo Archipelago Nature Park	39,338	5,936
Lonja Field Nature Park	18,779	4,862
Telašćica Nature Park	123,516	49,773
Učka Nature Park	30,000	30,000
Velebit Nature Park	50,904	27,486
Vrana Lake Nature Park	125,000	34,818
Žumberak-Samobor Highlands Nature Park	54,678	51,000
Medvednica Nature Park	316,373	203,339
Papuk Nature Park	52,633	45,048
Biokovo Nature Park	68,000	119,453
TOTAL	**4,825,373**	**1,678,679**

Source: adapted according to the primary data by Service for Protected Areas, Ministry of Economy and Sustainable Development

From the previous table, we can observe the total decrease by 3,146,694 in the number of visitors in 2020 compared to 2019, i.e. a decrease of 65%. Although staying outdoors had the best perspective of all other tourist trends in 2020, it can be concluded that tourism in protected areas in Croatia is extremely dependent on tourists staying in 3S destinations. Certainly, the limited movement in certain months during 2020 is also one of the reasons for the lower visiting rates of protected areas, but to a much lesser extent. If Croatia wants to develop a year-round nature-based tourism, the development concept must change, with the adoption of a clear development plan.

3.2. Tourism in nature parks of Continental Croatia: the state and possibilities of adventure tourism

The main difference between nature parks and national parks lies in the legislation and the opportunities and limitations that arise from it for both types of parks (Croatian Nature

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[7] Parks of Croatia, available at: https://www.parkovihrvatske.hr/homepage (March 11, 2021.)

Protection Act, OG 80/13, 15/18, 14/19, 127/19). Although national parks are mostly areas of higher level of attractiveness due to the peculiarities / rarities of natural phenomena, their development potential is limited. On the other hand, nature parks do not have such development restrictions, which allows them a higher level of sustainable use of resources and interventions in space (e.g. tourist infrastructure and superstructure, roads, etc.). As of 2021, Croatia has twelve nature parks (Dinara Nature Park has been newly proclaimed), five of which are in the Continental region and the remaining seven are in the Adriatic region. Given the lower visiting rates in comparison to the visiting rates of national parks, the ecological sustainability of the nature park is not compromised. Of course, some nature parks record a continuous increase in the number of visitors, mostly those located in the Adriatic region or near large cities (e.g. Vrana Lake Nature Park, Medvednica Nature Park).

What certainly characterizes nature parks in the Continental region, is the fact that they are not located near the main receptive destinations that generate a large share of nature park visitors in the Adriatic region. As shown on the map (Figure 1), the two nature parks are located very close to large cities that contribute to increased attendance (Medvednica Nature Park - City of Zagreb and Kopački Rit Nature Park - City of Osijek). Given the landscape characteristics, the nature parks of Continental Croatia can be classified into two groups. Three nature parks cover mountain areas (Medvednica Nature Park, Papuk Nature Park, Žmberak - Samobor Highlands Nature Park), and the remaining two nature parks are of flood-wetland character, located by the two most important rivers (Kopački Rit Nature Park along the river Drava and Lonja Field Nature Park along the river Sava). In addition to activities that are common to all nature parks (schools in nature, walking, observation, photography, events, etc.), tourist products differ in accordance with the above landscape features.

Figure 1: Nature parks distribution in Continental Croatia
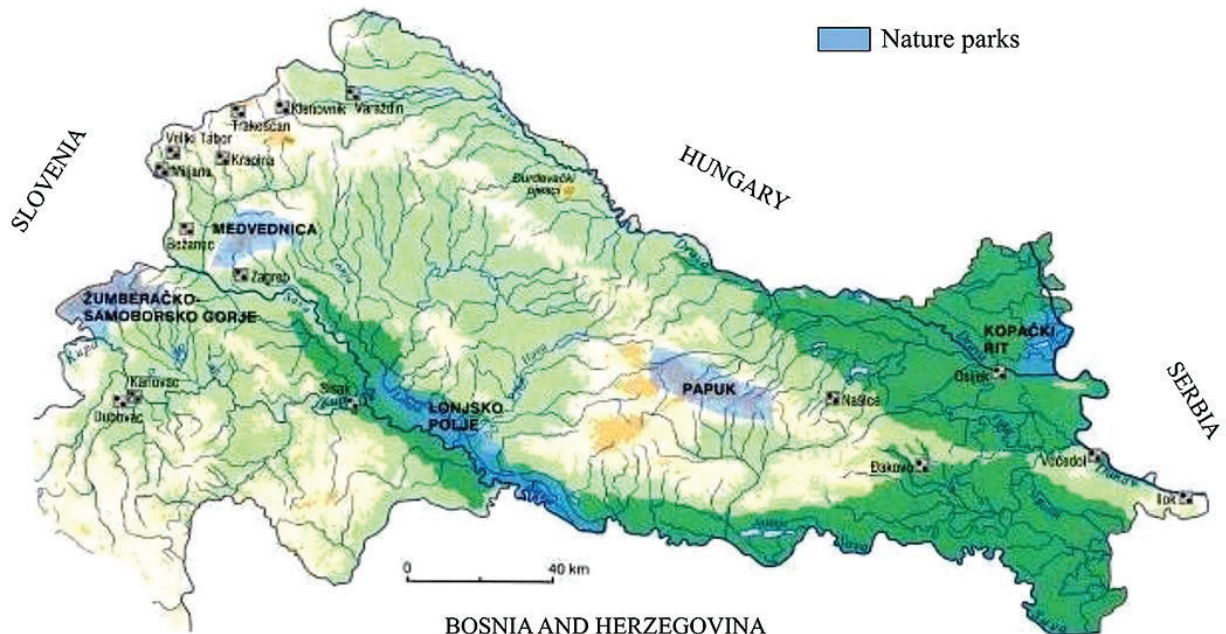
Source: Jaković, B., Tubić, D., Bakan, R. (2018): Touristic events as generators of visitations increase and tourism sustainability of nature parks in continental Croatia? Turizam, Vol. 22, No. 1, pp. 23.

Over the past few years, nature parks have been required to adopt a visitor management plan to optimize use, monitor the situation and act towards the prevention and recovery of the area, while creating the preconditions for increasing benefits for all stakeholders involved. It is to be

expected that this practice will raise tourism to a higher level, although it is insufficient to maximize the effects of tourism in the context of economic sustainability (primary visitor destinations, environmentally and socially conscious visitors - locally retained consumption, longer stay, increased consumption, etc.). Although there are greater opportunities for sustainable tourist use of nature parks, the Reports of the annual program implementation for the protection, maintenance, conservation, promotion and use of nature parks shows insufficient engagement and participation of locals in providing products and services (concessions). This situation will certainly not contribute to increasing the economic effects of tourism, primarily aimed at the local community, because longer stays and increased consumption require accompanying tourist facilities that are suitable for target groups. This is exactly one of the reasons for questioning the compliance of the offer of the nature parks of Continental Croatia with the current products (activities) on the adventure tourism market.

It is generally known that certain adventure activities (especially hard ones – e.g. climbing, caving, etc.) do not require establishment of infrastructure in an area (roads, landscaped climbing areas, etc.). Thus, for example, the nature parks of mountainous areas are in themselves suitable for such activities. The situation is similar to other adventure activities that take place in air or on water. Therefore, each nature park has certain comparative advantages for adventure tourism development, either for individual or organized travel. Nature parks with mountain features (e.g. Medvednica, Papuk, Žumberak - Samobor Highlands) are suitable for trekking, climbing, mountain biking, off-roading and other recreational and even competitive activities, including air activities (paragliding, ballooning and similar). On the other hand, the nature parks with lowland-wetland features (Kopački Rit and Lonja Field) are suitable for observing flora and fauna, primitive rafting, and other water activities (kayaking, canoeing), including air activities. However, in order for the nature parks of Continental Croatia to be competitive destinations on the adventure tourism market, apart from their resource base, it is necessary to establish accompanying facilities that will be the starting point for further commercialization. Primarily, it is necessary to establish appropriate tourism infrastructure (adapted trails, signalization, guides and instructors, necessary equipment, etc.) and superstructure (appropriate type and the number of accommodation facilities - camps, the possibility of spending the night outdoors or in authentic accommodation, and other facilities). Such a development scenario can certainly meet the requirements of soft adventurers, which are prevalent on the market. Therefore, management faces the challenges of market orientation, networking with relevant stakeholders in the development and delivery of a targeted adventure product, and more intensive work in the segment of marketing and sales.

4. Methodology and data analysis

The research was conducted on all five nature parks located in Continental Croatia, which covers Eastern and Central Croatia and the northeaster part of Croatia. The total area of the nature parks covered by the survey is approximately 1585, 9 km² (Jaković et al., 2018). Empirical research aims to compare the offer and promotion of tourist activities of nature parks with the currently most sought-after activities of adventure tourists according to ATTA's adventure travel reports. For the purposes of the paper, the research was conducted by the survey method, using a semi-structured questionnaire distributed via Google form. Using the questionnaire, the attitudes and approach of public institutions of nature parks and local and regional tourist boards that operate at nature parks'area, regarding the representation of adventure tourism products, were examined. The research was directed to the managers of nature parks or the persons responsible for tourism development and the managers of tourist boards or the expert assistants. The total number of respondents included in the survey was 25,

and the rate of return of completed questionnaires was 60%. The obtained empirical data were analysed by appropriate scientific methods and techniques.

4.1. Research results

The research was aimed at determining the level of representation of adventure tourism in nature parks, i.e. the harmonization of tourism in the nature parks of Continental Croatia with the trends of adventure tourism. Analysing the collected data, the level of representation of the most globally sought-after adventure activities and the importance of individual elements of nature parks for the development of adventure tourism were first determined (Table 6). From the obtained results it can be read that the respondents rated cycling as the activity they rely on the most within adventure tourism (average value 2.6), while wellness activities are the least represented ones (3.93). The element that was rated as the most important for the development of adventure tourism in nature parks was the natural environment (2.0). Respondents believe that the attractiveness of adventure tourism products, as well as the attractiveness of many adventurers depends on the natural values of the area. What was almost insignificant for adventurers when choosing a trip, unlike average tourists, was the proximity and good transport accessibility (connection) of the destination, which respondents rated as the second most important element for the development of adventure tourism immediately after nature (2,13). Furthermore, although climate was a highly ranked factor in the choice of adventure travel (destination) in correlation with the desired activities, the respondents' perception was the opposite - they consider it the least significant factor influencing the development of adventure tourism in nature parks (2.66).

Table 6: Prominence of activities and factors of adventure tourism development

Level of representation of top trending adventure activities (1 – most prominent; 5 – least prominent)	Mean
Hiking/ Trekking	**2.73**
Culinary/ Gastronomy	**2.93**
Cultural	**2.93**
Wellness-focused activities	**3.93**
Cycling (electric bikes)	**2.60**
Observing and photographing	**3.20**
Significance of measured elements for the development of adventure tourism in nature parks (1 – most significant; 5 – least significant)	Mean
Exceptional nature attractiveness (peculiarity)	**2.00**
Cultural and historic values	**2.53**
Array of adventure activities that the nature park relies on	**2.26**
Coherence of activities with the climate of the area	**2.66**
Proximity to a city, exceptional traffic availability of the destination/locality	**2.13**

Source: Authors

When it comes to marketing activities (Graph 1), social networks are the most used communication tool with target markets in general, including adventure tourism (2.0). Continental Croatian nature parks are still predominately visited by school children, for whom the offer is most adapted (schools in nature, tours, interpretations, etc.) There is a shift in orientation towards people seeking recreation in nature, who are the second preferred target group of visitors (2.6), followed by families with children (2.73). When it comes to targeted markets, the domestic market, which also generates the largest number of visitors, is the most

animated one (2.13), and of all the markets that were measured in the research, the leading European emitting markets for adventure tourism (Germany, the United Kingdom and France) are the least animated ones.

Graph 1: Marketing engagement according to adventure tourism market

REPRESENTATION OF MARKETING TOOLS

| web page | social networks | own printed material | appearance at fairs | specialised magazines and tour operators | Google AdWords |

AIMED VISITOR SEGMENT

| school children | families with children | young people (singles and couples) | experienced adventure tourists | eco-tourists | outdoor recreationists |

AIMED MARKETS

| regional market | national market | markets of neighbouring countries | Germany | United Kingdom | France |

Source: Authors

To gain a more realistic insight, respondents were required to assess the potential limitations of adequate commodification of nature parks in the adventure tourism market (Table 7). Respondents regard the non-recognition of adventure tourism as a lucrative tourism segment as the main reason for insufficient engagement in the development of adventure tourism in nature parks (3.93). The respondents rated the existence of prerequisites and available resources for creating attractive products – which is especially important for active participation in the adventure tourism market, as the least significant limiting factor (2.33), as well as the limitations arising from legislation (2.60).

Table 7: Limiting factors of adventure tourism development

Limitations od adventure tourism arising from the measured elements (1 – most significant; 5 – least significant)	Mean
Insufficient demand of „real" adventure tourists for nature parks	**3.60**
Insufficient potentials on which high quality adventure tourism products can be based	**2.33**
Insufficient promotion of adventure tourism in the target tourism market	**2.86**
Lack of interest of business entities and the population to participate in the offer	**2.66**
Legal restrictions of nature and environmental protection policy	**2.60**
Adventure tourists are weaker consumers than average tourists	**3.93**

Source: Authors

5. Discussion and conclusion

Nature parks in Croatia have an extremely significant role, given their representation in the total surface of protected areas. In addition to their natural values which contribute to nature protection, they are highly valuable potentials of the national economy, especially the less developed parts of Croatia (Slavonia and Lika). It is generally known that some counties in Slavonia (part of Continental Croatia) are some of the least developed ones. Tourism is still considered present, but insufficiently capitalized in such counties, especially those that abound in protected areas. The nature parks of Continental Croatia are some of the potential destinations for adventure tourists, whose number is continuously increasing in the overall tourist trends. It is generally known that adventure tourism is one of the fastest growing forms of tourism whose tourists spend a lot on travel (ATTA, 2020), with the peculiarities of nature being the crucial factor in choosing a destination.

As nature parks are areas that allow a higher level of adaptation to the tourist market as opposed to national parks, with significantly lower attendance (especially those of Continental Croatia, away from cities), it is considered relevant to explore adventure tourism in nature parks in Continental Croatia for the first time. Although the functioning of public institutions that manage nature parks takes place within public funds, the representation of tourism, in addition to contributing to increased investment in protection, contributes to the socio-economic development of the local community. Given the characteristics of the demand market for adventure tourism and the nature parks of Continental Croatia, there is a significant compatibility of the observed topics on which the basic goal of the paper is based.

Although nature parks essentially allow the practice of high demand adventure activities (ATTA, 2020), there is room for better involvement of nature parks in the adventure tourism market. This is evident from the data that primarily arise from the analysis of the results of marketing research activities. If the obtained data (Graph 1) are compared with the current trends of the adventure tourism market (Table 1), a certain disparity (room for improvement) is noticed between the current marketing activities by which nature parks represent the tourist market and those that are more effective in attracting adventurers. Therefore, in order to make better use of the potential of nature parks within adventure tourism, a shift is needed in terms of the use of marketing tools towards the current target groups of adventurers in the nearest active receptive markets (Graph 1), given that significant constraints on adventure development tourism are not present (use and protection of resources).

Considering the limitations of public institutions of nature parks and tourist boards that promote tourism of nature parks (insufficient number of employees in tourism, multitasking, inability to specialize in certain tourist markets, etc.) known to the authors, there is a need for cooperation with intermediaries and other active promoters of adventure tourism that can take over most of the specific marketing. Given the global experiences of destinations in which specialized

adventure tourism companies are present, a shift can be expected by applying such a development model.

Given the previously open issues related to the specialized segment of adventure tourism, the future research should be more extensive and should include respondents from the segment of specialized adventure tourism industry (tour operators, clubs and associations, promoters, suppliers of specialized equipment, etc.). Also, it is necessary to include a larger number of respondents in the research to obtain the most reliable data.

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ANALYSIS OF HUMAN RESOURCES DEVELOPMENT OF EASTERN CROATIA – SIX YEARS LATER[1]

ABSTRACT

In Croatia, there are great differences in the development of certain regions, as measured by the standard indicator of GDP per capita, unemployment and employment rates. There are also noticeable and significant differences in the development of human resources.
The aim of the paper is to analyse human resources development in Eastern Croatia six years after the presentation of the first analysis of the data at the 3rd International Scientific Symposium "Economy of Eastern Croatia - Vision and Growth" in Osijek. Analysed is the global human component based on quantitative and qualitative indicators (population density, average household size, degree of urbanisation); indicators that directly express the degree of utilisation of human resources (employment per 100 inhabitants, employment by sectors), indicators that point to the presence of conditions for the formation of a quality human factor (coverage of relevant age groups by secondary and tertiary education, the number of pupils and students per 100 inhabitants). Also, Human Development Index (HDI) for Osijek-Baranja County, Požega-Slavonia County, Brod-Posavina County, Vukovar-Srijem County and Virovitica-Podravina County is calculated. In terms of content, the Human Development Index can be used as a good indicator of human resource development and at the same time it is the indicator of the achieved level of development of a particular country/region. At the end of the paper, an analysis of migration is carried out. The analysis of the development of human resources showed that all counties have a Human Development Index above 0.800 in 2019. However, the development of human resources in Eastern Croatia had slower dynamics than the average development of human resources in Croatia. Based on the results of the analysis, some possible measures for human resource development are suggested.

Keywords: *human resources, economic growth, economic development, migrations, Eastern Croatia.*

1. Introduction with Literature Review

Human resources represent the total psychophysical power that a society possesses. (Bahtijarević Šiber, 1999). A higher level of human resource development leads to faster economic development and vice versa. The analysis and investigation of the effects of human development on economic growth has gained an increased interest from economists and has been analysed by researchers over the last decades. The theory regarding this relationship is backed by work of Mincer (1958), Schultz (1961) and Becker (1962). It is accepted that

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human resources are considered as one of the main determinants of economic growth. Literature identifies two ways in which human resources can contribute to growth process: human resources directly participate in production and human resources contribute to raising technical progress through education. (Barro, 2001) Over the years there has been an extensive research that examines the contribution of human capital in the growth process. Barro (1991) found that primary and secondary enrolment rates have a positive growth effect, Barro and Sala-i-Martin (1995) found that the average schooling years have a significant positive impact on the economic output. Bloom et al. (2004) found that schooling and life expectancy positively contribute to economic growth. Different papers analyse connection between economic growth of specific countries and human resources development: Mahmood, H. analyse development of Saudi Arabia (2018) Arabi, K. A. M. et al. (2013) development of Sudan, Neira, I. et al. economic growth and development of different European countries (2009).

There are several ways to measure human resource development and one of the most commonly used is the Human Development Index. In addition to calculating the HDI, the paper analyses the global human component and demographic trends of counties in eastern Croatia for the period 2012-2019 through the analysis of quantitative and qualitative indicators (population density, average household size, degree of urbanisation) and indicators that directly express the level of human resource utilisation.

The aim of the paper is to analyse human resources development in Eastern Croatia six years after the presentation of the first analysis of the data at the 3rd International Scientific Symposium "Economy of Eastern Croatia - Vision and Growth" in Osijek. The second aim of the paper is to complement the existing analyses and to determine whether there have been positive or negative changes during this period.

2. Movement of the population in the period 2011-2019

The dynamics and structure of population movements are shaped by various factors: birth rate, death rate and migration. The basic determinants of this process can be described as natural and mechanical components of the overall change in population size.

Table 1: Basic population data in 2011 and estimate for 2019

	Population in 2011	Number of households in 2011	Estimate of the total population 2019	Index Population 2019/2011	Population density in 2011 (inh./km²)	Population density in 2019 (inh./km²)
Republic of Croatia	4284889	1519038	4065253	94,87	75,71	71,83
Virovitica-Podravina County	84836	29622	73641	86,80	41,92	36,38
Požega-Slavonia County	78034	26408	66256	84,91	42,81	36,34
Brod-Posavina County	158575	52056	137487	86,70	78,12	67,73
Osijek-Baranja County	305032	110009	272673	89,39	73,41	65,63
Vukovar-Srijem County	179521	61094	150956	84,09	73,15	61,51

Source: Authors' calculation according to the National Bureau of Statistics, the 2011 Census and the Population estimate National Bureau of Statistics 11.9.2020

According to the 2011 Census, the largest population lives in Osijek-Baranja County. Požega-Slavonia County had the highest percentage of urban population in 2011 (74.9%), and Brod-

Posavina County has the highest population density (78.12 inhabitants per km2), which is a positive deviation compared to the Croatian average.

Compared to the 2011 census, in 2019 there is a decrease in the number of inhabitants in the Republic of Croatia and all Eastern Croatian counties. Croatia has a population decrease of 5.13% in 2019 and the county with the highest decrease is Vukovar-Srijem County (15.91%). The lowest decrease was recorded in Osijek-Baranja County (10.61%), but it is still higher than the average for the Republic of Croatia. An even greater decrease is expected after the census in 2021, when the true number of people who moved out will be determined.

The term migration means spatial mobility, or mechanical movement of population. Mobility is a more general term than migration because migration is the spatial mobility of the population, and as such is only one of the components of total population mobility. The components of migration, or mechanical movement of population, are immigration (inflow) and emigration (outflow) of population. Unlike natural movement, which was originally a biological phenomenon, population migrations are economic and social (social and political) phenomena (Družić, 2011).

In the period after the 2014 and 2015 paper (Karaman Aksentijević, Ježić, 2014 & Karaman Aksentijević, Ježić, 2015) and after the 2011 census, many things have deteriorated in relation to migrations.

Table 2: Total net migration in the period 2012-2019

	2012	2013	2014	2015	2016	2017	2018	2019	Total change in the period 2012-2019	% of population based on 2011 census
Republic of Croatia	-3918	-4884	-10220	-17945	-22451	-31799	-13486	-2422	-107125	2,50
Virovitica-Podravina	-447	-443	-706	-1172	-1224	-1590	-1221	-1166	-7969	9,39
Požega-Slavonia	-810	-417	-700	-1243	-1462	-1835	-1264	-972	-8703	11,15
Slavonski Brod-Posavina	-699	-1289	-1608	-2254	-2751	-3701	-2238	-1577	-16117	10,16
Osijek-Baranja	-766	-1207	-1770	-2634	-3952	-5460	-3542	-2557	-21888	7,18
Vukovar-Srijem	-871	-1624	-2579	-2712	-3526	-5665	-3101	-2105	-22183	12,36

Source: Authors' calculation according to the National Bureau of Statistics, the 2011 Census and the Population estimate National Bureau of Statistics 11.9.2020

Net migration is the difference between the number of immigrants and the number of emigrants in a given area or country. Although it should be noted that there is also immigration in the period 2012-2019, it is estimated that 107125 inhabitants left Croatia. This represents about 2.5% of the total population. The situation is much worse in the counties in the east of Croatia. The biggest population loss due to emigration is in Vukovar-srijem (12.36% of the total population) and Požega- Slavonia (11.15%) counties. A total of 15372 inhabitants left Eastern Croatia, which is 14.4 % of the total number of people who left Croatia.

The natural movement of the population implies the difference between the birth rate (natality) and the death rate (mortality) of the population in a given period (usually one year).

Table 3: Natural Movement in the Period 2011 – 2019

	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total in the period 2011-2019	% of population based on 2011 census
Republic of Croatia											
Live births	41197	41771	39939	39566	37503	37537	36556	36945	36135	347149	8,10
Deaths	51019	51710	50386	50839	54205	51542	53477	52706	51794	467678	10,91
Natural increase	-9822	-9939	-10447	-11273	-16702	-14005	-16921	-15761	-15659	-120529	-2,81
Virovitica-Podravina											
Live births	816	794	790	737	693	686	646	690	632	6484	7,64
Deaths	1246	1184	1172	1145	1133	1109	1164	1079	1144	10376	12,23
Natural increase	-430	-390	-382	-408	-440	-423	-518	-389	-512	-3892	-4,59
Požega-Slavonia											
Live births	691	736	703	692	636	617	611	600	603	5889	7,55
Deaths	1046	1014	1008	986	1076	987	1005	1016	1045	9183	11,77
Natural increase	-355	-278	-305	-294	-440	-370	-394	-416	-442	-3294	-4,22
Slavonski Brod-Posavina											
Live births	1615	1563	1512	1412	1314	1301	1276	1196	1199	12388	7,81
Deaths	1958	2035	1917	1957	2125	2031	2006	2011	1997	18037	11,37
Natural increase	-343	-472	-405	-545	-811	-730	-730	-815	-798	-5649	-3,56
Osijek-Baranja											
Live births	2835	2919	2786	2685	2551	2399	2378	2339	2217	23109	7,58
Deaths	3914	4096	3825	3945	4108	3817	3897	3886	3839	35327	11,58
Natural increase	-1079	-1177	-1039	-1260	-1557	-1418	-1519	-1547	-1622	-12218	-4,01
Vukovar-Srijem											
Live births	1698	1772	1593	1651	1438	1436	1302	1279	1293	13462	7,50
Deaths	2269	2325	2261	2270	2400	2307	2362	2283	2193	20670	11,51
Natural increase	-571	-553	-668	-619	-962	-871	-1060	-1004	-900	-7208	-4,02

Source: Authors' calculation according to the National Bureau of Statistics, the 2011 Census and the Population estimate National Bureau of Statistics 11.9.2020

Between 2011 and 2019, all East Croatian counties had negative natural population growth, i.e., more residents died than were born. The highest negative natural increase, i.e. natural decrease, had the county Osijek-Baranja, where in the above period 23109 inhabitants were born and 35327 died (natural increase of -12218 inhabitants, which is 10.13% of the negative natural increase of the population of Croatia in this period). The smallest population decrease due to negative natural increase occurred in Požega- Slavonia County (-3294 inhabitants).

Taking into account the mechanical and natural movement of the population, Vukovar-srijem County had the greatest negative impact.

Table 4: Life Expectancy in 2011 and 2019

	2011	**2019**	**Difference in years**
Osijek-Baranja	75,734	77,246	+1,512
Požega-Slavonia	76,449	76,869	+0,420
Brod-Posavina	76,847	77,065	+0,218
Vukovar-Srijem	76,123	77,502	+1,379
Virovitica-Podravina	74,107	76,142	+2,035
Republic of Croatia	77,305	79,808	+2,503

Source: Authors' calculation

The average life expectancy in the Republic of Croatia in 2019 was 79,808 years, 2,503 years longer than in 2011, which is due to an increase in the standard of living, especially health care and education levels of the population. However, in the East Croatian counties, life expectancy is growing much slower than the Croatian average. In the analysed counties, life expectancy was highest in Vukovar-srijem County (77.502 years). The largest increase compared to 2011 (+2.035 years) has Virovitica-Podravina County. The smallest increase was recorded in Brod-Posavina county. Of all the counties studied, the highest negative deviation from the Croatian average was recorded in the county Virovitica-Podravina, where the population lived on average 3 years and 6 months less in 2011 compared to the Croatian average. The same negative results were also visible in 2015 (Karaman Aksentijević, Ježić, 2015).

Chart 1: Life Expectancy in 2011 and 2019 for the Republic of Croatia and East Croatian Counties (in years)
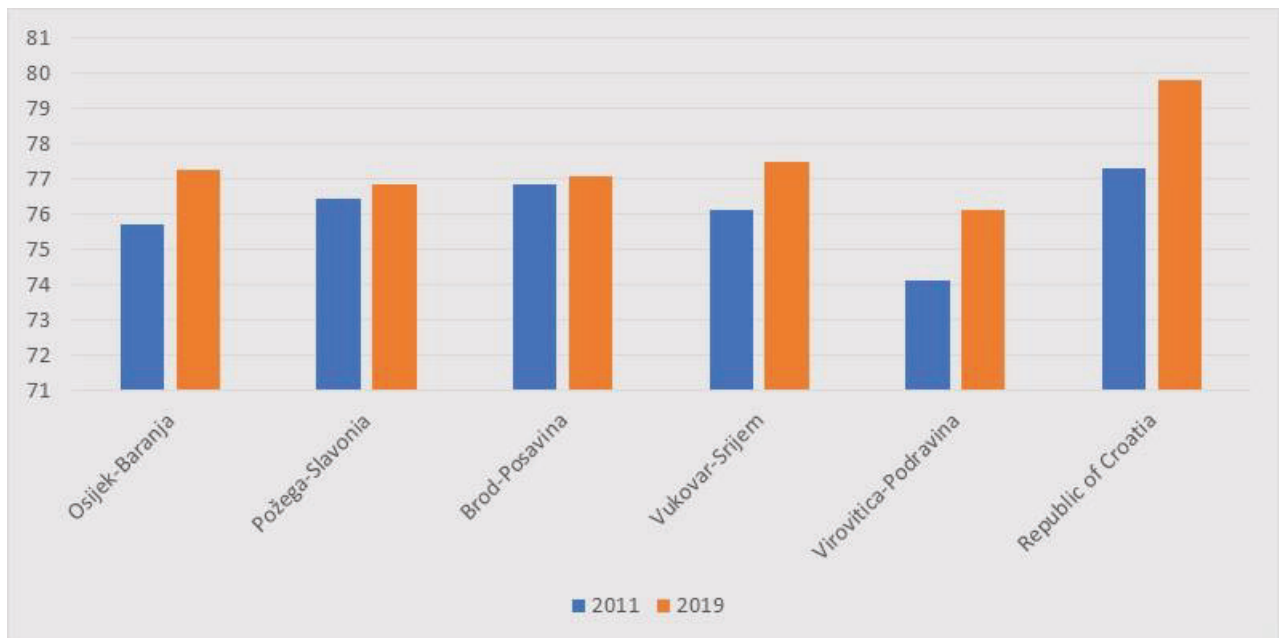
Source: Authors

Croatia and the East Croatian counties are facing a long-term trend of declining birth rates and consequently an ageing population. Fertility rates are moving below the level of simple reproduction of the population. The result of such trends is negative rates of natural population growth. The proportion of elderly and old population is increasing. Such trends have negative consequences for the economy of certain counties and the country as a whole.

In the author's opinion, the 2021 census data will show the same negative trends, and perhaps even worse trends due to the pandemic COVID -19.

The importance of human resources to economic development will be analysed later in the paper.

3. Analysis of Human Resources Development in Eastern Croatia

In the authors' work from 2014, the global human component of the Republic of Croatia and Eastern Croatian counties was analysed (Karaman Aksenstijević, Ježić, 2014). In this paper, a comparison of the same data with the 2019 data is performed. The global human component is the way of measuring the development of human resources using various data available in national statistics: total number of employees per 100 inhabitants, number of employees in the secondary sector per 100 employees, number of high school students per 100 inhabitants, number of university students per 100 inhabitants.

Table 5: Global human component in the 2012 and 2019

	Total number of employees per 100 inhabitants, 2012	Total number of employees per 100 inhabitants, 2019	Index2019/2012	Number of employees in the secondary sector per 100 employees, 2012	Number of employees in the secondary sector per 100 employees, 2019	Index 2019/2012
Republic of Croatia	24,89	29,31	117,76	28,93	27,39	94,68
Virovitica-Podravina County	15,48	17,75	114,66	32,17	18,28	56,82
Požega-Slavonia County	17,30	19,44	112,37	33,74	14,49	42,95
Brod-Posavina County	15,73	18,21	115,77	39,78	19,59	49,25
Osijek-Baranja County	22,55	23,39	103,73	31,90	14,09	44,17
Vukovar-Srijem County	16,95	19,39	114,40	27,21	13,49	49,58
	Number of high school students per 100 inhabitants, in 2012	Number of high school students per 100 inhabitants, in 2019	Index 2019/2012	Number of university students per 100 inhabitants in 2012	Number of university students per 100 inhabitants in 2019	Index 2019/2012
Republic of Croatia	4,36	3,44	78,90	3,57	3,69	103,36
Virovitica-Podravina County	4,49	3,17	70,60	2,75	2,67	97,09
Požega-Slavonia	4,98	3,49	70,08	3,57	3,43	96,08

	Total number of employees per 100 inhabitants, 2012	Total number of employees per 100 inhabitants, 2019	Index2019/2012	Number of employees in the secondary sector per 100 employees, 2012	Number of employees in the secondary sector per 100 employees, 2019	Index 2019/2012
County						
Brod-Posavina County	4,79	3,19	66,60	3,14	3,07	97,77
Osijek-Baranja County	4,61	3,47	75,27	3,07	3,05	99,35
Vukovar-Srijem County	4,78	3,37	70,50	2,78	2,78	100,00

Source: Authors' analysis according to the National Bureau of Statistics, the 2011 Census and National Bureau of Statistics data 2019

The analysis of the data in Table 5 shows a below-average level of development of the global human component in Eastern Croatian counties compared to the Croatian average.

In fact, as in 2012, all counties recorded a lag in the number of employees per 100 inhabitants compared to the Croatian average. Compared to 2012, all counties increased the total number of employees per 100 inhabitants, but at the national level the increase is higher. The number of employees in the secondary sector per 100 employees in 2019 has decreased by 5.42% in the Republic of Croatia compared to 2012. Unfortunately, the number more than doubled in the counties in the east of Croatia due to deindustrialization (in Požega- Slavonia County by 57.05%). Eastern Croatian Counties recorded a significant decrease in the number of students in secondary schools per 100 inhabitants in 2019. The largest decrease of 33.4% was recorded in the Brod-Posavina county, which will certainly be a significant problem for the development of human resources and thus for economic development in the future. The biggest decrease in the number of university students per 100 inhabitants in 2019 has Požega-Slavonia County (3.92%), although the total number of students at the Croatian level is growing (3.36%).

All this leads to the conclusion that the analyzed counties reach significant development lags in the development of human resources.

The Human Development Index is calculated as a combined index of three indicators. These are: (1) the life span and health status of the population, measured by life expectancy; (2) the knowledge and education of the population; (3) the purchasing power, i.e. the standard of living of the population, measured by GDP per capita. The first two indicators indirectly show the development of human resources, while the third indicator gives a better picture of the level of development achieved by a country. These three indicators are suitable to indirectly show the development of human resources at the macro level, since a higher life expectancy of the population implies a better state of health, which leads to better mental and physical abilities, i.e. a higher vitality of the population. The purchasing power of the population indirectly expresses the degree of satisfaction of needs and therefore the satisfaction and motivation of employees. It also indirectly, though not accurately enough (because GDP per capita and not per worker is taken into account), expresses labor productivity. Finally, the

level of education achieved indirectly expresses the degree of mastery of knowledge and skills necessary to achieve growth and development. (Karaman Aksentijević, N., Denona Bogović, N., Ježić, Z, 2019, pp. 24-26).

Table 6: HDI for the Republic of Croatia and Eastern Croatian counties in 2011

	Human Resources Education Index	GDP/ Pc USD	GDP Index	Life Expectancy	Life exp. index	HDI	HDI deviation from the Croatian average
Republic of Croatia	0,8374	14364	0,8291	78,083	0,8847	0,8504	100,00
Virovitica-Podravina County	0,8265	8811	0,7475	74,107	0,8185	0,7975	93,78
Požega-Slavonia County	0,8252	8738	0,7461	76,46	0,8577	0,8097	95,21
Brod-Posavina County	0,8198	8183	0,7352	76,853	0,8642	0,8064	94,83
Osijek-Baranja County	0,8335	11507	0,7921	75,734	0,8456	0,8237	96,86
Vukovar-Srijem County	0,8124	8650	0,7444	75,8	0,8467	0,8012	94,21

Source: Authors

Osijek-Baranja County was also in 2011 the county with the highest level of human development (HDI=0.8264).

Table 7: HDI for the Republic of Croatia and Eastern Croatian counties in 2019

	Human Resources Education Index	GDP/ Pc USD	GDP Index	Life Expectancy	Life exp. index	HDI	HDI deviation from the Croatian average
Republic of Croatia	0,8536	14148	0,8265	79,808	0,9135	0,8645	100,00
Virovitica-Podravina County	0,8401	7523	0,7211	76,142	0,8524	0,8045	93,06
Požega-Slavonia County	0,8407	7633	0,7235	76,869	0,8645	0,8096	93,65
Brod-Posavina County	0,8396	7618	0,7232	77,065	0,8678	0,8102	93,72
Osijek-Baranja County	0,8417	10012	0,7688	77,246	0,8708	0,8271	95,67
Vukovar-Srijem County	0,8327	7760	0,7263	77,502	0,8750	0,8113	93,85

Source: Authors

In 2019, Osijek-Baranja County is still the county with the highest level of human development (HDI=0.8271). According to the methodology of UN, a country with an HDI value higher than 0.800 is a country with highly developed human resources. Using the same

methodology, it can be inferred that all counties of Eastern Croatia are among the counties with highly developed human resources in 2019. In 2011, Virovitica-Podravina county had an HDI value of less than 0.8 (0.7975).

Table 8: The change of the HDI 2019/2011

	Human Resources Education Index	GDP/ Pc USD	GDP Index	Life expectancy	Life exp. index	HDI
Republic of Croatia	101,93	98,50	99,69	102,21	103,25	101,66
Virovitica-Podravina County	101,65	85,38	96,47	102,75	104,14	100,88
Požega-Slavonia County	101,88	87,35	96,98	100,53	100,79	99,99
Brod-Posavina County	102,42	93,10	98,37	100,28	100,41	100,47
Osijek-Baranja County	100,98	87,01	97,06	102,00	102,98	100,41
Vukovar-Srijem County	102,50	89,71	97,57	102,25	103,35	101,27

Source: Authors

The Republic of Croatia and all Eastern Croatian counties (with the exception of a small decrease in Požega-Slavonia County) recorded a positive change in HDI. The highest increase in HDI in the period 2011-2019 was recorded in the county Vukovar-Srijem. This was mainly due to an increase in life expectancy in this county (3.35%). This also happened in Virovitica-Podravina County (4.14% increase in life expectancy). However, it should be emphasized that this positive shift is also a result of population out-migration, so that fewer living residents are included in the statistics. Therefore, the exact value of this index will only be known after the 2021 census.

The educational level of the population has increased in all counties, especially in Vukovar-Srijem County (2.5%) and Brod-Posavina County (2.42%). Unfortunately, all counties lag behind the average of the Republic of Croatia in all other components, especially in the level of income.

It can be concluded that although all counties recorded HDI growth in the analyzed period, this increase was not sufficient to reach the development dynamics of the most developed Croatian counties in the Human Development Index.

4. Conclusion

The size and characteristics of the population, i.e. demographic factors, together with economic factors, form a set of conditions, causes and effects of the process of economic growth and development. The analysis of the natural change and migration of the population in the counties Osijek-Baranja, Požega-Slavonia, Brod-Posavina, Vukovar-Srijem and Virovitica-Podravina has shown that all counties in 2019, compared to 2012 show a decrease in the population due to the higher mortality rate (as the birth rate) of the population, as well as the migration of the population from the Republic of Croatia and from the analysed counties. This refers mainly to the migration of the younger (educated) population leaving the country in search of work. These processes reduce the number of (young) working age population as a source of labour force in the future.

Life expectancy, which is one of the indicators of the quality of life and the general level of development of an area, is growing more slowly in the counties East Croatian compared to the Croatian average, from which it can be concluded that negative demographic trends influence, among other things, the growing development gap with the Republic of Croatia.

The analysis of the development of human resources in Eastern Croatian counties and in the Republic of Croatia showed that all counties have a Human Development Index above 0.800 in 2019. However, the development of human resources in Eastern Croatia had slower dynamics than the average development of human resources in Croatia, and in fact these counties recorded a development gap. The analysis of the impact of education on human resources and life expectancy has shown that it is necessary to make further investments in the development of human resources development through education policy.

The investment should be mainly directed to human resource development through education and the health system. An important role in reducing out-migration of population can also be seen in job creation and thereby increasing household income. The creation of quality jobs would certainly reduce these negative trends initially and could reverse them later.

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MEMBERSHIP IN ERM 2 – A LITERATURE REVIEW OF CROATIAN AND BULGARIAN PERSPECTIVE

ABSTRACT

Each country joining an economic and monetary union is facing a different set of benefits and risks, which is proven also by the experience of the European Economic and Monetary Union (EMU) member states. The Exchange Rate Mechanism (ERM 2) was set in 1999 and as a part of nominal convergence criteria two year participation in the ERM 2 represents the first formal step towards the adoption of the euro. Its main purposes are to ensure economic stability within the single market and help countries prepare themselves for participation in the euro area. As much this criterion is clear, on the other hand, it is considered that preconditions for joining the ERM 2 are not defined straightforwardly. Currently, ERM 2 includes the currencies of three countries: Bulgaria, Croatia and Denmark. The focus of this paper is on the Bulgaria and Croatia, as members of the ERM 2. They both joined the ERM 2 on 10 July 2020, with central parities of their currencies against the euro determined at the level considered to be consistent with the long-term equilibrium of the economy. Additionally, Bulgaria committed to continue its currency board arrangement within the ERM 2 and the Croatian kuna observes its central rate to the euro with a standard fluctuation band of ±15%. This paper examines the Bulgarian and Croatian paths to the ERM 2. The main goal of the paper is to give a literature overview of current conditions, including the path to the ERM 2 for the two observed countries, but also including the experiences of peer countries. In doing so, the contribution of the paper is threefold. First, it gives an overview of the main features of ERM 2 functioning and the role of the ERM 2. Second, it provides summary of the experiences from previous and potential ERM 2 memberships and thirdly, it enables understanding possible effects for these two countries which help policymakers to develop approaches for improving performance in the ERM 2, as well as in the process of euro adoption. Additionally, the influence of COVID-19 crisis is taken into consideration. Finally, one might conclude that a path towards Eurozone is unique for every country, both in terms of internal and external factors.

Keyword*s*: *Exchange Rate Mechanism 2, Croatia, Bulgaria, euro, COVID-19.*

1. Introduction

The beginning of transition in former centrally – planned economies was marked with the ambitions of becoming a member of European Union (EU) and, in the next stage, the Eurozone. Few decades later the opinion in part of the observed countries is different (postponing the Eurozone membership), some of the countries became Eurozone members, while two of them, Bulgaria and Croatia, entered the Exchange Rate Mechanism 2 with clear objective to adopt the euro after at least two years. After the challenges that both the Eurozone and European Union (including the non-EU members) experienced during the Great recession, there are different, more cautious views on the euro adoption. The process of euro adoption is a result of long lasting preparation with many demands and criteria, in order to make a country able to integrate into the European market and abandon national monetary policy. Postponing of euro introduction is especially strong in countries that during the crisis actively used their exchange rate policies so might be unwilling to give up their independence. Those with more rigid regimes, especially if they have high levels of (unofficial) euroization have move forward on that path.

The final part of euro integration process is membership in Exchange Rate Mechanism 2 (ERM 2) that immediately precedes the euro adoption. Although it is an obligatory phase, each member of European Union voluntary makes a decision when to join.

Currently, ERM 2 includes the currencies of three countries: Bulgaria, Croatia and Denmark. Denmark participates in the ERM 2 from the beginning. The focus of this paper is on the Bulgaria and Croatia, which both joined the ERM 2 on 10 July 2020, with central parities of their currencies against the euro determined at the level considered to be consistent with the long-term equilibrium of the economy. That is why, the focus of this paper is the analyses of their path towards ERM 2, based primary on overview of literary contributions. Besides from the existing facts, we also need to consider the consequences of COVID-19 pandemics that might influence the process of Eurozone entrance in a way that is rather hard to predict at this moment.

Despite the possible fluctuation band of +/-15%, Bulgaria committed to continue its currency board arrangement within the ERM 2 with central rate of 1 EUR= 1.95583 BGN. Croatian official exchange rate regime remained managed floating while central rate to euro within ERM 2 is 1 EUR = 7.53450 HRK.

The latest European Monetary Union (EMU) candidates, Bulgaria and Croatia opened a new course in their relations with the single currency market. Although members of European union, Poland, Hungary and Czech Republic yet do not show an interest in entering the ERM 2 and euro adoption. This can be partly explained with their more active use of exchange rate policies during the crisis, while the policies of Croatia and Bulgaria were more rigid, especially in case of Bulgarian currency board arrangement.

An old/new direction in discussions on the euro adoption includes pros and cons of the policy change, while experiences of other countries that previously joined the Eurozone might be valuable. Although in the earlier phases of transition, before the Global recession, Eurozone membership was a final goal for EU members, crisis experiences with single currencies and a common monetary policy put a new shed on the process.

Special accent is put on the convergence of countries preparing to join monetary unions due to the fact these would not be able to pursue their own autonomous monetary policies any more, but common monetary policy is conducted. There are many views on preconditions of the success of the monetary unions, mainly discussed within theory of optimum currency areas. Most of these views reflect the need for economic convergence among countries forming the monetary union.

European Central Bank as central institution of the EMU, responsible for the monetary policy, put a lot of effort into completion of the banking union, as well as capital markets union (European Central Bank, 2019). Strengthening of the capital markets union is going to facilitate the transmission of the monetary policy and strengthen the international role of the euro.

Stability of exchange rates is considered to be one of the main features of stabile and prosper economy overall. This is the reason why Maastricht Treaty from 1991 includes stability of exchange rate as one out of four convergence criteria for adopting euro, or, in other words, acceding European Economic and Monetary Union (in further text: EMU). For this reason, the Exchange Rate Mechanism 2 was set in 1999. Its main purposes are to ensure economic stability within the single market and help countries prepare themselves for participation in the euro area.

The other three convergence criteria regulated by Maastricht Treaty include: price stability measured by harmonised consumer price inflation, sound and sustainable public finances measured by government deficit and debt and durability of convergence, measured by long-term interest rates. The Maastricht Treaty makes the adoption of the single currency mandatory for all current and future EU Member States, except Denmark. The main focus of the paper is on the exchange rate stability criterion, measured by the exchange rate developments in the ERM 2. This convergence criterion, according to the EU legislation framework implies participation in ERM 2 for at least 2 years without severe tensions for acceding countries, in particular without devaluing against the euro. As Michalczyk (2011) stated, in practice it represents obligation of the country to join ERM 2 before joining the EMU for at least 2 years' period and to maintain during this period the stable exchange rate of own currency within appointed bands, which are generally, ±15% in relation to a fixed central rate. Interestingly, some countries unilaterally adopted more strict bands for exchange rate fluctuations within the ERM 2.

The agreement on the central parity in the ERM 2 involves a mutual agreement between the European Central Bank, the European Commission, the euro system central banks and the national central bank and government (Kozamernik, 2004).

This paper examines the Bulgarian and Croatian paths to the ERM 2, focusing on the theoretical background of the process. That is why we provide a detailed literature of the process so far. It also gives an overview of the main features of ERM 2 functioning and the role of the ERM 2, as well as provides summary of the experiences from previous and potential ERM 2 memberships and it enables understanding possible effects for these two countries which help policymakers to develop approaches for improving performance in the ERM 2, as well as in the process of euro adoption. Additionally, the influence of COVID-19 crisis is taken into consideration, although it is hard to predict the final effects of this crisis.

The paper is organized as follows. After the introduction, theoretical background and brief literature review is presented in the second part. An analyses of exchange rate policies in Bulgaria and Croatia is given in part three. Conclusion is presented in the last, fourth part of the paper.

2. Theoretical background and literature review

Analyses provided in the paper contributes to the literature in terms of analysis and comparison between the two countries and the Eurozone, questioning the readiness for their membership in terms of convergence to the common market. Furthermore, there are experiences from other countries and their accession processes, including also the necessary adjustments in different areas of economy. The main question is whether the country is ready to abandon the national exchange rate policy. In other words, whether the criterions of not just nominal but also real convergence are satisfied. Although, one need to consider rather restrictive monetary and exchange rate policies of countries in the sample and modest use of instruments of monetary policy. Furthermore, Bulgaria obtained currency board arrangement (since 1997) based on deutsche mark/euro, while Croatia, besides the exchange rate anchor to the euro (IMF, 2020:7), also has a high level of unofficial euroisation.

It is already stated that ERM 2 was set in 1999 and that the most literature finds that preconditions for joining the ERM 2 are not defined straightforwardly. Of course, not only the entrance into the ERM 2 system implies fulfilment of the exchange rate convergence criterion, but it is crucial to avoid devaluation and tensions.

The Maastricht Treaty or any other EU legislative does not prescribe specific timeline for adopting euro (Dentons, 2020). In other words, a country voluntary decides on its strategy and the timeline for ERM 2 membership. Surely, this makes the decision on ERM 2 entrance even harder, causing many debates on pros and cons of having a common currency and *one-size-all* monetary policy in a final stage.

One of the most important functions of the ERM 2 is to test appointed central rate and to correct it if needed (Michalczyk, 2011). Michalczyk (2011) found that legal provisions on the ERM 2 criterion allows subjectivity in assessing its fulfilment by member countries. Although, devaluation is forbidden, European Commission formally declared appreciation as consistent with formal rules. Besides, exchange rate fluctuations need to stay within a set range for the period of at least two years (Allinger, 2018). In fact, as Allinger (2018) states, the agreed central rate becomes irrevocable exchange rate for the conversion in euro. So, for countries joining the ERM 2, the level of central rate is of great importance, as well as the importance of nominal exchange rate as an adjustment mechanism.

Ćorić and Deskar-Škrbić (2017) pointed out that ERM 2 served as an important policy credibility anchor on the cases of Slovenia and Slovakia. Also, entrance into ERM 2 can motivate countries to pursue policies in a manner to fasten euro adoption.

Komárek et al. (2003) found ERM 2 of little help to countries in ensuring exchange rate stability. They also point out that countries should be aware of real exchange rate path prior to joining ERM 2 in order to avoid potential costs.

Orlowski and Rybinski (2006) saw no conflict between participating in the ERM 2 and pursuing direct inflation targeting. Also they pointed out that suboptimal reference rate in the ERM 2 can have numerous policy consequences. For these purposes they suggested a gradual transition from the direct inflation targeting policy to the ERM 2 in Poland.

Redo (2017) analysed the characteristics of the ERM 2, countries experiences, with special focus on the case of Poland. Redo (2017) pointed out that participation in the ERM 2 does not obligate countries to join the Eurozone, but enables countries to have a floating exchange rate regime, as well as guarantees help from the European Central Bank, so desirable credibility and economic stability still can be achieved. Taking into consideration these reasons, she found entering ERM 2 for Poland very reasonable decision, among others, as a test of capability of Polish economy to deal with the crisis at the defined central rate to the euro. Redo (2017) considers entering ERM 2 prior the euro adoption allows countries to even adjust the central rate, and if they enter the ERM 2 just before the euro adoption this would not be due to the time pressure and the need to meet exchange rate criteria.

Kozamernik (2004) in the analysis of the Slovenian approach towards ERM 2 found that the optimal option for the European Union new member states is to take certain time after entering the EU to join the ERM 2. Several reasons are mentioned. The most important risk of the early entrance into ERM 2 is a possible demand boom from the entrance in the European Union and consequent inflationary pressures. It is also pointed out that the risk of the ERM 2 is not only a non-compliance with the Maastricht criteria, but possible attack on the currency with potentially negative effects on the real economy, even in the situation when sound macroeconomic policy mix is implemented. Lavrač (2010) took into consideration at that time ongoing global financial crisis and its impact on the ERM 2 as well as enlargement of the Eurozone, putting special focus on the Slovenian case. He found that ongoing crisis put additional pressure on countries which are about to bring strategies for adopting euro, with special emphasis on optimal timing of entering the ERM 2. He pointed out that such crisis makes difficult for countries to fulfil the Maastricht criteria.

Papaspyrou (2004) considers ERM 2 as a mechanism helping to achieve convergence and ERM 2 rules to be flexible enough for different exchange rate regimes of the acceding countries. Also, the author points out the timing of the entry into ERM 2 as crucial for convergence process. This timing depends largely upon convergence and structural reform status of the acceding country. Interestingly, joining the ERM 2 has been considered to be a starting point of the process of economic and political integration in the region and particularly their integration in EU (Bishev, 1999).

Dan (2019) researches real and structural convergence on the example of Romania, Bulgaria and Croatia using four indicators that include the capacity to catch up, specialization, synchronization of business cycle and current account structure. The analyses has shown significant differences between real convergence, measured in terms of GDP per capita, with lowest level for Bulgaria (46.2% of EZ19 in 2017), while Croatia has a better score (58.5% of EZ19 in 2017). However, the author concluded that the observed countries might adopt to the common policy of ECB.

Since the Eurozone enlargement is a gradual process, experiences from other countries are valuable sources. In that manner, Čehulić and Hrbić (2019) discuss the experiences of other countries in the context of euro adoption and the lessons that might be withdrawn for Croatia, on a sample of peripheral countries. Their research has found that the raise of costs should be

expected as a negative effect, while administrative procedures should be reformed, so the resources and finances of EU can be used, both with the capital inflows. Finally, the authors assumed positive effects in short-term, while longer-term effects are harder to predict and will depend on future economic development.

Darvas (2019) researched the readiness of central European countries for euro adoption and points out that during the Great recession both countries with fixed and flexible exchange rates experienced problems in macroeconomic performance. Some of those with fixed regimes (Bulgaria) or members of Eurozone (Slovakia) performed similarly to those with flexible regimes, although the latter have depreciated their exchange rates (Czech Republic, Romania, Hungary). Bulgaria resolved the problem of current account deficit as a share of GDP, but on a cost of the fall on the employment rate. Still, in the following period the employment rate recovered. Furthermore, comparing Bulgaria's export market with countries with flexible exchange rates it performed better, leading the author to a conclusion that the nominal exchange rate depreciation does not necessarily leads to the better economic performance. On the other hand, Croatia till 2014 had modest macroeconomic development, arising from structural weaknesses. Still, in recent years the economic performance improved, with stronger growth and current-account balance surplus. Finally, the author warns on the possible lack of discipline in Croatia and Bulgaria, once they enter the Eurozone, such has been observed in the past. For other EU countries with derogation, the author expressed an opinion that the euro adoption is more a political than the economic choice.

Important aspect of euro adoption, besides the quantitative analyses, also are the qualitative indicators, more precisely attitudes towards the euro adoption, that is researched in Backé and Beckmann (2020).Using the data from OeNB Survey in time span 2007-2019 based on individual opinions in ten Central, Eastern and South eastern European countries (EU and non-EU members) the authors researched expectations on euro adoption, considering the euro accession framework, monetary policy regimes and de facto euroization. Results have shown growing uncertainty on euro adoption and decreasing optimism. On the contrary, expectations on euro introduction are more optimistic in those countries with higher levels of de facto euroization, while expectations on inflation or depreciation (of the local currency) resulted in more pessimistic expectations. Finally, as factors that form euro adoption expectations the authors withdraw the strategies of de-euroization, monetary expectations and communication strategies as well as quality information. Still, they also highlight the differences between the countries that need to be taken into consideration when forming future policies.

Last, but not least, occurrence of the COVID-19 crisis represents one of the factors putting euro to the test (Dentons, 2020).

3. Exchange rate policies and paths to the ERM 2 in Bulgaria and Croatia

Eurozone consists of 19 Member States using the euro as their common currency and also, since 2014, taking part in the Banking Union (Dentons, 2020).

Time spent in the ERM 2 before entering the Eurozone differs among countries, as shown in Table 1. For example, Slovenia, Estonia and Lithuania entered the ERM 2 on the same date, but time spent within ERM 2 differs significantly – Slovenia spent in ERM 2 2.5 years, Estonia 6.5 years and Lithuania 10.5 years.

Table 1: Time spent in the ERM 2 before entering the Eurozone – new member states

Country	ERM 2 entry date	Eurozone entry date	Time spent in ERM 2
Slovenia	28.6.2004	1.1.2007	2.5 years
Estonia	28.6.2004	1.1.2011	6.5 years
Lithuania	28.6.2004	1.1.2015	10.5 years
Cyprus	2.5.2005	1.1.2008	>2.5 years
Malta	2.5.2005	1.1.2008	>2.5 years
Latvia	2.5.2005	1.1.2014	8.5 years
Slovakia	28.11.2005	1.1.2009	>3 years

Source: Redo (2017), p. 33.

It is considered that Bulgaria and Croatia are quicker in adopting euro and joining Banking Union than some other EU countries due to the fact that their main trading partners are within Eurozone and domestic banking sectors are dominated by Eurozone-headquartered banks (Dentons, 2020). Bulgaria and Croatia would not be represented in the ECB Governing Council, so on one side they have engagement to obey to the rules and provisions, but on the other hand, little or no influence on the ECB decisions (Dentons, 2020).

In light of the COVID-19 crisis, and as one of the arguments in favour of adopting euro, usually it is stressed the fact that, not being part of the Eurozone would mean that Bulgaria and Croatia would not have access to the ECB's extraordinary support measures, including the €1,350 billion Pandemic Emergency Purchase Programme or any other potential recovery measures introduced by the ECB.

One more argument in favour is improving supervision activities. Namely, according to Dentons (2020) Bulgarian/Croatian national competent authorities currently do not perform annual stress tests nor carry on-site and off-site supervision activities that can be compared to the ones and supervisory outcomes have rarely been communicated in ECB-comparable form.

Tokarski and Funk (2019) argue that Brexit will have effects on the Eurozone and the EU, despite the United Kingdom never adopted the euro. From their point of view, Brexit introduced fear in the group of eight countries which have not yet adopted the euro of their diminishing influence in the decision making processes on the level of the regional integration. In this group are Bulgaria and Croatia, of course, and Denmark, Poland, Romania, Sweden, the Czech Republic and Hungary. It is rather heterogeneous group of countries, of different levels of development, sizes and stability levels. Authors argue that Brexit represents a political power shift within the EU, for these countries. Namely, for some states and group of states Brexit will increase their voting power in the Council of the EU. According to Tokarski and Funk (2019), around 80% of the legislation that the Council has to ratify is subject to a system of double qualified majority voting. By removing of the United Kingdom and its population from this system population share of the Eurozone members' increases and EU19 countries represent around 70.4% of member states and 76.5% of total population. Of course, this shift of voting power will not be of such a great importance if the Council maintains tendency to bring decisions by consensus. Also, the United Kingdom strength occurred not only in formal decision making processes, but with informal influence too.

Maastricht criteria and current data for Bulgaria and Croatia are shown in Table 2.

Table 2: The Maastricht criteria – Bulgaria and Croatia

	Croatia		Bulgaria	
Exchange rate (visà-vis euro)	7.53450 HRK		1.95583 BGN	
	2019	**2020***	**2019**	**2020***
Price stability: HICP (%)	0.8	0.4	2.5	1.1
General government balance (% GDP)	0.4	-7.1	2.1	-2.8
General government debt (% GDP)	73.2	88.6	20.4	25.5
Long-term interest rate (%)	1.3	/	0.4	/

*projection
Source: European central Bank (2020)

Worsening in the projected data should not come as a surprise, keeping in mind the economic crisis caused by COVID-19 virus and the influence that it had on the economy. Still, the observed countries have previously been oriented towards keeping the exchange rate stability, so it is not likely to expect a strong shifts in the existing policy.

3.1. Bulgaria

As previously mentioned, one of the basic characteristics of Bulgarian monetary and exchange rate system in the period before joining the ERM 2 is the commitment of Bulgarian National Bank (BNB) to a currency board arrangement. Classified as a hard peg regime (IMF, 2020:7) it is a form of a strong commitment to the exchange rate rule, with national currency fully covered with foreign exchange reserves (in this case in euro) and practically without allowed fluctuation margin. In such cases monetary and exchange rate policy are primary oriented towards stabilisation so it is hard to expect more active policy within the ERM 2 margin of +/-15%.

In earlier literature, Ivanova (2016) discussed Bulgaria's pre-accession to the Eurozone in terms of both criteria fulfilment, including the national characteristics, and the retaining of currency board arrangement until euro adoption. Prior to the Eurozone entrance, the author concludes, country needed to improve real convergence in terms of overall price levels, GDP per capita and macroeconomic indicators. Also, the trust in the banking sector was rather low after the 2014 and needed to be restored, including also stress tests as a prerequisite for entering a banking union.

In later research, Kirova (2020) analysed the results obtained in terms of real convergence in Bulgaria during 1999-2018. The comparison has been made with six countries with derogation, using sigma-convergence method in order to examine the disparities in real GDP per capita. Despite the strong growth observed in Bulgaria, the income gap with the EU and euro area averages is still significant. This might be a reason for concern in terms of Eurozone membership.

Gechev et al. (2020) analyse the effects that are expected after the euro introduction in Bulgaria, relying on the experiences of the countries that previously became Eurozone members. Besides highlighting the main challenges for the EU members still outside the Eurozone (such are heterogeneous national policies, differences in fiscal policies etc.), authors also give recommendations to monetary authorities in order to better adjust to the Eurozone membership.

Still, as a member of European Union since January 1ˢᵗ 2007, Bulgaria has put significant efforts in fulfilling the Maastricht criteria of nominal convergence, but also those of real convergence. Bulgarian lower level of prices implies the possibility of inflation in the process of long-terms convergence of prices, which might put additional pressure on this Maastricht criterion (Dentons, 2020).

3.2. Croatia

Croatia is a small, open economy that is highly euroized (Benazić and Kersan-Škabić, 2016) and the development of monetary policy has taken place in the situation of war and establishment of a new country, as well as under transition process, which makes it rather unique case (Kraft, 2003). The formation of the monetary system in the Republic of Croatia is divided into two phases: 1991-1994 and 1994 until today (Brekalo and Palić, 2013). In the first phase, there are two important events: (1) establishment of the Croatian National Bank and (2) issuing first monetary act by the Government of the Republic of Croatia in October 1991 (Official gazette, 1991). Second phase began with introducing Kuna as the Croatian national currency, until the accession of the Republic of Croatia to the Eurozone (Brekalo and Palić, 2013). Croatia has applied a fixed regime toward the Deutsche mark from 1991 to 1993, and a regime of (managed) floating from September 1993 until now (Benazić and Kersan-Škabić, 2016). Croatian National Bank (CNB) changed its official policy from a free floating to a managed floating exchange rate regime. Mance et al. (2015) found politically reasonable for Croatian National Bank to change the official policy from free float to managed float, respective to the desire to join the European Economic and Monetary Union.

Monetary policy in Croatia, since independence, has been oriented towards achieving price stability goal, based on the exchange rate rule. Interestingly, the Kuna was pegged to the German mark until 1999, and subsequently pegged to the euro. Although officially defined as managed floating, it had rather narrow margins so it was closer to soft pegged regimes, while the monetary policy has been defined with the euro anchor and high level of euroization. Furthermore, the national currency has been appreciated with narrow margins of fluctuation (narrower than +/- 15% that is allowed within the ERM 2). Such an exchange rate policy is successful in lowering inflation and achieving the goal of price stability, but some authors (Benazić and Kersan-Škabić, 2016) point out that in a long run may reduce competitiveness due to appreciation of the national currency.

Allinger (2018) states that Croatia represents a special case given its exchange rate regime since historical above mentioned pegging. It implies two possible conclusions: (1) probable lower costs from losing independency of the monetary policy and (2) limitations of the nominal exchange rate as and adjustment mechanism for real exchange misalignments (Allinger, 2018). Comparative cost of introducing euro in Croatia is considered to be lower than in flexible exchange rate economies (Allinger, 2018).

During the period before the ERM 2 entrance in 2020 there have been numerous discussions on the cost and benefits of such process. Koyama (2016), after analysing the Croatian policy since independence, concludes that a country is vulnerable to external shocks, advising a shift of monetary policy to a more flexible regime. Also, additional efforts should be done in terms of industrial policy.

Allinger (2018) analysed studies on exchange rate misalignments in Croatia in the last two decades, and concluded that these analyses in case of Croatia are rather scarce, and existing

researches use often different methodologies, so it makes difficult comparisons. However, most of these studies found a mild or strong overvaluation, and only one undervaluation. One of the mentioned relevant studies is the one from the International Monetary Fund (2018) which found mild overvaluation of the real effective exchange rate, but exchange rate in line with medium-term fundamentals.

Ćorić and Deskar-Škrbić (2017) concluded that Croatia could have benefits from euro adoption due to the following facts: high levels of the trade with the Eurozone countries, high level of eurisation and limited monetary policy in Croatia. As most beneficial from euro adoption they consider reduction of foreign exchange risk due to high explosion to this risk of all sectors.

Strategy for the Adoption of the Euro in Croatia (2018) adopted by Croatian Government perceives higher benefits than costs of the euro adoption.

Some of the authors (Lavrač, 2010), took into consideration global crisis for achieving convergence and functioning in the ERM 2. From this perspective, it is important to point out that Croatia enjoyed a period of modest, but sustained economic growth in comparison to Eastern European peers before the global economic crisis in 2008 (World Bank, 2018). During and after the mentioned global financial crisis, Croatia underperformed these countries since it faced longer recession period than most of the peer countries (World Bank, 2018). For example, according to Falck and Schönherr (2016) relative to the 37 most important trading partners, Croatia has only improved its competitiveness by 7% since the onset of the crisis, while it had appreciated in real terms by 23% since 2000. However, according to Palić et al. (2018) depreciation of Kuna is not recommended taking into consideration empirical characteristics of Croatian economy, especially current state of public finance in Croatia and highly euroized financial system. Therefore, authors argue current exchange rate policy is suitable.

In the Convergence Programme of the Republic of Croatia for the period 2019-2022 Croatia committed itself to a medium-term budgetary objective of -1.0% of GDP, in line with the more restrictive constraints within the ERM 2. By this Programme, Croatian government decided to focus on the following: (1) high-quality investments, (2) effective structural reforms and (3) macroeconomic stability and sustainable public finances. Also, the Programme defined, among others, introduction of the euro as a national currency, as one of the key strategic goals of the Government of the Republic of Croatia.

Goals set to be achieved by the Programme are rather ambitious. Besides general COVID-19 crisis, devastating earthquakes in Croatia, dated in 2020 and 2021 put even more challenge to the path of adopting euro and functioning in the ERM 2. Severe economic damage will definitely put additional pressure on Maastricht criteria, especially debt-to-GDP ratio and overshooting GDP deficit. So, Croatian Government plan to introduce the euro in 2023, which is also the earliest possible date for euro adoption, is likely to happen later, mainly due to the excessive public debt as a consequence of the above mentioned circumstances.

According to Kotarski (2019), successful euro adoption requires keeping fiscal policy in an anti-cyclical mode over the entire business cycle. Besides this, Kotarski (2019) points out the necessity of public debates and continuous dialogue between policy makers and citizens on the benefits and costs of adopting the euro, since present fear of the unknown in Croatia. So far, the adoption of the euro is supported by the majority of Croatian society (Żornaczuk,

2020). According to an Ipsos (2020) poll from March 2020, 41% of the respondents were in favour of it. Adoption of the euro was supported conditionally by a further 31% for whom the most important criterion is to maintain or improve the standard of living. Only 18% of the Croatian population opposed the introduction of the euro. In 2019, with more straightforward question, 51.7% favoured adopting the euro contrasted with 40.4% against (Żornaczuk, 2020). Mance et al. (2019) concluded in their research that Kuna is only the domestic currency of Croatia, and the euro is its true money. In other words, Kuna serves the function of a medium of exchange but only partly serves as a measure of value.

Żornaczuk (2020) points out that political difficulties in the process of Croatia joining the euro area are unlikely, since main political parties are in favour of this path.

4. Conclusion

The final stage of the euro introduction process, entering the ERM 2, is obligatory, but timely set on a voluntary basis for EU members. The focus is on two latest members, Croatia and Bulgaria, considering also the experiences of other countries. Surely, the process of abandoning the national monetary policy and joining the Eurozone is a demanding multidimensional task that includes not only economic, but also political, social, psychological and other dimensions. The main goal of this paper was to describe and analyse theoretical framework of euro adoption and give contribution in that field, while it is rather hard to predict the future developments, primary in terms of changes caused by COVID-19 crisis that has significantly changed the perspective of fulfilling the criteria and EMU entrance. In that sense we relied both on the experiences of observed countries, but also on those that are already members.

Joining ERM 2 implies also a change in the supervisory and resolution framework of the countries. In that sense the countries introduced new procedures in conducting the monetary policy, banking system supervision, etc. Giving up national monetary and exchange rate independence is not an easy decision and, apart from the long period of preparation, the country should be ready for common market both in terms of nominal and real convergence.

The attitudes towards the Eurozone membership changed during the time of transition, partly as a result of the national economic development but also from the experiences of exchange policy use during the Great recession. That is why some countries postponed their membership in Eurozone, opting for a more active exchange rate policy in order to use it as an instrument of support for national policy. On the other hand, observed countries used additional emergency funds, such was the precautionary currency agreement (swap line) to provide liquidity in euro in exchange for national currency between CNB and ECB, and also the BNB and ECB during the COVID-19 crisis.

We have seen that time spent in the ERM 2 varies from country to country, depending on the level of convergence, country specific situation and potential readiness in different fields. For example, public support will be one of the very important factors in adopting euro when the time comes, so continuous debates about the advantages and disadvantages of the euro adoption are absolutely necessary. In other words, although Bulgaria and Croatia entered the same date in the ERM 2, time spent in the ERM 2 could differ significantly.

The exchange regime of Bulgaria shall stay committed to the currency board arrangement, so the policy would not experience any significant shifts.

From the Croatian point of view, the current prospects of the Croatian economy are favourable for an entry into the ERM 2 and it is expected benefits exceed the costs of adopting the euro. However, indicated plan of euro adoption in 2023, the earliest possible date, is very ambitious due to the COVID-19 and earthquakes challenges and economic impacts. For further research, it is important to identify exchange rate determinants, not only for the successful functioning in the ERM 2, but for the prospective introduction of the euro. Namely, the euro represents a potential source of economic strength and a political commitment to converge more over time.

This research of course has some limitations. In terms of crisis it is hard to predict the future, although there are some procedures and requirements, such are Maasricht Threaty convergence criteria. That is why we oriented on the existing experiences, with emphasises both on experiences of other countries but also of those two observed in an attempt to describe the pros and cons of Eurozone membership.

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A scientific paper

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THE INTERACTION OF REAL EXCHANGE RATE AND FDI SECTORAL STRUCTURE IN CROATIA

ABSTRACT

The aim of this paper is to analyze the theoretical and empirical interaction between real exchange rate and the FDI sectoral structure in Croatia. Specifically, research to date has highlighted the generally more significant impact of FDI inflows on economic growth in the manufacturing sector, due to spillover effects, than in the service sector. Previous research has shown that total FDI inflow in Croatia has a statistically insignificant effect on economic growth, while economic growth has a statistically significant effect on FDI inflow, primarily in the service sector. The assumed direction of influence is explained as follows: in the situation of liberalization of the capital flows, the FDI sectoral structure in Croatia is determined, inter alia, by movements in the real exchange rate of the domestic currency. The real exchange rate appreciation in the middle-income countries increases import-oriented consumption and thus attracts mainly FDI to the service sector with little, or even negative impact on economic growth. Based on theoretical insights, empirical analysis was conducted using VAR analysis on quarterly data from Q1/2000 - Q3/2020. Analysis confirmed the assumed relationship that appreciation of the real exchange rate had a positive and more prolonged effect on FDI inflows into the service sector than into manufacturing sector, while the impact of the FDI inflows in the service and manufacturing sector on the GDP growth rate is mostly negative.

Keywords: real exchange rate, FDI sectoral structure, VAR model, Croatia.

1. Introduction and theoretical underpinnings

This paper theoretically explains and empirically tests the relationship between the real effective exchange rate (REER) and the FDI inflows sectoral structure. Research to date has mainly focused on the relation of FDI total inflows and GDP growth rate, but also the real effective exchange rate and GDP growth rate. Research has mainly observed a weak or even negative impact of FDI inflows on economic growth in a sample of CEE countries (e.g. Mencinger, 2003., 2008.). The author mainly sees the reason for this in the absence of spillover effects of investments on the economy of the recipient country due to FDI sectoral structure.

The second group of research is mainly based on the relationship between real exchange rate movement and economic growth, with research providing ambivalent conclusions. For example, Rodrik (2008) was the first to systematically and comprehensively explain the relationship between depreciated real exchange rates and economic growth in developing countries. According to Rodrik, a depreciated real exchange rate stimulates growth only in developing countries that need an influx of technology and an export-based growth and ceases to be valid when developed countries are added to the sample. A study on the impact of the real exchange rate on economic growth in a sample of European transition countries was conducted by Begović and Kreso (2017) in the period from 2000 to 2015. More precisely, they study the relationship between the real exchange rate movement and its impact on the trade balance of these countries. European countries have mostly had (or still have) relatively fixed nominal exchange rates and therefore cannot use it as a trade balance adjustment policy. Even if they had this option, it would only work in the short term, in import-oriented economies. Research has shown that a depreciated real exchange rate has a negative effect on countries' trade balances due to countries' import dependence or insufficient export capacity.

Regarding Croatia-oriented research, several studies are relevant. Palić, et. al. (2014) observe whether there is a deviation (misalignment) of real exchange rate in Croatia from its equilibrium level for the period 1998-2014. The research showed that the annual deviations are relatively small, so no significant effects of the real exchange rate on growth can be seen. In that period, the real exchange rate was appreciated four times and depreciated three times. Deskar Škrbić (2017) came to the same conclusion regarding the movement of the real exchange rate for the period 2002-2016.

Svilokos and Šuman Tolić (2014) investigated the real mismatch of the Croatian kuna and economic growth in the period 2000-2013, via Granger causality test. The test results show the existence of causality from the variable of real exchange rate to the GDP movement variable. However, when the time period is divided into the period before and after the financial crisis, no causality is observed in either direction. The results are a consequence of a relatively short period of observation and the fact that the real exchange rate of Croatia does not record significant fluctuations that would affect the movement of GDP.

The relationship between the GDP growth rate and the total FDI inflows was analyzed on the example of Croatia by Čičak and Sorić (2015.), Dritsaki and Stiakakis (2014.), Bilas, 2019. where none of the mentioned researches explicitly analyze the relationship between the FDI sectoral structure of and the real exchange rate or GDP growth rate.

Therefore, the aim of this paper is primarily to explain the transmission channel and the strength of the mutual influence of the mentioned variables and to explain the results in a suitable theoretical framework. Following the theoretical insights, the paper uses the variable of the real effective exchange rate index, the FDI inflows in the service and manufacturing sector, GDP growth rate and the trade balance (in % of GDP).

Thus, the basic thesis of the paper is that the weak impact of FDI on economic growth in Croatia can be explained by the prevailing inflow of investment in the service sector, considering real exchange rate. This is a consequence of the growth model based on capital inflows and growing domestic absorption (which is visible through the negative trade balance) and is accompanied by the real exchange rate appreciation and explained by the concept of the so-called "Dutch disease". Empirical analysis was performed with the aim of considering the dynamic interrelationships of the above-mentioned variables using two VAR models. The goal of the VAR model is to look at the reaction and duration of other variables in the model through the impulse response functions based on the shock of the selected variable in the model. Using the reduced form of the VAR model in this paper, it is concluded that the impact of the real effective exchange rate variable has a stronger and longer-lasting impact on investment inflows into the service sector than into the manufacturing sector. Also VAR model showed that the impact of

the FDI inflows in the service and manufacturing sector on the GDP growth rate is mostly negative. The analysis showed that the impact of the shock of the FDI inflows into the service sector has a continuous negative impact on the GDP growth rate. Also, the persistent negative effect of the real exchange rate appreciation and the GDP growth rate on the trade balance is noticeable. It is clear that the FDI in the service sector does not necessarily lead to an improvement in the country's trade balance. In the case of FDI inflows into the manufacturing sector, the predominantly negative impact of the real exchange rate shock on the FDI in manufacturing sector is noticeable, as well as the negative impact of real exchange rate depreciation on GDP growth rate.

The second part provides a brief overview of the literature and an explanation of the theoretical framework of the work, as well as the characteristics of the sectoral structure of FDI and Croatia. The third part of the paper presents the results of the VAR model, while the final chapter summarizes the results of the analysis.

2. Theoretical framework and transmission mechanism

In the context of joining the Eurozone (i.e. the European Union), most post-transition countries have encountered growing capital inflows. Capital inflows, especially debt and portfolio, have increased absorption in the recipient country, wages and prices. The appreciation of real exchange rate stimulated a negative trade balance, which also slightly directed foreign direct investment towards the service sector, especially tourism and construction before the crisis. Due to the lack of stronger spillover effects, FDI in the service sector had a weak effect on GDP growth, thus closing the circle of influence (Ehnts, 2016., Ivanov, 2015.).

The above can be explained by the so-called inverse Balassa-Samuelson effect. The standard formulation of the Balassa-Samuelson theorem (effect) assumes that due to increase in international competition, there is also an increase in productivity in the tradable sector and a consequent increase in prices and wages in that sector. It is important to note that unfavorable movements in the real exchange rate may occur due to the reverse sequence. Namely, if the foreign capital inflows, as a driver of productivity growth in a particular sector, are focused on goods and services in the non-tradable sector then due to wage increases (wage increases do not have to be accompanied by productivity increases which only deepen the negative effects) and prices of those services and goods that are not subject to international exchange, this may lead to an appreciation of the real exchange rate[1].

The above summarized theoretical framework of the impact of investment inflows can also be applied to the example of Croatia. Namely, in the pre-crisis period (before 2008.), and partly encouraged by the EU accession process, Croatia recorded FDI inflows in all sectors, especially in the service sector. The chart below shows that.

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[1] Belke et. al. (2018.), Gubler and Sax (2017.), Kutasi (2013.)

Graph 1: Percentages of sectoral FDI in total FDI inflows, Q1/2000 - Q3/2020
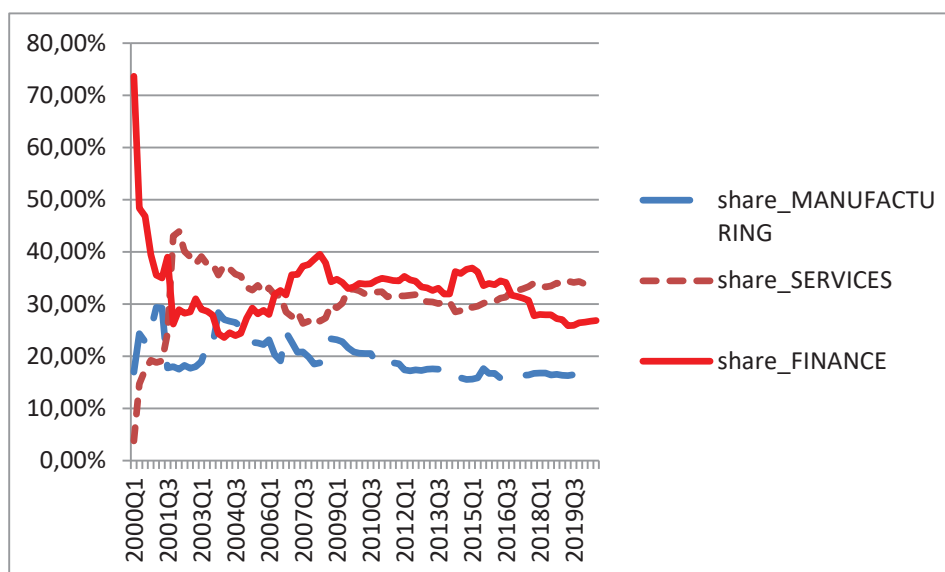
Source: CNB, FDI database

The graph shows that, except for the very beginning of the 2000s, throughout the observed period there was a constant decline in the share of processing FDI in total foreign direct investment in Croatia, with this share literally halved, from the initial 30 percent at the beginning of the observed period to only 15 percent at the end of 2020. The share of service and financial FDI, on the other hand, increased slightly throughout the observed period, ie remained at the level of 30-35 percent of the share in the total inflow of FDI.

As a result of abundant inflows of foreign capital, larger amounts of money in circulation, lower interest rates and growth in domestic demand, price effects were created in all other domestic sectors (especially in the non-tradable sector and the public sector), which allowed the growth of average wages (increased unit labor costs) and, in addition to the effects of the real appreciation of the Croatian kuna, further reduced the competitiveness of exports and the possibility of expansion in other industries (Ivanov, 2015). As can be seen in Graph 1, the FDI inflows in Croatia considered by sectoral structure, led to the reallocation of resources from the manufacturing to service sectors, leading to neglect of technological development, investment and employment in higher value-added industries (Ivanov, 2015). Seen from today's perspective, this is a kind of phenomenon that Neary and Corden (1982) called "Dutch disease", and is related to various negative effects of sudden expansion in one fast-growing sector, which attracts foreign investment causes a number of adverse effects on other sectors, including the effects of the appreciation of the domestic currency and negative trade balance. Thus, Magud and Sosa (2010) in their research conclude that the notion of "Dutch disease" is closely related to the achievement of positive economic growth rates indirectly through the movement of the real effective exchange rate. Namely, the authors come to the conclusion that the „Dutch disease" as an economic phenomenon really exists and by influencing the reallocation of resources among sectors of the national economy leads to a reduction in investment in manufacturing sector at the expense of increased investment in other sectors. Furthermore, the authors also conclude that the deviation of the real exchange rate from its equilibrium level due to appreciation has a negative impact on economic growth, while the impact of real exchange rate depreciation on economic growth is doubtful.

In conclusion, the chart below shows the movement of the real effective exchange rate index as well as the movement of the real effective exchange rate based on producer prices. The index

of the real effective exchange rate (2010=100) at the quarterly level was obtained on the basis of monthly data (data obtained from the database of the Bank for International Settlements)[2], while real effective exchange rate based on producer prices (2010 = 100) data were obtained from the CNB database[3]. The paper uses two indicators of the real exchange rate as exchange rate variables, where the indicator of the real exchange rate based on producers prices will be used in the VAR model of mutual influence of inflows into the manufacturing sector and the real exchange rate based on unit labor costs.

Graph 2: Movement of the real effective exchange rate index, Q1/2000 - Q3/2020
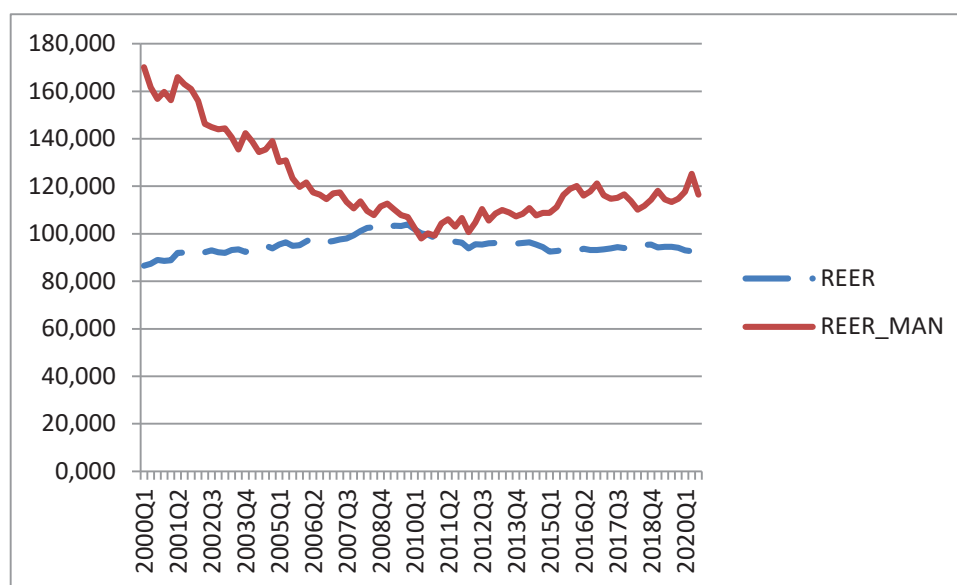
Source: CNB, BIS

3. VAR model

3.1. Selection of variables

In this subchapter, a selection of indicator variables to be used in the VAR model will be performed. In addition to the previously mentioned real exchange rate indicators, the model will also use the trade balance variable (in % of GDP) and the GDP growth rate variable (in indices, corresponding period last year =100, quarterly data) as additional variables. The goal of empirical analysis is to test and analyze changes in variables in the model based on the shock of another selected variable in the model and the function of impulse response of investment inflows.

As stated, in addition to the variable of the real exchange rate, the model will also use the variables of the GDP growth rate and the variable of the trade balance. Data for both variables were obtained from from WIIW database.
The purpose of including variables in the model is to see the interrelationships between the sectoral investment structure and the GDP growth rate. Namely, as mentioned in the introductory part, in previous research there is no agreement on the direction and intensity of the impact of investment inflows and GDP growth rate. Nevertheless, this model assumes that

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[2] An increase of the index value indicates appreciation of the real exchange rate
[3] A decrease of the index value indicates appreciation of the real exchange rate

the inflows into the service and manufacturing sector will have a slight positive impact on the GDP growth rate, at least in the short run, but in the long run it is expected that this positive impact will weaken. The reasons for such an interpretation, in the case of investments in the service sector, lie in the weak spillover effects as well as the weak export orientation of such investments. In the case of investments in the manufacturing sector, the question arises of the import dependence of such production as well as the possibility of the domestic economy to expand the spillover effects on the entire economy in the long run.

The impact of real exchange rate movements on the investments in the service and manufacturing sector will also be considered, where it is assumed that the appreciation of the real exchange rate will lead to a higher inflows in the service sector, while the depreciation of real exchange rate (based on unit labor costs) will initially lead to a higher inflows into the manufacturing sector. The scatterplots with the estimated regression line indicate just the above mentioned - where in both cases the positive slope of the estimated regression line shows a positive relationship between the mentioned variables, but does not assume the direction of causality.

Graph 3: Relationship between real exchange rate indicators and sectoral structure of FDI inflows
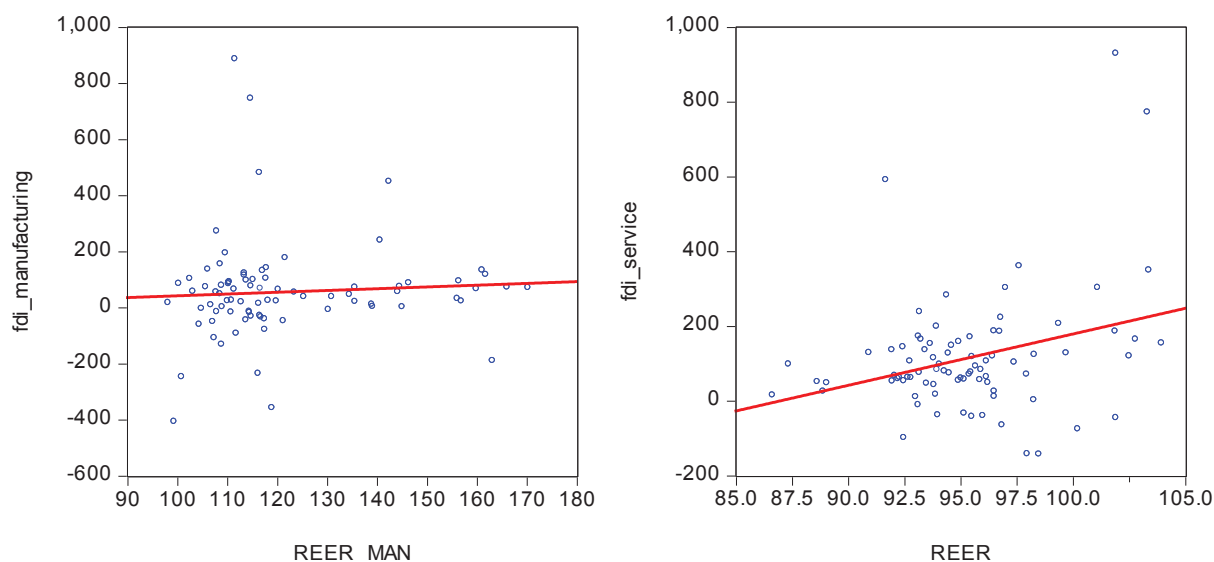
Source: Author's calculation, Stata 11

3.2. Empirical testing – VAR model

The VAR analysis will be conducted using quarterly data for the FDI sectoral structure of by flow approach (according to the National Classification of Activities, 2007) for the period q1/2000 - q3/2020. According to the NCA, economic activities are, for the sake of clarity, grouped into two groups - the first group refers to investments in the service sector, while the second in investments in production, i.e., in the manufacturing sector. Manufacturing sector activities, according to NCA, comprise the following activities: manufacture of tobacco products, manufacture of food products, manufacture of wearing apparel, manufacture of leather and related products, manufacture of wood and of products of wood and cork, except furniture, manufacture of articles of straw and plaiting materials, manufacture of paper and paper products, manufacture of coke and refined petroleum products, manufacture of chemicals and chemical products, manufacture of basic pharmaceutical products and pharmaceutical preparations, manufacture of rubber and plastic products, manufacture of other non-metallic

mineral products, manufacture of basic metals, manufacture of fabricated metal products, except machinery and equipment, manufacture of computer, electronic and optical products, manufacture of electrical equipment, manufacture of machinery and equipment n.e.c., manufacture of motor vehicles, trailers and semi-trailers, manufacture of other transport equipment, manufacture of furniturem and other manufacturing. Service sector comprise wholesale and retail trade and repair of motor vehicles and motorcycles, wholesale trade, except of motor vehicles and motorcycles, retail trade, except of motor vehicles and motorcycles, accommodation, food and beverage service activities, telecommunications and real estate activities.

Before statistical analysis is undertaken selected time series are also tested for the existence of a unit root, whereby if unit root was determined for the selected variable consequently the first differences of the original observations should be used in further analysis. However, in this paper, using the VAR model, the goal is to show exclusively dynamic responses of variables to unexpected shocks in other variables. Since the task of analysis in this paper is not to estimate the parameters per se but to observe the same dynamic responses, the variables of the subject VAR model are also nonstationary (e.g. Perera (2017) uses nonstationary variables, as suggested by Sims (1980) and Sims, Stock and Watson (1990)). So, in further analysis variables raw data are used.

As a part of econometric testing, two VAR models (2 lag order) were developed. Both models meet the stability criterion (VAR model stability tests are shown in Appendix). The formulas of the VAR model (impact of REER variable on other variables in the model) are presented in Appendix. In accordance with Bahovec and Erjavec (2009) Choleski factorization determine the order of variables in the VAR model. It is important to note that the order of variables can influence the results of the analysis. The first variable in the factorization order explains itself the most, so it is common for it to position the first. In order to determine the correct order of variables in the analyzed VAR models, the Granger causality test was performed (Granger causality tests and variance decomposition are shown in Appendix). In the first VAR model, the order of the variables, based on the results of the Granger causality test, is $\boldsymbol{balance\ of\ goods\ and\ services, REER, service, GDP\_index}$, while in the second VAR model order is $\boldsymbol{balance\ of\ goods\ and\ services, REER, manufacturing, GDP\_index}$.

Based on the estimated VAR models, the impulse response functions were determined, which are shown below in the form of a graph.

Graph 4: Influence of shock of one standard deviation in the variable REER and SERVICE on other variables of the model (impulse response function) over a period of 15 quarters

Accumulated Response to Cholesky One S.D. Innovations ± 2 S.E.
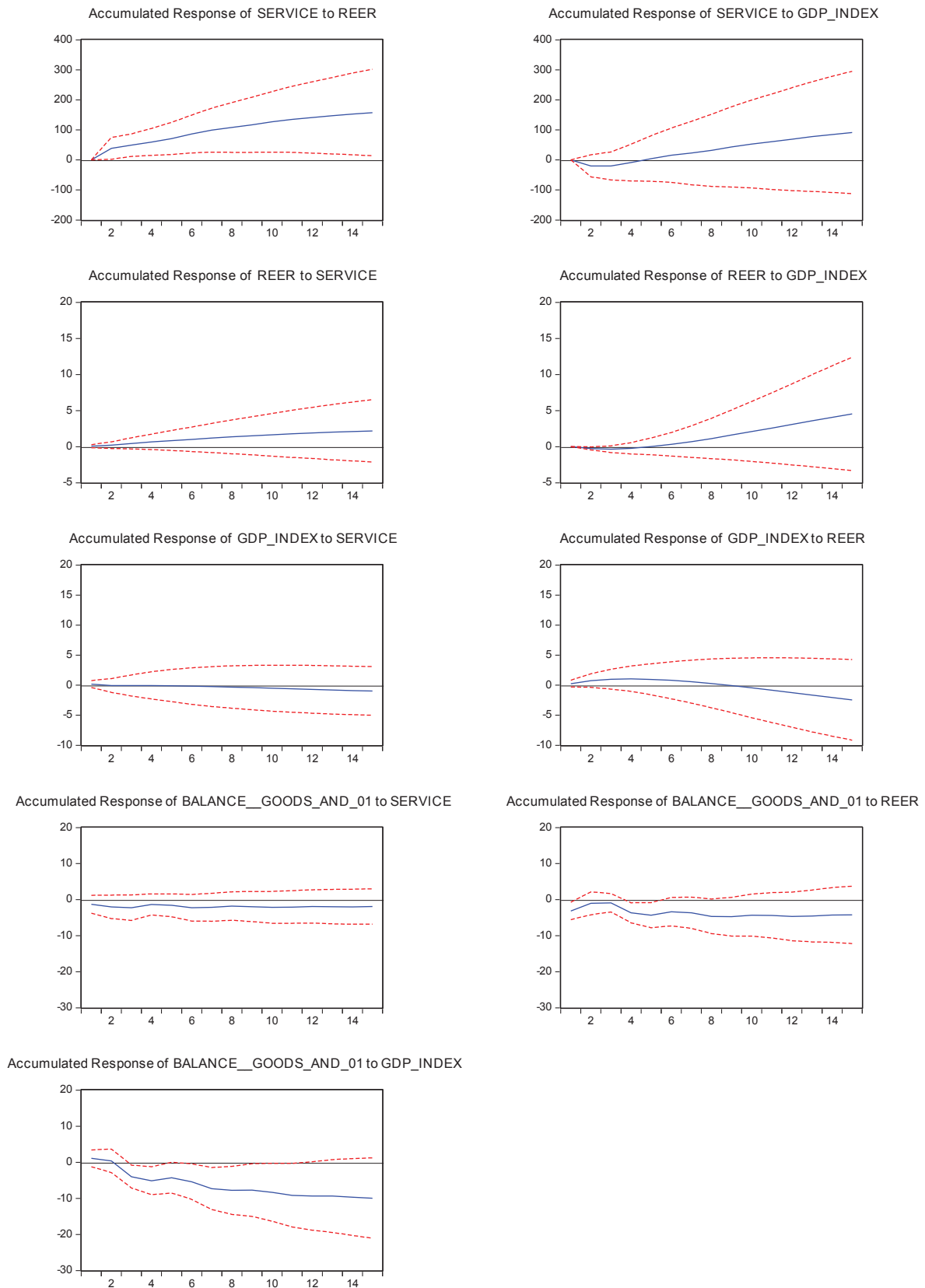
Source: Author's calculation, Eviews 7

The impulse response functions shown above based on the VAR model confirm the theoretically grounded settings of the work. Namely, as theoretically elaborated in the previous part of the paper, the shock of appreciation of the real effective exchange rate leads to an increased FDI inflow in the service sector, and it is important to note that in the opposite case the shock of FDI inflows into the service sector leads to real exchange rate appreciation although to a lesser extent than in the previous case. Furthermore, the positive and long-term impact of the GDP variable shock on the FDI into the service sector is noticeable, with this impact becoming positive only after several quarters. Regarding the impact of the FDI in the service sector, there is a noticeable continuous negative impact on the GDP growth rate variable. This supports the previously elaborated thesis on the weak, if not negative impact of investment in the service sector on GDP. Also, the VAR model analysis presents the negative impact of the shock of the GDP growth rate and the inflow in service sector on the trade balance. Namely, as can be seen from the above graphs, the increase in the GDP growth rate and the appreciation of the real exchange rate lead to a persistent negative effect on the trade balance. The reason for this lies in the fact that an increase in the GDP growth rate leads to an increase in domestic absorption and, consequently, to a deterioration in the trade balance due to increased demand for imports. It is clear that the inflow in the service sector does not necessarily lead to a significant improvement in foreign trade in goods and services.

Graph 5: Influence of shock of one standard deviation in the variable REER_MAN and MANUFACTURING on other variables of the model (impulse response function) over a period of 15 quarters

Accumulated Response to Cholesky One S.D. Innovations ± 2 S.E.
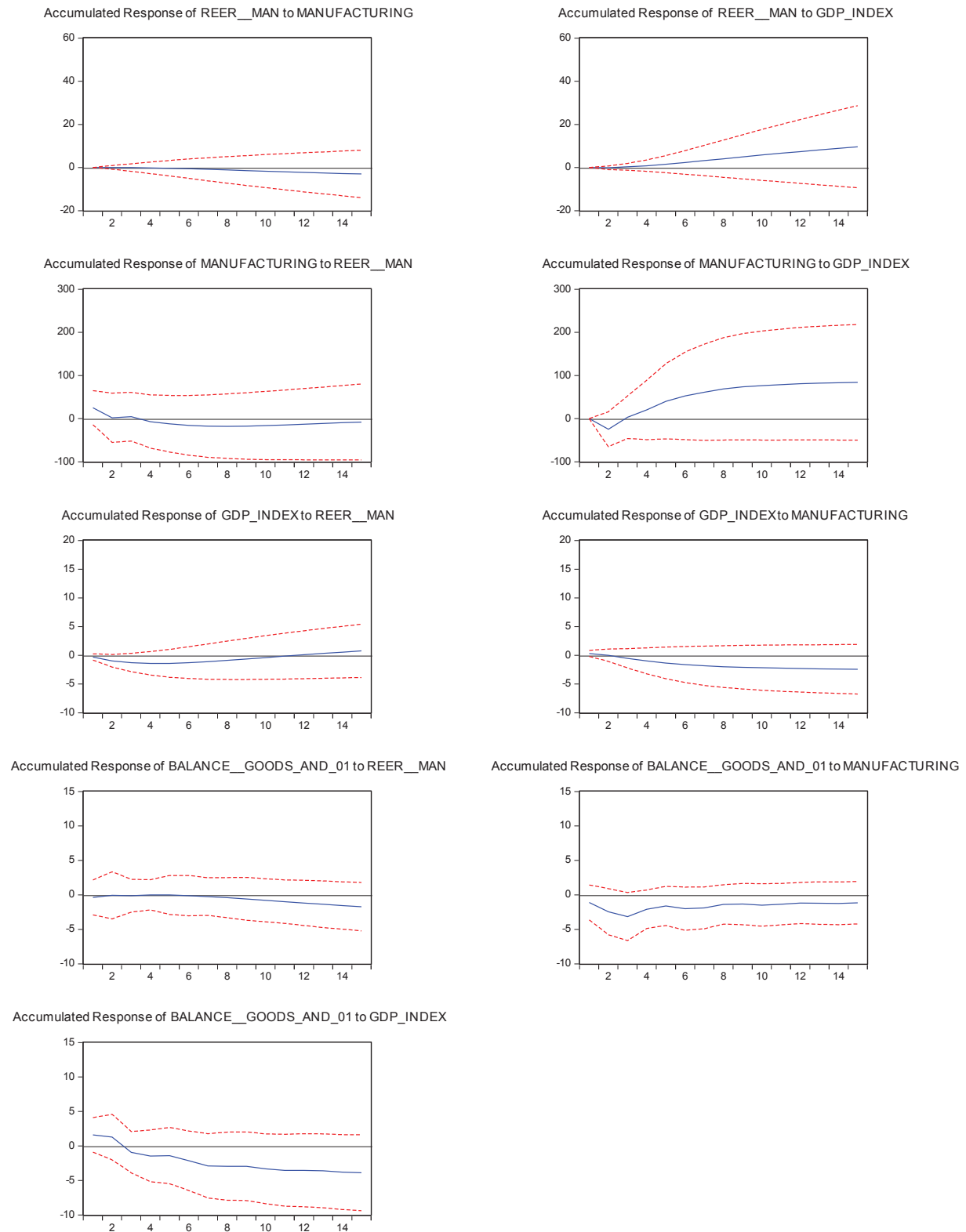
Source: Author's calculation, Eviews 7

If, on the other hand, we consider the impulse response functions of the above VAR model where the variable of FDI sectoral structure is taken as the variable of inflows into the manufacturing sector, then it can be seen that the depreciation of the real exchange rate leads, after initial increase, to long-term reduction of inflows into the manufacturing sector due to the limited export capacity and import dependence of the domestic economy. The analysis also shows the negative impact of the shock of the real exchange rate (based on unit labour coat) on the GDP growth rate, although in the opposite case, the increase in the GDP growth rate leads to a higher inflows in the manufacturing sector. Furthermore, similar to the case of the first tested VAR model, inflows into the manufacturing sector lead to real exchange rate appreciation, but with a time lag of 6-7 quarters. Also, inflows into the manufacturing sector after initial deterioration of the trade balance with a time lag lead to a reduction although not a complete elimination of the trade balance deficit.

4. Concluding remarks

This paper on the example of Croatia using the VAR model theoretically and empirically elaborate relations between real exchange rate, GDP growth rate and FDI inflows in the service sector and the manufacturing sector. The analysis determined the positive and long-term impact of the real exchange rate shock on the FDI inflows into the service sector, with the reverse impact being weaker. The reason for this can be found in Bukovšak, et. al (2017) who conclude that not all capital flows equally affected the appreciation of the domestic currency, where the authors state the importance of other private capital flows (portfolio and debt capital) as one of the factors of exchange rate appreciation, and which in this paper are not a separate variable in consideration. Furthermore, the positive and long-term impact of the GDP variable shock on the inflows into the service sector is noticeable, with this impact becoming positive only with a time lag of several quarters. Also, the analysis confirmed the negative and persistent impact of the inflows into the service sector on the GDP growth rate. This supports the thesis of a weak, if not negative impact of inflows into the service sector on GDP growth rate, mainly due to the orientation of this type of investment on the exploitation of domestic absorption and market share expansion, and less on export orientation. (the inflow of investment into the service sector leads to a negative and long-lasting effect on the trade balance).

If, on the other hand, the impulse response functions of the above VAR model are considered, where the variable of FDI structure is the variable of investment inflows into the manufacturing sector, then it is evident that the depreciation of the real exchange rate leads, after the initial increase, to long-term reduction of FDI inflows. The analysis also shows the negative impact of the shock of the real exchange rate variable (according to producer prices) on the GDP growth rate, although in the opposite case the increase in the GDP growth rate leads to a higher inflow of investment in the manufacturing sector.

The impact of GDP on attracting FDI to the service sector is characteristic of a middle income countries and can be overcome by designing an active industrial policy and stimulating an investment cycle that will accelerate growth, income and domestic savings. As Staehr (2018) has shown, countries that rely more on domestic savings have lower GDP volatility and we believe they will attract more FDI to more technologically advanced and export-oriented sectors.

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Appendix 1: VAR model stability test (FDI in service sector)

Roots of Characteristic Polynomial
Endogenous variables: BALANCE__GOODS_AND_01 REER SERVICE GDP_INDEX
Exogenous variables: C
Lag specification: 1 2

Root	Modulus
0.904513 - 0.079056i	0.907961
0.904513 + 0.079056i	0.907961
-0.034540 - 0.785471i	0.786230
-0.034540 + 0.785471i	0.786230
-0.236869 - 0.272382i	0.360969
-0.236869 + 0.272382i	0.360969
0.094937 - 0.273397i	0.289412
0.094937 + 0.273397i	0.289412

No root lies outside the unit circle.
VAR satisfies the stability condition.

Source: Author's calculation, Eviews 7

Appendix 2: VAR model stability test (FDI in manufacturing sector)

Roots of Characteristic Polynomial
Endogenous variables: BALANCE__GOODS_AND_01 REER__MAN
MANUFACTURING GDP_INDEX
Exogenous variables: C
Lag specification: 1 2

Root	Modulus
0.956172	0.956172
-0.092022 - 0.777967i	0.783390
-0.092022 + 0.777967i	0.783390
0.585813 - 0.114860i	0.596967
0.585813 + 0.114860i	0.596967
-0.291934 - 0.198831i	0.353212
-0.291934 + 0.198831i	0.353212
-0.016332	0.016332

No root lies outside the unit circle.
VAR satisfies the stability condition.

Source: Author's calculation, Eviews 7

Appendix 3: Granger causality test

Pairwise Granger Causality Tests
Sample: 2000Q1 2020Q3
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
SERVICE does not Granger Cause BALANCE__GOODS_AND_01	82	0.21366	0.6452
BALANCE__GOODS_AND_01 does not Granger Cause SERVICE		0.02491	0.8750
REER does not Granger Cause BALANCE__GOODS_AND_01	82	0.08854	0.7668
BALANCE__GOODS_AND_01 does not Granger Cause REER		**13.7079**	**0.0004**
GDP_INDEX does not Granger Cause BALANCE__GOODS_AND_01	82	2.58700	0.1117
BALANCE__GOODS_AND_01 does not Granger Cause GDP_INDEX		0.16240	0.6880
REER does not Granger Cause SERVICE	**82**	**7.39354**	**0.0080**
SERVICE does not Granger Cause REER		0.15769	0.6924
GDP_INDEX does not Granger Cause SERVICE	82	1.21473	0.2737
SERVICE does not Granger Cause GDP_INDEX		2.43753	0.1225
GDP_INDEX does not Granger Cause REER	82	0.25126	0.6176
REER does not Granger Cause GDP_INDEX		1.05168	0.3083

Source: Author's calculation, Eviews 7

Appendix 4: Granger causality test

Pairwise Granger Causality Tests
Sample: 2000Q1 2020Q3
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
REER__MAN does not Granger Cause BALANCE__GOODS_AND_01	82	1.44864	0.2323
BALANCE__GOODS_AND_01 does not Granger Cause REER__MAN		**3.29087**	**0.0735**
MANUFACTURING does not Granger Cause BALANCE__GOODS_AND_01	82	0.58489	0.4467
BALANCE__GOODS_AND_01 does not Granger Cause MANUFACTURING		0.20000	0.6559
GDP_INDEX does not Granger Cause BALANCE__GOODS_AND_01	82	2.58700	0.1117
BALANCE__GOODS_AND_01 does not Granger Cause GDP_INDEX		0.16240	0.6880
MANUFACTURING does not Granger Cause REER__MAN	82	0.00045	0.9831

REER__MAN does not Granger Cause MANUFACTURING		0.08938	0.7657
GDP_INDEX does not Granger Cause REER__MAN	82	1.05979	0.3064
REER__MAN does not Granger Cause GDP_INDEX		1.33244	0.2519
GDP_INDEX does not Granger Cause MANUFACTURING	82	0.21528	0.6439
MANUFACTURING does not Granger Cause GDP_INDEX		**4.89251**	**0.0299**

Source: Author's calculation, Eviews 7

Appendix 5: Variance decomposition (FDI in manufacturing sector)
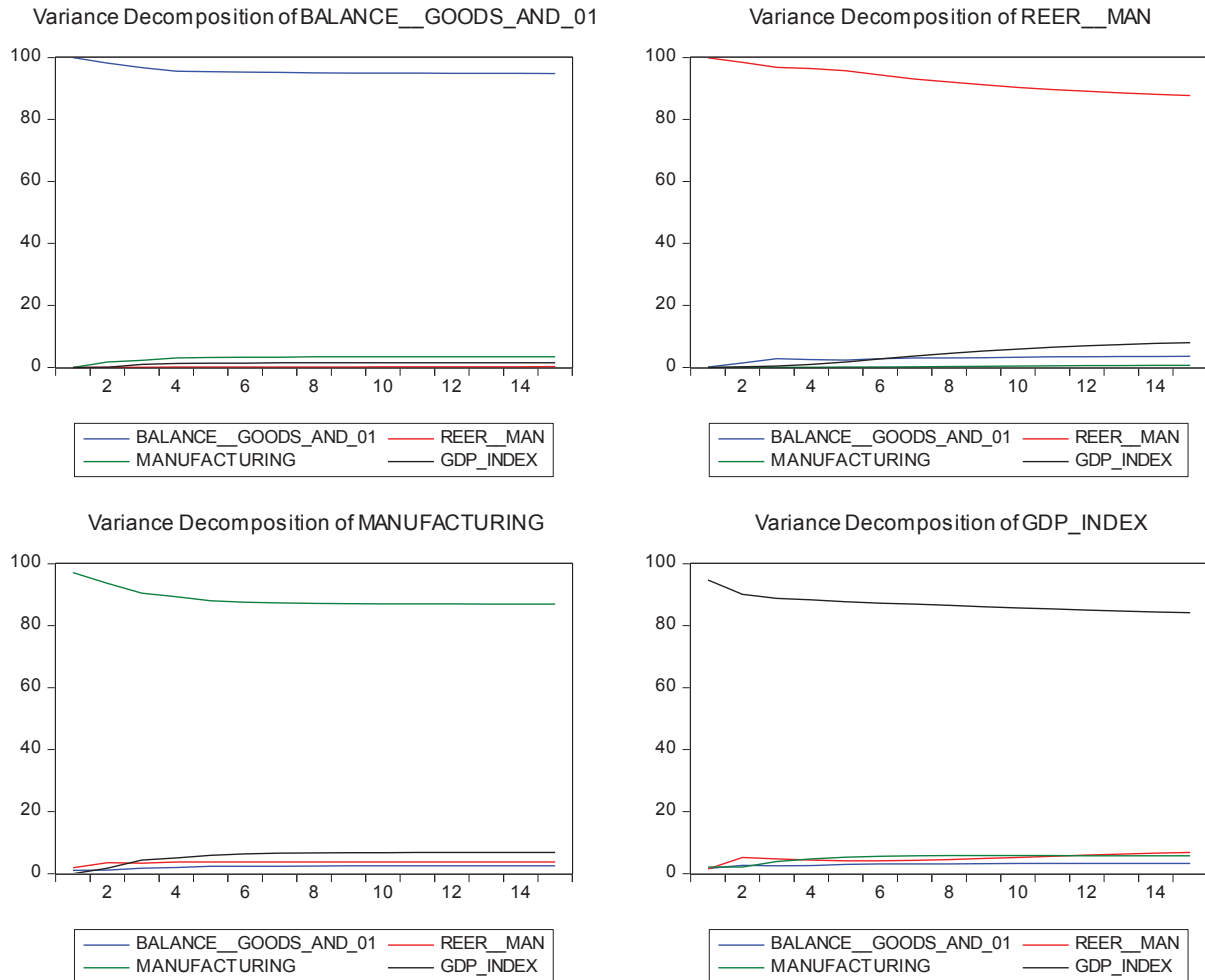
Source: Author's calculation, Eviews 7

Equations of estimated VAR models

REER = - 0.0253357586584*BALANCE__GOODS_AND_SERVICES(-1) - 0.0128548862743*BALANCE__GOODS_AND_SERVICES(-2) + 0.925433175967*REER(-1) + 0.0013260391792*REER(-2) + 0.000481527649734*SERVICE(-1) + 0.000255534642818*SERVICE(-2) - 0.0914163231257*GDP_INDEX(-1) + 0.122841453342*GDP_INDEX(-2) + 3.55581837716

REER__MAN = 0.0599274406123*BALANCE__GOODS_AND_01(-1) + 0.0336483251931*BALANCE__GOODS_AND_01(-2) + 0.782309526945*REER__MAN(-1) + 0.148389097187*REER__MAN(-2) + 0.000759859966935*MANUFACTURING(-1) - 0.000426738201244*MANUFACTURING(-2) - 0.081256124082*GDP_INDEX(-1) + 0.258951549686*GDP_INDEX(-2) - 9.92121333126

Appendix 6: Variance decomposition (FDI in service sector)
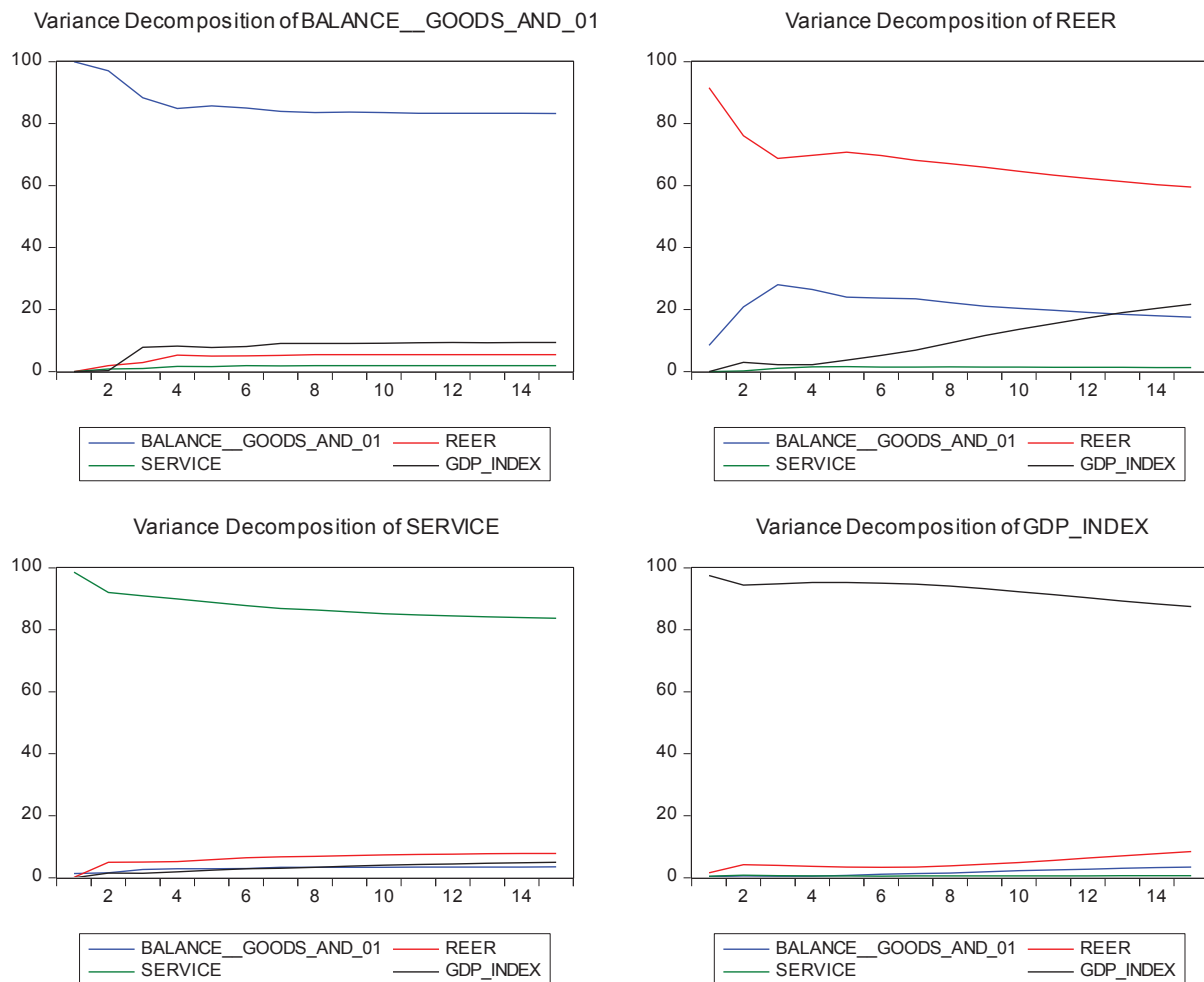
Source: Author's calculation, Eviews 7

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THE INFLUENCE OF CULTURAL HERITAGE ON THE DEVELOPMENT OF SLAVONIA'S, BARANJA'S AND SRIJEM'S TOURISM

ABSTRACT

Tourism is one of the key economic branches in the Republic of Croatia, and it is also a wellknown fact that tourism in Slavonia, Baranja and Srijem has been on a growing trend recently, these areas are recording an increase in the number of visitors and are becoming more attractive. Slavonia, Baranja and Srijem cover a wide geographical area, extremely rich cultural tangible and intangible heritage, which owes its development and preservation to intergenerational transmission.

However, tourism in this area is still lagging far behind tourism along the coast on the Adriatic sea. The aim of this paper is to explore the tangible and intangible cultural heritage in the target geographical area and its impact on the number of visitors and the development of tourism in these parts of the country in general. The paper will give a thorough overview of the cultural heritage in the area of Slavonia, Baranja and Srijem, its development and methods of transmission, as well as the impact on the number of visitors and the impact on the breadth of the tourist offer.

The paper will also address some of the key tourist destinations in the given area, as well as the impact of cultural heritage in the development of selected destinations. Also, given that these are three similar, but still specific areas, the paper will make a comparative presentation of the richness of diversity of tangible and intangible cultural heritage in these areas.

Keywords: tourism, visitors, impact, development, cultural heritage.

1. Introduction

The area of Slavonia, Baranja and Srijem includes 5 counties (Brod-Posavina, Požega-Slavonia, Virovitica-Podravina, Osijek-Baranja and Vukovar-Srijem counties), which cover approximately 15,000 km2 and together form the area of eastern Croatia, where according to the last census (2011) has 806,192 inhabitants, which is 19.8% of the total population of the Republic of Croatia. It is an area bordered by numerous rivers, among which stand out: Sava, Drava and Dunav, and although it is mainly a lowland area in eastern Croatia, there are several mountains: Papuk mountain, Požega mountains, Krndija and Psunj.

Although tourism is a key economic branch in the Republic of Croatia, its development in the observed area is specific largely because Croatia is recognized as a country with a pleasant Mediterranean climate and beautiful indented coastline, where tourism was conceived and

primarily developed in the country related to sea coast, and significantly less in continental areas.

Given that it is a predominantly lowland area, the area is ideal for the development of agriculture and animal husbandry, which over time have profiled themselves as key economic branches of this part of Croatia. However, given the importance of tourism (as the most important industry in the Republic of Croatia) and taking into account the many natural beauties and rich cultural heritage, tourism in this part of Croatia has developed significantly in recent years, but still lags behind tourism in areas along the coast.

Heritage culture is one of the strongest elements of the offer of these areas. Starting from Osijek, the baroque Fortress, the Art Nouveau European Avenue to the Đakovo Cathedral and the horse stables . Numerous castles, the Erdut tower and the Batinska battle memorial complex are some of the most important factor factors, along with the inevitable tradition and the UNESCO-protected custom of Ljelj and Bečar.

The area of Slavonia, Baranja and Srijem includes three similar but very specific areas, so the paper will give a thorough overview of the cultural heritage in the areas and its impact on the number of visitors and the development of tourism in these parts of the country in general.

The paper will also address some of the key tourist destinations in the given area, as well as the impact of cultural heritage in the development of selected destinations.

2. Cultural heritage and its role in the formation of a tourist destination

At the beginning of the paper, it is necessary to first try to define the concept of cultural heritage. Cultural heritage is an extremely complex term for which there is no single definition. What many different sources and authors have in common is that under the notion of cultural heritage they want to include all those goods, and all manifestations of human culture worthy of protection and preservation for future generations. The notion of cultural heritage defined by the Convention on the Protection of the World Cultural and Natural Heritage of 1972, under the notion of cultural heritage, meant only material and physical heritage. The mentioned definition was upgraded in 1985 at the Assembly of the World Tourism Organization when the Declaration on the Protection and Promotion of Natural, Cultural and Historical Heritage for Use for Tourism Purposes was adopted. (https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=57893)

According to the Declaration, the cultural heritage of a nation includes the works of its artists, composers, writers, philosophers, all works that have become an integral part of the nation's wealth and the totality of values that give meaning to life, for example: language, music, customs, beliefs, places and historical monuments, literature, works of art, archives and libraries. (https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=57893)

With this extension of the earlier definition of cultural heritage, it now includes folklore, cultural and traditional dances, performances, ceremonies, church ceremonies, festivals, etc. Cultural heritage, especially intangible, is usually associated with one geographical area, of course it is necessary to take into account all to the peoples who lived in that area and influenced the development of that culture through the past.

Unlike tangible cultural heritage, which is visible and much easier to recognize because it is visible and "tangible", intangible cultural heritage is much more difficult to define and describe. The UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage defines intangible cultural heritage as: "practices, representations, expressions, knowledge, skills, performances, as well as instruments, objects, handicrafts and related cultural spaces, groups and in some cases, individuals accept as part of their cultural heritage"(N. Ceribašić, 2013: 295-296) .

In the world, traditional culture and intangible heritage enjoy special protection. Namely, back in 2008, UNESCO (United Nations Educational, ScientificandCulturalOrganization - Organization of the United Nations Educational, Scientific and Cultural Organization) established a Representative List of the Intangible Cultural Heritage of Humanity.

Regarding the importance of this list, and the importance of protection of intangible cultural goods in the Republic of Croatia, it should be noted that the Republic of Croatia has as many as 13 goods on this list: Annual processions of Kastav bell ringers, Annual processions of queens - Ljelja, Lace in Croatia, Nijemo kolo from Dalmatian hinterland, Processional Phenomenon For the Cross, Two Voices of Narrow Intervals of Istria and the Croatian Littoral, Mediterranean Food in the Croatian Adriatic, Coast, Islands and Part of the Hinterland, Gingerbread Crafts in Northern Croatia, Sinjska Alka, The Art of Making Traditional Wooden Toys, Festa Sv. Vlaha, Bećarac and Klapa singing.

As for the concept of tourist destination, it is pointed out that it is a term that denotes one of the elements of the tourist system and the one that most affects the operation of the entire system, attracting visitors and encouraging their motivation to come. The tourist destination consists of several important features: attractions, receptive content, access, available package deals, activities and ancillary services.

The connection between the former cultural heritage and the tourist destination may not seem obvious, but the paper will show the connection between the most visited places (tourist destinations) and cultural tangible and intangible heritage in the selected area.

3. Tourism of Slavonia and Baranja

Slavonia is surrounded by three rivers: the Sava, the Drava and the Dunav, forming an area of exceptional beauty with rich forests, pastures and hills. There are numerous castles and summer houses in Slavonia that once belonged to rich families, and give a special charm to this part of Croatia. Although it is a space of exceptional beauty, with a rich tourist offer, it is a space that usually achieves a significantly smaller number of overnight stays and tourist arrivals than the area related to the Adriatic coast.

The past 2020 was marked by the outbreak of COVID-19 caused by SARS-CoV-2, which had a rather negative impact on tourism in general, due to the inability to travel for individual countries, and consequently due to fear of spreading the disease. However, the Republic of Croatia nevertheless achieved a good number of visitors and overnight stays, although it is of course significantly lower compared to previous periods.

The table below will show the number of arrivals for each county for 2020, as well as their percentage share in the total number of arrivals for the entire Republic of Croatia, which in the past year amounted to 7,001 128.

Table 1: Realized number of arrivals by individual county in 2020

Counties	Number of arrivals	%
Zagrebačka	42.206	0,6
Krapinsko-zagorska	89.836	1,28
Sisačko-moslavačka	12.985	0,19
Karlovačka	101.861	1,45
Varaždinska	45.180	0,65
Koprivničko-križevačka	7.253	0,10
Bjelovarsko-bilogorska	10.178	0,15
Primorsko-goranska	1.323.560	18,90
Ličko-senjska	267.856	3,83
Virovitičko-podravska	6.918	0,10

Counties	Number of arrivals	%
Požeško-slavonska	9.347	0,13
Brodsko-posavska	15.124	0,21
Zadarska	799.711	11,42
Osječko-baranjska	42.820	0,61
Šibensko-kninska	400.046	5,71
Vukovarsko-srijemska	29.380	0,42
Splitsko-dalmatinska	1.223.590	17,48
Istarska	1.736.315	24,80
Dubrovačko-neretvanska	455.106	6,50
Međimurska	39.384	0,56
Grad Zagreb	342.472	4,89

Source: https://www.dzs.hr

It is clear from the table that the counties with the largest number of arrivals as before were: Istria, Split-Dalmatia, Primorje-Gorski Kotar, Zadar and Dubrovnik-Neretva. However, thanks to its extraordinary geographical position (proximity to neighboring countries), the Primorje-Gorski Kotar county has achieved a respectable result.

Regarding the 5 Slavonian counties (Brod-Posavina, Požega-Slavonia, Virovitica-Podravina, Osijek-Baranja and Vukovar-Srijem counties), it is noticeable that they participate in the total number of arrivals with a relatively small percentage, but Osijek-Baranja proved to be the best county, which in the "crown of 2020" made 42,820 arrivals.

The advantage of Osijek-Baranja county is its administrative influence and the fact that it is the largest city in Slavonia, Osijek, located on the Drava river, which is an interesting tourist destination with many parks, cultural monuments and many entertainment facilities.

Although the tourism of Slavonia and Baranja is mainly oriented towards wine tourism, gastronomy and sports tourism (with emphasis on cycling, hunting, fishing), the specificity of Osijek as the largest city is reflected in numerous cultural and sacral monuments, among which stand out: Fortress, General Barracks, Church of St. Michael the Archangel, Holy Trinity Square, Con-Cathedral of St. Peter and Paul, Suspension Bridge and Art Nouveau Well, Square dr. Ante Starčević, Pejačević Castle, etc. (https://www.tzosijek.hr/znamenitosti-57)

One of the first cultural sights that all tourist visitors encounter in Osijek is certainly Square dr. Ante Starčević, which is a central place in the city, originated in the 17th century, as a place for fairs. Today it is a favorite meeting place and gathering place for many Osijek residents. Due to the three entrances from the west, east and south, it is characterized by a very recognizable triangular shape. It is decorated with a fountain bathed in rainbow colors, a monument to dr. Ante Starčević and one of the city's favorite statues - "Group of Citizens". In 2005, a detailed reconstruction of the square began, making it the only main square in Croatia that even has underfloor heating. (https://hrv.sika.com/hr/sika-projekti-i-reference/Trg-dr-Ante -Starcevica-Osijek.html)

The construction of the Osijek Fortress, which today is a very valuable cultural and historical object, began in August 1712., on the foundations of the ancient Roman city, which was located at a traffic and strategically important crossing over the Drava river. The main works on the Fortress were completed ten years after the beginning of its construction, while some smaller works lasted even half a century after the beginning of construction. (https://hrvatski-vojnik.hr/osjecka-tvrda/)

The fort originally consisted of seven bastions, located from the same to the west, and had four exit doors. The walls of the fortress were built of stone and brick, and the infrastructure was so advanced for the period of construction, given that it had public lighting from kerosene lamps and water supply and sewerage. Numerous civil, military and religious buildings were built inside the fortress, and among the first baroque sculptures built was a statue of the Holy Trinity

on the square of the same name. The Franciscans and the Jesuits, in order to raise cultural awareness and education in the area of the fortress, founded a grammar school and started a printing house. Within the Fortress there are two imposing church buildings, the baroque church of St. Mihovil with two bell towers and the Franciscan church of Sv. Cross with its convent. (https://hrvatski-vojnik.hr/osjecka-tvrda/)

Since the Fortress itself was conceived primarily as a defense complex, a number of military facilities were built in it. Among them, the building of the military command on Trg Sv. Trinity which was built in a combination of Renaissance and Baroque style. The building was extremely important because from 1735. to 1786., it housed the headquarters of the Slavonian General Command. An observatory with a Moorish-Venetian-style dome was built on the same square. on whose site today is the Archaeological Museum. At the end of 1783., with the relocation of the military command of the Fortress, it slowly lost its military role, and became more and more a central place of civilian life. (https://hrvatski-vojnik.hr/osjecka-tvrda/)

The fortress was special in that, in parallel with the military fortification, a city developed in it, with all its essential features, in which several different European languages were spoken, because in addition to Croats, many immigrants also lived in that area.

Today, the Fortress is one of the few Baroque urban units in Croatia, with the Archaeological Museum, the Rectorate of the Josip Juraj Strossmayer University and many other institutions important for the functioning of the City.

Osijek Concathedral - the parish church of St. Peter and Paul, is actually a parish church and does not have the status of a cathedral, given that the then government decision determined that the seat of the diocese would be in Đakovo. The construction of the concathedral began on the site of a small baroque church of the same name. The current area of the church is 1060 m2, and it can accommodate about 3000 people. The foundations are built of concrete and the walls of brick. 3 million pieces of brick were used in the whole church, and the glazing works were agreed with the Tyrolean painting company. It is especially interesting that the height of the church tower is 90 meters, the same as the altitude of Osijek. The organ was purchased in the 1930s and has 62 registers, three manuals and an electric pedal. Most of the work was completed by 1898, and the dedication was on May 20, 1900. (https://medium.com/notan-media/seciranje-grada-osijek-konkatedrala-sv-petra-i-pavla-76e3052f0e0)

During the World War 2. during the war the church was severely damaged, and in the name of war damage the church did not receive any compensation. Also, an extremely large damaged church suffered during the Homeland War, when it was systematically destroyed over a period of one year. Despite the prominent mark of the Hague Convention, it submitted about 100 direct hits, and then the total material damage was estimated at 5.2 million DEM. (A. Holjevac Tuković, A. Nazor: War damage to cultural goods in the Osijek-Baranja County)

Today, most of the mentioned damage has been repaired, and the Church of St. Peter and Paul is one of the most beautiful church buildings in the Republic of Croatia, and captivates the eyes of visitors to the City.

Pejačević Castle is located in the former village of Retfala, today it belongs to the center of Osijek. The castle was built by Count Sigismund Pejačević in 1801.

Although it was initially a relatively small estate, it grew into a posh classicist castle, which has three wings in the shape of the letter u. The interior space is organized around a central hallway, where rooms line up on either side of it. The central axis is highlighted by a large hall and a lobby in a large pavilion. The central pavilion is elevated upstairs, while the rest of the castle with side wings is ground floor. The pavilion is dissected by arcades on the ground floor and high-order Ionic pilasters, and was originally covered with an attic like the rest of the building. Near the castle, in the Retfala cemetery, there is a chapel-mausoleum of the Pejačević family from 1891. Today, the castle is considered a significant part of the architecture of classicism in Croatia. (http://www.kulturni-turizam.com/hrv/sadrzaj/osijek/1433/opsirnije/)

Before arriving in Osijek, as the main tourist destination of this area is located Đakovo, a town of exceptional beauty which, in addition to the beautiful cathedral in the city center as a recognized destination is the State Stud Farm Lipicana. The Lipicans farming is an intangible cultural heritage of the whole of Slavonia, Baranja and Srijem.

The Lipicanes, horses of exceptional beauty, were bred for the needs of the high aristocracy. Today, the Lipicanes are bred in two forms, in state stables in Slavonia and by traditional breeding in farms in Baranja and Srijem.

The Lipcanes are the most bred breed in the Republic of Croatia, but it is not possible to determine the exact beginning of their breeding. Many believe that their cultivation began sometime in the late 18th century near Virovitica on the estate of Count Andrija Janković.

Although horse breeding, including the Lipicanes breeding, has been marginalized by the advent of machinery, in Slavonia, Baranja and Srijem the breeding of these beautiful horses has flourished in the past 30 years precisely because of the recognition of cultural identity and intangible cultural heritage. (https://zir.nsk.hr/islandora/object/unipu%3A4778/datastream/PDF/view)

Apart from the breeding of the Lipicanes, one of the most important intangible cultural assets of the Đakovo region is certainly Ljelje. In the Đakovo region, the most famous custom is the Lent on Pentecost, especially cherished in the village of Gorjani. The custom was discontinued between 1956 and 2005. It is a cultural custom in which young girls choose kings and queens from among themselves.

The queens wear ceremonial women's costumes and the kings wear men's hats decorated with flowers, mirrors and ribbons. The girls are accompanied by beggars, a group of several men who collect gifts in baskets around the village. Ljelje in different houses in the village perform different tunes depending on who they come from. After the final ceremony and the round, the hosts donate the ljelja's.

Ljelja's custom is from the 19th century. Since 1956, the custom has not been performed, and at the end of the 80s of the last century, primarily for fear of oblivion, in Gjakova there was a desire to restore this old custom, which finally came to life in 2005. (https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=200920)

4. Tourism in Srijem

The area of western Srijem, which is located in the Republic of Croatia, mainly represents the area of Vukovar-Srijem county and represents the easternmost Croatian region. As for Osijek-Baranja county where the number of visitors is mainly related to the largest city Osijek, the same is true in Vukovar-Srijem county where the largest number of visitors come to Vukovar as the largest city in that part of the country and the administrative seat of Vukovar-Srijem county. Along with Vukovar, the most visited are the City of Vinkovci and the City of Ilok as the easternmost Croatian city, known primarily for wine tourism and gastronomy. The specificity of Srijem, in terms of tourism, is that most of Srijem's tourism is based on small farms, but it is also an area of extremely rich cultural heritage.

Table 2: Number of visitors in the cities of Vukovar-Srijem County in 2019

Towns	Arrivals total	Domestic tourists	Foreign tourists
Ilok	6206	4678	1528
Vinkovci	24997	17477	7520
Vukovar	44852	39957	4625
Županja	2533	1307	1226

Source: https://www.dzs.hr/Hrv_Eng/publication/2019/04-03-02_01_2019.htm

The area of Vukovar and along Vukovar is characterized by numerous archeological sites from the bronze, old and young iron ages, which, among other things, testify to life in that area over a period of five thousand years in continuity. The area is especially known for the Vučedol culture, which got its name from the Vučedol site. The Vučedol Orion is the oldest Indo-European calendar, and the Vučedol dove is one of the symbols of the City of Vukovar.

Croats settled in Vukovar in the 6th century after the collapse of the Roman Empire, and the name Vukovar comes from the 14th century.

During the post-World War II period, Vukovar became a powerful industrial center and one of the most developed cities in Yugoslavia, and it retained its status as one of the most developed cities until 1991, when it was completely destroyed. In 1997, when the process of peaceful reintegration began, the reconstruction of the City began, which is still ongoing. Larger buildings have been renovated and the City has almost completely regained its former appearance.

Considering that during the Homeland War the City of Vukovar played a key role in defending the rest of the homeland, suffering enormous losses of military and civilian casualties, and that it was completely destroyed, an important part of Vukovar's tourist offer is related to places that played a key role in defense of the City, but also representing a symbol of suffering, better known as "Vukovarski nokturno", the largest number of visitors (mostly domestic guests) visit Vukovar in November when the anniversary of the fall of the City. As part of the "Vukovar nocturne", tourists visit the Vukovar Hospital, Ovčara, the Memorial Home, the Memorial Cemetery of Homeland War Victims. Since last year, Vukovar has enriched its tourist offer with the renovation of the Water Tower, which offers a view of the entire city. (https://turizamvukovar.hr/vukovar/crtice-iz-povijesti-vukovara/)

In addition to the above, the Eltz Castle stands out in Vukovar for its beauty, in the premises of which the City Museum of Vukovar is located today. The castle is large in size, sumptuous in concept and abounds in a wealth of stylistic details. It is one of the most representative objects of the Baroque period on Croatian soil. (https://www.visitvukovar-srijem.com/hr/sto-vidjeti-i-dozivjeti/kulturni-i-povijesni-turizam/gradske-znamenljivosti/ilok/)

Also, there is the baroque city center, Radnički dom, Stari vodotoranj, Birth house of Lavoslav Ružička, etc.

Along with Vukovar, the second most visited city of Vinkovci is the oldest city in Europe. It is adorned with a beautiful Baroque core, landscaped parks and a hiking trail with motifs of Orion, the oldest Indo-European calendar. Sopot Archaeological Park is connected to the city center by a 3 km long hiking and cycling trail. The park is located next to the Sopot picnic area, and unites six Sopot houses that were once built in swamps, along streams or, as in this case, along the river Bosut.

Vinkovci abounds in valuable sacral monuments. The oldest of them is the early Romanesque church of St. Ilije na Meraji (Tur. Meraja - cattle farm). The foundations that can be seen today testify to this church. There was a cemetery around the church, and the dating of the church is based on the findings of money in the graves, and it is assumed that it was built during the reign of Koloman (1095-1116). The church was later demolished, and a Gothic single-nave building was built on part of its foundations at the beginning of the 14th century.

Vinkovci holds a number of cultural events throughout the year, and the Vinkovci Autumns are especially famous, the largest folklore event in this part of Europe, which attracts a large number of foreign and domestic visitors to Vinkovci.

5. Conclusion

Cultural heritage, in addition to representing the immeasurable wealth of a nation, in preserving its identity and tradition, is also a significant component in the development of the tourist offer

of a particular destination. The area of Slavonia, Baranja and Srijem is rich in cultural heritage. Although the work is more based on tangible cultural heritage, it is a space of distinct and intangible cultural heritage.

In terms of tourism, this is a space that faces many challenges, primarily because a large part of the tourist offer is based on gastronomy and rural tourist households, where a very important role in attracting and retaining guests are renters.

As for the arrival of foreign tourists, it is logical that most of them still visit the Republic of Croatia because of one of the most beautiful seashores, but many people are looking for an escape from everyday stress and obligations in the continental regions.

The tourist offer of the observed area is quite rich and is constantly being upgraded, first of all many cultural heritage buildings have been renovated and their promotion is really being done, but it is necessary to make additional efforts to improve the content of the offer there is a lot to offer.

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A scientific paper

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THE IMPACT OF OIL PRICES ON PETROLEUM PRODUCT PRICES IN CENTRAL EAST EUROPEAN MARKETS

ABSTRACT

Asymmetric price transmission in petroleum product markets implies a different speed and/or intensity of adjustment of petroleum product prices to crude oil price changes. The public perceives it as a rather quick response of petroleum product prices to oil price increases as oppose to their adjustment to crude oil price decreases. If found, asymmetric price transmission is a direct consequence of energy subjects' behaviour, exploiting oil price fluctuations at the expense of the customers.

The existing literature, although rather vast, is still mainly focused on developed countries (primarily the USA), displaying substantial disparity in the research results. Using the asymmetric Error Correction Model, this paper aims to detect the existence of asymmetric price transmission in Eurosuper95 and Diesel markets in; Croatia, Czech Republic, Hungary, Slovenia, Slovak Republic and Poland prior to the EU accession of Croatia (from January 2005 to June 2013). The period under investigation is selected in order to detect possible differences in the behaviour of energy subjects on petroleum product markets of CEE EU countries, as oppose to Croatia that was not a member at the time. The results suggest complete absence of asymmetric price transmission when whole sample period is taken under consideration. However, when the original sample is split in two, as a robustness check, asymmetric price transmission was found in 33,33% of the analysed cases, indicating that asymmetric price transmission is not necessarily a continuous feature of petroleum product markets but can be found at shorter periods of time, linked to greater crude oil price fluctuations.

Keywords: *asymmetric price transmission, asymmetric error correction model (ECM), oil prices, petroleum product prices.*

1. Introduction

Oil prices directly affect petroleum product prices and the public often perceives the speed of price adjustment to be uneven, depending on the direction of the oil price change. When oil prices go up it seems that petroleum product prices adjust more quickly upward then they do downward in case of an oil price decrease. This phenomenon is known as Asymmetric Price Transmission (APT).

The aim of this paper is to test whether APT exists in Eurosuper95 and Diesel markets of post-transition Central East European economies (CEEs), namely: Croatia, Hungary, Czech Republic, Poland, Slovenia and Slovak Republic. The vast majority of existing research has been done on developed markets (namely USA) while less developed economies are not as

nearly represented. Additionally, much of the extent literature comes to seemingly contradictory conclusions about the existence and causes of asymmetry (Chesnes, 2016).

The paper is structured as follows. Section 2 analyses the theoretical background of asymmetric price transmission followed by literature review in Section 3. Section 4 gives a brief overview of the sample, data and methodology. Estimation results are presented in Section 5 while Section 6 concludes the paper.

2. What is Asymmetric Price Transmission?

Asymmetric price transmission (APT) is a phenomenon that occurs if; the direction, speed and/or the intensity of price adjustments differs depending on whether input price increases or decreases. If the change in output prices is equal to the change in input prices; in terms of direction, speed and intensity, then the price adjustment is symmetrical. Otherwise, if differences in the intensity and the time required for output prices to adjust exist, price adjustment is asymmetric.

Asymmetric price adjustment (the term price asymmetry is frequently used in literature as a synonym for APT) can be positive or negative (for a thorough elaboration on types of price asymmetry see: Meyer and von Cramon-Taubadel (2004, p. 583-586). If output price adjustment is faster and more complete following an increase of input prices (than in the case of a decrease of input prices) asymmetric price adjustment is positive. By contrast, if output price adjustment is faster and more complete due to decreasing input prices (than in the case of an increase of input prices), asymmetric price adjustment is negative. In order to avoid confusion one can conclude: negative asymmetric price adjustment means good news for consumers (and bad for energy subjects) as they imply faster and /or complete final price adjustment as a response to an input price decrease. At the same time, and by contrast, positive asymmetric price adjustment implies losses for the same (and more profit for energy subject), meaning that, as a result of an input price increase, final prices adjust upwards faster and/or completely.

According to Peltzman's study (2000) conducted on 165 manufacturing and 77 consumer goods, positive asymmetry was found in two out of the three markets, i.e., following a change in input prices, end prices rise faster than they fall.

A prerequisite for APT is the existence of integrated markets (in this case vertically) where prices on lower, retail, levels adjust to prices at higher levels; production and/or wholesale. In the case of oil/petroleum product markets this means that retail prices of petroleum products, adjust to wholesale petroleum products prices and to oil prices. In the absence of external disturbances, there is a long-run equilibrium relationship between oil prices and petroleum product prices as oil is the main input in petrol/diesel production. External disturbances in this system (for example, an increase in oil prices due to geopolitical tensions in some of the key exporting countries) will result in short-run and long-run adjustment of the final price because energy subjects tend to maximize / optimize their profits. Prices in the long run reflect the limitations of commodities in terms of their scarcity. In the short run, only oil price changes affect petroleum product prices. Petroleum product price elasticity is extremely low because petroleum products do not have adequate substitutes in the short run, so consumers respond to price increase by suppressing consumption (because of their strong income effect) rather than substituting petroleum products.

As for the possible causes of APT, literature provides a few explanations, namely; market power and search costs. Market power can significantly affect the existence of asymmetry, so this is the most plausible cause of asymmetry as stated in the literature (Bailey et al., 1989; Borenstein and Shepard, 1997; Boyd and Brorsen, 1988; Meyer and Von Cramon-Taubadel, 2004). According to Borenstein et al. (1997), in a non-competitive market, one or more

companies that enjoy market power pass on cost increases much faster to end consumers than is the case with cost (input price) decreases. This way they maximize earnings by adjusting prices upwards almost instantly to avoid reducing margins. Alternatively, an energy company will not react to an input price reduction until it notices a decrease in sales volume (reduction in demand), which will be interpreted as a reduction in prices by competitors. At this point they will respond with output price reduction in order to preserve its current market share.

The market structure of the global oil industry is extremely complicated and heterogeneous; differences are found with regard to; reserves, inventories, extraction/production costs, political and regulatory framework, as well as different responses to technology development challenges (Fafaliu and Polemis, 2011, p. 2). Search costs include costs associated with the process of collecting market information. Customers often do not possess the relevant information about prices in other markets because of search costs, therefore, companies can use given market conditions to adjust prices asymmetrically. Lewis (2011, p. 409) states that if the search costs in a particular market are high, margins will also be high. Tappata (2009, p. 691) believes that search cost comes down to the ability, or willingness, of a particular customer to remember and compare prices (as they are usually visible from the car when you drive by a petrol station) of the fuel he uses. Additionally, Radchenko (2005) points out that the increase in price volatility discourages customers in search of more favorable prices thus reducing competition among gas stations.

3. Literature review

APT research is not specific for energy markets; there is a significant number of studies in agricultural and financial markets. The research of APT phenomenon pioneered in the field of agriculture economics (the term APT originates and is more commonly used in agricultural economics, while energy economists also use simplified versions of the same term; "price asymmetry" and/or "rockets and feathers") but, surprisingly, the results of such studies are rarely used and cited in studies of price asymmetry in other markets.

In the new millennia, driven by high oil prices volatility, primarily oil price spikes, a considerable number of studies of the existence of APT in fuel markets has emerged. Among the first ones was, the most influential, study by Borenstein et al. (1997). Using a biweekly data sample from March 1986 to December 1992 authors found evidence of APT in US petroleum product market. Theoretical elaboration of research results suggested a time lag required for the adjustment of inventory and production, as well as the market power of energy operators in the market as possible causes of APT.

Despite the growing interest of scientists in APT in energy markets, study results are not consistent; different authors use different samples, methodology and data frequency.

Perdiguero-Garcia (2013) conducted a study of a series of papers on APT in petroleum products markets in order to identify their similarities and differences. As pointed out earlier, oil market is vertically integrated, i.e. price adjustment takes place among different levels of vertically integrated market; global (oil prices), petroleum product wholesale and petroleum product retail. In this sense, we can investigate the existence of APT depending on which market segment or which two, to be precise, are taken under consideration; the oil market and wholesale market, the oil market and retail market or wholesale market and retail market. The vast majority of papers examine the existence of APT between oil prices and retail petrol prices (see: Borenstein et al., 1997; Balke, Brown and Yücel, 1998; Reilly and Witt, 1988; Godby et al., 2000; Galeotti, Lanza and Manera, 2003; Radchenko, 2005a; Noel, 2007; Meyler, 2009; Liu et al., 2010; Atil et al., 2014). Research of the impact of wholesale to retail petroleum product prices (see: Bacon, 1991; Karenbrock, 1991; Borenstein and Shepard, 1996; Eckert, 2002; Kaufmann and Laskowski, 2005; Deltas, 2008; Bermingham and O'Brien,

2011) is where APT is most usually found. This leads to the conclusion that the retail petroleum product markets are rather concentrated or low competitive which is consistent with market power hypothesis. In papers testing for the existence of APT between oil prices and petroleum product wholesale prices; APT is rarely detected.

If we look at the geographic location of the analyzed markets; developed, western, economies prevail, primarily the United States (for example: Karenbrock, 1991; Shin, 1994; Energy Information Administration, 1999; Johnson, 2002; Chen et al., 2005; Radchenko, 2005a; 2005b; Ye et al., 2005; Al-Gudhea et al., 2007; Deltas, 2008; Lewis, 2011), followed by research in developed European economies (Bacon, 1991; Lanza, 1991; Asplund et al., 2000; Bettendorf et al., 2003; Galeotti et al., 2003; Grasso and Manera, 2007; Perdiguero-Garcia, 2010). Research data is most commonly generated and processed at national level, but often exploring regional or local petroleum product markets as well. For the latter research it is important to state that a notable share of research has been made in developed countries. This is mainly because the availability of high-quality databases is positively correlated with the level of economic development of individual economies. It can also be noted that the probability of APT detection is greater when analyzing regional/local markets, which is consistent with the hypothesis of the existence of greater market power on the micro location in relation to the macro location (country).

Data frequency varies from daily to monthly data, where weekly and monthly data are as equally used, and daily data far less. It is important to highlight research with daily prices, although they make a smaller portion of total research. If APT exists on daily basis it can be "masked" if we use weekly, especially monthly data. On the other hand, even a one-day delay in the adjustment of the fuel price can provide energy subjects with quite "adequate" increase in revenue and/or profits. This type of research is rare only because of poor daily data availability (rare examples of research with daily prices are: Bachmeier and Griffin, 2003; Gu and Jansen, 2006; Al-Gudhea et al., 2007; Oladunjoye, 2008; Bettendorf et al., 2009; Noel, 2009). Research using daily data are more likely to find evidence of APT. Also, according to Perdiguero-Garcia (2013), there is a negative correlation between the average number of years analyzed in the research and the detection of APT, therefore, research using longer time series tends to reject the hypothesis of the existence of APT.

The methodology used in APT research is quite heterogeneous; however, the most frequently used model is Error Correction Model (ECM; Perdiguero-Garcia, 2013). Regardless of the type of the model used, it is evident that the type of methodology used is not a justification for the disparity in the results of different studies.

A most recent meta-analysis by Cook and Fosten (2019) indicates the existence of APT both in diesel and gasoline markets. However, the authors do underline significant research result variations.

Finally, as stated earlier, research on APT on petroleum product prices in CEE countries is quite scarce. A most recent study by Gosińska et al. (2020) on European fuel markets (2000:M1-2016:M7) detected the existence of APT between the domestic wholesale market and the retail market (especially in new EU member states) indicating the behavior of petrol stations (not the oil companies) as the most plausible cause. Szomolányi et al.(2019) rejected an expected asymmetry in the retail fuel price reactions on crude oil changes in Slovakia (2009-2019; weekly data) as did Farkas et al. (2009) and Koltay (2012) in the case of Hungarian gasoline industry. For Hungary it should be noted that the gasoline market is characterized by substantial vertical integration. MOL, the largest retailing chain as well as the largest wholesale producer in Hungary was also under investigation for pricing behavior from 2006 till 2010 (Hungarian Competition Authority, 2014). In the case of Poland, Socha (2014) found an asymmetric relationship between the price of crude oil and pump prices in the case of diesel fuel and no asymmetry for gasoline (2005-2013; weekly data). In addition to

the specifics of the Hungarian market, it should also be noted that Croatian and Slovenian fuel markets were fully liberalized in 2014 and 2020, respectively. Finally, Croatian National Bank (CNB) conducted a research on APT for diesel and motor gasoline in Croatia (2014:M02-2018:M12) indicating the absence of APT in the adjustment of diesel prices to oil prices, with the possibility of APT in the adjustment of motor gasoline prices, but only with a 10% significance level of. They concluded that there are indications of asymmetry, although it was not statistically significant (CNB, Macroeconomic Trends and Forecasts, 2018).

4. Data and methodology

The research covered Eurosuper95 and Diesel markets in six CEE countries, namely; Croatia, Czech Republic, Hungary, Poland, Slovak Republic and Slovenia. All countries are EU members; Croatia, from July 2013, and the remaining countries as of May 2004. The sampling period is from January 2005 to June 2013 (to December 2012 for Croatia) covering a time span of almost nine years. During the sampling period Croatia was the only non EU country. The reason for limiting the data span to 2013 is to determine whether APT depends on EU accession (in terms of stimulating market competition among energy subjects) and was it affected by EU membership for countries other than Croatia. All data are weekly at national level with sample size exceeding 400 observations.

Weekly data on Eurosuper95 and Diesel prices (in Euros per liter) are freely available from European Commission Weekly Oil Bulletin. Crude oil prices used in this research are weekly Spot Brent oil prices, retrieved from US Energy Information Administration web site (also freely available). Spot Brent is considered to be the reference benchmark for oil prices in Europe. Prices are originally denominated in US dollars per barrel and transformed in prices in euros per barrel using dollar-euro exchange rates. Weekly prices of petroleum product derivatives are converted by national currencies vs. euro exchange rates (also provided by Weekly Oil Bulletin), in order to allow for data comparability since Slovenia and Slovakia have been members of the European Monetary Union since 2007 and 2009, respectively.

Taxes and excise duties account for around 50% of petroleum product end price, and, therefore make plentiful state budget revenue. As the aim of the paper is to estimate the behavior of energy subjects, and not the government; we use petroleum product prices excluding value added tax and excise duties (as in; Galeotti et al., 2003; Liu et al., 2010; Radchenko, 2005b).

Initially popularized by Engle and Granger (1987), Error Correction Model (ECM) is employed (for a detailed discussion on econometric models of asymmetric price transmission see; Frey and Manera, 2005). ECM combines short-term and long-term dynamics and is commonly used in APT testing.

The long run relationship is specified as follows:

$$\ln\_FUEL_t = \alpha_0 + \alpha_1 \ln\_OIL_t + \varepsilon_t \tag{1}$$

where *ln_FUEL* denotes the natural logarithm of weekly retail Eurosuper95 and Diesel prices (in €/l), *ln_OIL* is the natural logarithm of weekly Brent Spot oil price (in €/bbl), ε_t is a stationary error term. As discussed in Liu et al. (2010), α_0 is a measure for constant markup and α_1 is a measure of the degree of pass-through in the long run. Long run pass-through is complete if α_1 is equal to one; if α_1 is less than one, pass-through in incomplete.

ECM also allows us to determine how long it takes for retail prices to fully adjust to oil price changes by calculating Mean Adjustment Lag (MAL). Short run dynamics are estimated by ECM Engle and Granger (1987) model:

$$\Delta\ln\_FUEL = \beta_1\Delta\ln\_OIL_t + \beta_2(\ln\_FUEL_{t-1} - \alpha_0 - \alpha_1\ln\_OIL_{t-1}) + v_t \qquad (2)$$

where Δ denotes first difference operator, β_1 and β_2 are model parameters, v_t is an error term and $\hat{\varepsilon}_{t-1} = \ln\_FUEL_{t-1} - \alpha_0 - \alpha_1\ln\_OIL_{t-1}$ is the residual of the long run relationship given by Eq. (1) at time *(t-1)*. β_1 is a short-term pass-through rate; it measures to what extent a change in oil price reflects on petrol price in the same period. β_2 estimates the error correction adjustment speed when prices are away from their equilibrium level and is expected to be negative in the mean reverting case.

To allow a possibility of an asymmetric petroleum product price adjustment a dummy variable λ is introduced. If the error term $\hat{\varepsilon}_{t-1}$ is positive, λ is equal to 1 and 0 otherwise. Now, asymmetric short-run dynamic equation can be written as follows:

$$\Delta\ln\_FUEL_t = \delta_1\Delta\ln\_OIL_t + \delta_2\lambda\hat{\varepsilon}_{t-1} + \delta_3(1-\lambda)\hat{\varepsilon}_{t-1} + \eta_t \qquad (3)$$

where δ_1 is equivalent to β_1 in Eq. (2), δ_2 is the error correction adjustment speed when prices are above their long-run equilibrium level and δ_3 is the error correction adjustment speed when prices are below their long-run equilibrium level. As pointed out by Granger and Lee (1989), if the residual $\hat{\varepsilon}_{t-1}$ is stationary, then both $\hat{\varepsilon}_{t-1}+$ and $\hat{\varepsilon}_{t-1}-$ ($\hat{\varepsilon}_{t-1}$ split in positive and negative series) are stationary, meaning that parameters δ_2 and δ_3 must take a value other than zero. To detect the presence of asymmetric adjustment, Wald test is used to determine if the difference between δ_2 and δ_3 is statistically significant.

5. Empirical results

Philips-Perron (PP) and Augmented Dickey-Fuller (ADF) unit root test results on (log) price series (available upon request) show that all first differenced series are stationary at the 1% level. When first differenced data series are stationary oil and petroleum product prices are cointegrated if the residual of Eq. (1) is stationary. ADF test results indicate that all residual series are stationary at 1% significance level (results omitted to save space) meaning that oil prices and petroleum product prices are cointegrated; i.e. there is a long run relationship between them. Consequently, the estimated equations represent long run cointegrating equations with estimated parameters shown in Table 1.

Table 1: Eq. (1) parameter estimates

Petroleum product / Country	α_0	α_1
ES95_HR	-3,694496***	0,750476***
ES95_CZ	-3,871039***	0,787455***
ES95_HU	-3,734588***	0,759969***
ES95_PL	-3,517261***	0,720007***
ES95_SI	-3,841466***	0,775485***
ES95_SK	-3,706959***	0,747803***
DIESEL_HR	-3,563657***	0,738922***
DIESEL_CZ	-3,578305***	0,741776***
DIESEL_HU	-3,441223***	0,711685***
DIESEL_PL	-3,707564***	0,745653***
DIESEL_SI	-3,598227***	0,733445***
DIESEL_SK	-3,654243***	0,757644***

ES95 stands for Eurosuper95, HR – Croatia, CZ – Czech Republic, HU – Hungary, PL – Poland, SI – Slovenia,
SK – Slovak Republic
(*),(**),(***) indicating;10%, 5%, 1% significance level; respectively.
Source: Authors

All calculated parameters are statistically significant at the 1% level. Results show that α1 parameter values range from 0.71 to 0.78 indicating that oil to petrol prices pass-through ranges from 71% to 78%. The average value of the parameter α_1 is slightly higher for Eurosuper95. All calculated parameter α_1 values are less than 1which is typical for imperfect markets where price pass-through is not complete. The fact that the oil price pass-through is not complete could be explained by oil not being the only variable to determine petrol end prices in the long run; for example, refining costs, shipping and other transportation costs, storage costs, marketing, etc. also determine retail petrol and diesel prices (Bambergerand and Pirog, 2008, p. 9).

The results of the symmetric ECM (Eq. 2) are reported in Table 2.

Table 2: Eq. (2) parameter estimates

Petroleum product / Country	β_1	β_2
ES95_HR	0,218546***	-0,278483***
ES95_CZ	0,069992**	-0,190920***
ES95_HU	0,150771***	-0,249725***
ES95_PL	0,076423***	-0,169092***
ES95_SI	0,099441***	-0,276565***
ES95_SK	0,101242***	-0,197917***
DIESEL_HR	0,141466***	-0,211858***
DIESEL_CZ	0,045321**	-0,202584***
DIESEL_HU	0,073262***	-0,212898***
DIESEL_PL	0,138133***	-0,142429***
DIESEL_SI	0,018021	-0,223921***
DIESEL_SK	0,039557**	-0,149417***

(*),(**),(***) indicating;10%, 5%, 1% significance level; respectively.
Source: Authors

The coefficients β_1 are statistically significant and positive indicating that petroleum product prices change in the same direction as oil prices. All estimated β_2 parameters are negative, as expected, and statistically significant, reaffirming the existence of a long-term relationship between the variables. The average value of β_2 for Eurosuper95 is -0.2271, and -0.1905 for Diesel, indicating price adjustment speed for Eurosuper95is lower than of Diesel. Price adjustment of Eurosuper95 takes, on average, just over four weeks, while Diesel price adjustment of price of diesel takes, on average, more than five weeks.

Comparing δ_2 and δ_3 parameter estimates (reported in Table 3), one can conclude that oil companies adjust both Eurosuper95 and Diesel prices upwards faster than downwards, however, none of the differences in the adjustment speed are statistically significant. Calculated p-values for Wald statistics exceed 0.10 in all estimated equations indicating that a null hypothesis of no APT cannot be rejected.

To perform a robustness check, the initial time series are split in two; the first part (Sample 1) included data from January 2005 to December 2008, and the second from January 2009 to June 2013 (Sample 2, for Croatia; to December 2012). The subsequent analysis reaffirmed that, in the long run, oil prices and petroleum product prices are co-integrated. Estimated parameters α_0 and α_1 (Eq. (1)) are all statistically significant at the 1% level. Results (omitted to save space) indicate α_1 estimated values ranging from 0.66 to 0.82 in Sample 1 (with average value 0.73), and from 0.71 to 0.83 in Sample 2 (average value 0.74). In relation to the values obtained in the original sample (from 0.71 to 0.78), estimated value range is greater in both samples. The average value of α_1 for Eurosuper95 is slightly higher in Sample 2 ((1) 0.73 < 0.74(2)); as is the case for Diesel ((1) 0.71 < 0.79(2)). These differences indicate that the oil price to petroleum product price pass-through is somewhat greater in the second sample, especially for Diesel prices. The plausible explanation could be a higher degree of competition between oil companies.

Table 3: Eq. (3) parameter estimates, Wald statistics

Petroleum product / Country	δ_2	δ_3	Wald statistic	*p*-value
ES95_HR	-0,24589***	-0,318928***	1,270473	0,2047
ES95_CZ	-0,174623***	-0,204630***	0,784860	0,4330
ES95_HU	-0,220477***	-0,280023***	1,197126	0,2319
ES95_PL	-0,163180***	-0,177732***	0,464999	0,6422
ES95_SI	-0,272442***	-0,281344***	0,186747	0,8520
ES95_SK	-0,190458***	-0,205164***	0,451043	0,6522
DIESEL_HR	-0,235162***	-0,184782***	-1,262278	0,2076
DIESEL_CZ	-0,195186***	-0,213402***	0,596423	0,5512
DIESEL_HU	-0,201891***	-0,232191***	0,834718	0,4044
DIESEL_PL	-0,112604***	-0,173538***	1,636620	0,1025
DIESEL_SI	-0,219312***	-0,230041***	0,308153	0,7581
DIESEL_SK	-0,137864***	-0,170213***	1,400404	0,1621

(*),(**),(***) indicating;10%, 5%, 1% significance level; respectively. The null hypothesis for Wald test is H_0; $\delta_2 = \delta_3$, i.e. there is no significant difference in the adjustment speeds when prices are above and below their equilibrium level.
Source: Authors

Short term oil-petroleum price dynamics for Samples 1 and 2 are shown in Table 4. In Sample 1 the only statistically insignificant parameter was β_1 for Diesel market in Slovenia; in Sample 2 he was accompanied by four more; β_1 for Eurosuper95 market in Czech Republic and Slovenia, and Diesel market in Czech and Slovak Republic.

Table 4: Eq. (2) parameter estimates, Samples 1 and 2

Petroleum product / Country	Sample 1		Sample 2	
	β_1	β_2	β_1	β_2
ES95_HR	0,2492***	-0,2647***	0,1722***	-0,3065***
ES95_CZ	0,1038**	-0,2066***	0,0056	-0,2871***
ES95_HU	0,1602***	-0,2593***	0,1283***	-0,2894***
ES95_PL	0,1213***	-0,1712***	0,0764***	-0,1690***
ES95_SI	0,1472***	-0,2647***	0,0223	-0,3089***
ES95_SK	0,1299***	-0,2401***	0,0442*	-0,1799***
DIESEL_HR	0,1682***	-0,2632***	0,1194***	-0,2475***
DIESEL_CZ	0,0686**	-0,1888***	0,0393	-0,2736***
DIESEL_HU	0,0774**	-0,2051***	0,0909**	-0,2593***
DIESEL_PL	0,2118***	-0,1336***	0,1381***	-0,1424***
DIESEL_SI	0,0484	-0,2546***	0,0061	-0,3006***
DIESEL_SK	0,0655**	-0,1488***	0,0113	-0,1484***

(*),(**),(***) indicating;10%, 5%, 1% significance level; respectively.
Source: Authors

If we recall that the parameter β_1 explains how changes in the independent variable, the price of oil, at time *t* affect the change in price of petroleum product at time *t,* all the coefficients would be expected to be statistically significant and positive, meaning that; depending on changes in oil prices, petroleum product prices move in the same direction (upward/downward).

Interestingly, in Sample 2 almost half of β_1 coefficients are not statistically significant. The analysis is not able to offer an adequate explanation of this phenomenon, so it is advisable to carry out additional analysis to detect the cause of this phenomenon. In any case, one can conclude that in the second sample the nature of the impact of oil prices on petroleum products has changed.

All β_2 parameters are negative and statistically significant reaffirming long-term relationship between oil and petroleum product prices. Calculated β_2 parameters vary between -0.1336 and -0.2647 in Sample 1, and between -0.1424 and -0.3089 in Sample 2, stating a greater range of estimated parameters in recent history.

More important, however, is the comparison of coefficients between samples in order to determine whether there has been an increase in the adjustment speed of petroleum product prices that could indicate an increase in competition in the market. Generally, an increase in petroleum prices adjustment speed was found, with the exception of the following cases; Eurosuper95 price adjustment speed is slightly lower in Poland in recent history, and in Slovak Republic; the same goes for Diesel prices in Croatia. To sum up, the following conclusion can be drawn; in recent history, petroleum product prices adjust more quickly to changes in global oil prices.

Finally, the estimated parameters of the asymmetric ECM model for subsamples are given in tables 5 and 6.

Table 5: Eq. (3) parameter estimates, Wald statistics, Sample 1

Petroleum product / Country	δ_2	δ_3	Wald statistic	*p*-value
ES95_HR	-0,2244***	-0,3156***	1,0887	0,2776
ES95_CZ	-0,2067***	-0,2064***	-0,0047	0,9962
ES95_HU	-0,1998***	-0,3256***	1,7216	0,0867*
ES95_PL	-0,1912***	-0,1385***	-1,1982	0,2322
ES95_SI	-0,2595***	-0,2712***	0,1641	0,8696
ES95_SK	-0,3638***	-0,1192***	-2,7496	0,0065***
DIESEL_HR	-0,2865***	-0,2280***	-0,8688	0,3860
DIESEL_CZ	-0,2123***	-0,1517***	-1,5717	0,1176
DIESEL_HU	-0,1989***	-0,2186***	0,4120	0,6808
DIESEL_PL	-0,0996***	-0,1684***	0,7314	0,4654
DIESEL_SI	-0,2624***	-0,2414***	-0,3840	0,7013
DIESEL_SK	-0,1436***	-0,1611***	0,5484	0,5840

(*),(**),(***) indicating;10%, 5%, 1% significance level; respectively
Source: Authors

While all the estimated coefficients are statistically significant at the 1% level, Wald test statistics indicate that the differences between δ_2 and δ_3 are not statistically significant, in any of the estimated relations in Sample 1; as an exception, the empirical significance level is

below 10% in relation to the estimated price of Eurosuper95 in Hungary, and below 1% in Slovak Republic. In the case of Slovak Republic, the price asymmetry is negative. Evidence in favor of the APT is found in four out of twelve cases in Sample 2; in Czech and Slovak Eurosuper95 markets and Czech and Slovenian Diesel markets; where companies adjust prices upwards faster than downwards.

Table 6: Eq. (3) parameter estimates, Wald statistics, Sample 2

Petroleum product / Country	δ_2	δ_3	Wald statistic	*p*-value
ES95_HR	-0,2943***	-0,3208***	0,3484	0,7279
ES95_CZ	-0,1594***	-0,3997***	2,8695	0,0045***
ES95_HU	-0,2560***	-0,3271***	0,9852	0,3256
ES95_PL	-0,1811***	-0,1512***	-0,6091	0,5428
ES95_SI	-0,2712***	-0,3541***	1,3240	0,1869
ES95_SK	-0,1044***	-0,2556***	4,0207	0,0001***
DIESEL_HR	-0,2331***	-0,2630***	0,3248	0,7457
DIESEL_CZ	-0,1192***	-0,3505***	3,8426	0,002***
DIESEL_HU	-0,2832***	-0,2292***	-0,5224	0,6019
DIESEL_PL	-0,1043***	-0,1821***	1,3114	0,1904
DIESEL_SI	-0,2466***	-0,3601***	2,2040	0,0286**
DIESEL_SK	-0,0707***	-0,1252***	1,1268	0,2611

(*),(**),(***) indicating;10%, 5%, 1% significance level; respectively
Source: Authors

The results suggest that APT is not a continuous feature of petroleum product markets but can be found at shorter periods of time making it harder to detect it when analyzing longer time series. This is an important notion for further research indicating the importance of the length of the time series as well as data frequency.

6. Concluding remarks

The paper offers an empirical verification of the existence of asymmetric price transmission in petroleum product markets of post-transition CEE countries; Croatia, Czech Republic, Hungary, Slovenia, Slovak Republic and Poland. Long run and short run oil prices – petroleum product prices relationship is estimated using ECM methodology on weekly prices from January 2005 to June 2013. After the initial analysis, robustness check is performed by splitting the original sample in two (in term of time series length).
There is a long run, oil to petrol prices relationship; in all analyzed markets, i.e. oil prices and petrol prices are cointegrated. Long run cointegrating equation parameters indicated that the oil price to petroleum product price pass-through is incomplete; varying from 66% to 83%. This finding is somewhat expected because it is typical of imperfect markets, and the analyzed markets are mostly oligopolistic; dominated by a few national/regional oil companies: OMV, MOL, Slovnaft, RWE, INA, Petrol, PKN Orlen and others. The pass-through is somewhat better in the 2nd subsample which could indicate a higher degree of competition. Incomplete adjustment of prices of petroleum products can be further explained

by; for example, refining costs, shipping and other transportation costs, storage costs, marketing, etc. that also affect retail petrol and diesel prices.

Average petroleum product prices adjustment speed varies from four to seven weeks, while Eurosuper95 prices adjust faster than Diesel prices. Again, robustness check results indicate that the speed of adjustment has, on average, reduced in the 2nd subsample. As Socha (2014) states, retailers adjust gasoline prices much faster because it is mostly purchased by households as oppose to diesel that is predominately purchased by businesses.

Estimated asymmetric ECM results suggest complete absence of asymmetric price transmission when whole sample period is taken under consideration. This result is in line with the results of Farkas et al. (2009), Koltay (2012), Croatian National Bank (2018) and Szomolányi et al. (2019). However, when the original sample is split in two, there was almost no evidence of APT in Sample 1 but in Sample 2, APT seemed to be present in 33,33% of the analyzed cases. The following conclusion can be drawn: APT is not necessarily a continuous feature of petroleum product markets but can be found at shorter periods of time, mostly linked to greater oil price fluctuations, primarily oil price spikes. Additionally, EU membership did seem to improve fuel market competition in CEE countries or, to be precise, fuel market competition in the analyzed markets did improve in the 2nd subsample.

A significant contribution to the quality of APT research would be to perform the analysis using daily data; it is advisable to harmonize data frequency with the frequency of petroleum product price changes. Also, analyzing long periods of time seems to be counterproductive, as evidenced also by Perdiguero-Garcia (2013). Longer periods of time include heterogeneous market conditions as well as market behavior. For instance, our results indicated a loosening in the relationship between oil prices and petroleum prices (β_1) in the 2nd subsample implying the nature of the impact of oil prices on petroleum products has changed. Perhaps this might be explained by Fostens (2012) evidence of asymmetric pricing behavior only emerging after the strong exogenous shock of 2008 oil spike. It would also be advisable to use spatially disaggregated (subnational level) data for it is presumptuous to assume that all operators in the market of petroleum products act the same (in terms of pricing policy).

Policy implications of this paper are directed primarily toward improving petroleum product pricing transparency. These commodities are of high importance to a wide range of stakeholders at national level, therefore, adopting laws that would enable exact analysis would be beneficial in terms of providing an excellent platform for informed policy decision making.

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FISCAL CONSERVATISM AND RE-ELECTION PROSPECTS: IT IS THE SAME PRINCIPLE, THE REST IS JUST DETAILS[1][2]

ABSTRACT

This paper considers the validity of the economic theory of voting in the case study of Eastern Croatia's (Tax Administration office classification) local government units (cities and municipalities). Political economy theory offers two main explanations regarding voters' preferences during the electoral cycle: fiscal liberalism and fiscal conservatism. While the former thesis refers to conventional wisdom in which expansionary fiscal policy increases the incumbents' re-election prospects, the latter thesis implies that prudent fiscal behaviour is rewarded by voters. Thus the paper aims to answer two research questions. First, are voters fiscal conservatives or fiscal liberals? And second, do they have a right wing bias? The sample includes cities and selected municipalities from the following five Eastern Croatia's counties: Virovitica-Podravina, Požega-Slavonia, Brod-Posavina, Osijek-Baranja and Vukovar-Srijem. The sample stated is interesting due to its path dependency during the 1990s (war experience) and the 2010s (emigration tendencies) which all represent important singular shocks not present to that extent in the remaining parts of Croatia. To investigate whether and how the management of public finances at the local government level affects the incumbents' re-election prospects, the paper considers data on election outcomes in 2013 and 2017 (the last two local election cycles). With respect to the methodology, random and fixed effects probit and logit models are employed. The main result suggests that voters reward increases in total expenditures in election years, hence they are not fiscal conservatives. Additional results confirm that lower budget transparency increases the probability of the re-election of incumbents and that there is no statistically significant right wing bias among the electorate.

Keywords: Re-election, Fiscal conservatism, Fiscal liberalism, Croatian local government, Panel data analysis.

1. Introduction

Recently deceased singer-songwriter Đorđe Balašević left a significant void which can only be marginally fulfilled by his legacy, both in music and everyday (political?) life. If words are all that will be left behind, Đorđe Balašević left us several volumes of Encyclopaedia Britannica. One of those words is "..it is the same principle, the rest is just details.." from his famous song *Pesma o jednom petlu*.

For the last 14 years, students at the Faculty of Economics and Business in Zagreb that have enrolled in Principles of Economics and/or Political Economy class have known these words as the so-called Balašević theorem. They describe a procedure in which an individual repeats the same procedure over and over ("…it is the same principle…") in different circumstances ("…the rest is just details…") with one goal in mind: maximisation of welfare. The application of this principle stretches from calculation of marginal utility, marginal costs and revenues to the opportunistic behaviour of politicians in an election year. It is exactly the latter case where we will apply the Balašević theorem.

Local elections in Croatia are exogenously determined and held every four years in May (with the exception of the 1993 local elections which were held in February and the 1997 local elections which were held in April). In May 2021 the 8th round of local elections is set to take place which distinguishes Croatia from the group of countries with low experience with democracy. In such an environment voters' preferences tend to evolve and incumbents' strategies change from one electoral cycle to the other. But the principle stays the same (maximising the utility function) with respect to the details (informational constraints).

The aim of the paper is to answer two research questions. First, are voters in selected local units in Eastern Croatia (Slavonia and Baranja) fiscal conservatives or fiscal liberals? Political economy literature sets both of these voting strategies as possible, with fiscal liberalism being an extended arm of the economic theory of voting. Namely, an expansionary fiscal (budget) policy increases the voters' disposable income thus making them more inclined to the incumbent. On the other hand, if voters reward the incumbent's prudent fiscal behaviour (e.g. positive budget balance in the election period) that would make them fiscal conservatives. One might wonder why voters would punish incumbents who provide them with more public goods and services. There are several possible answers that range from the so-called dynastic preferences (voters are not certain how this increase in the supply of public goods and services in the election period was financed and whether it included an increase in the public debt), experience with democracy (Brender and Drazen's (2008) learning effect) to ideological preferences of voters.

Due to the two singular shocks that have hit Eastern Croatia in the 1990s (war experience) and 2010s (emigration tendencies) one might reasonably expect that voters in Slavonia and Baranja have right wing preferences. Election results at the local and national level tend to confirm such an assumption (State Electoral Commission, 2021) regardless of emigration tendencies in the last 10 years. This raises the question of the political stubbornness of voters which was indirectly addressed by Ott et al. (2019). All of the aforementioned leads us to our second research question: do voters in selected local units in Eastern Croatia have a right wing bias, i.e. do incumbents who are members of the Croatian Democratic Union (HDZ) or the Croatian Democratic Alliance of Slavonia and Baranja (HDSSB) have a bigger chance of re-election? If that is the case, one might expect that these incumbents are not stressed out during election periods. In simple economic words, their voters do not require additional fiscal stimulus to vote for them. Thus, they will not indulge in pre-election budgetary manipulations.

The paper derives the following hypothesis from the research questions: voters in selected 47 local units in Eastern Croatia, in the 2013-2017 period, are fiscal conservatives who punish incumbents for their loose budget performance in election years.

This paper supplements the literature in the following manner. Upon providing a comprehensive theoretical and empirical overview of the electoral cycles and voting strategies, the paper sets up a non-linear panel data analysis in this unique setting. Namely, this is the first empirical estimation of voting strategies on local units in Croatia that includes a measure of on-line local budget transparency (Ott, K., et al., 2013, 2018).

The rest of the paper is organized as follows. Section 2 presents a literature review in the field of electoral cycles, both theoretical and empirical papers. Data and methodology are presented in Section 4 while Section 5 presents the results of a non-linear panel data analysis and Section 6 the conclusion.

2. Literature review

Since the 1970s the impact of the economy on election results has received wide theoretical and empirical attention in the political economy literature (Drazen, 2000). Due to the increase of available data used in empirical research and the development of different theoretical models and political decisions (e.g. independence of central banks and introduction of independent fiscal boards and councils), it still remains one of the most fluent and productive parts of the field.

Origins of this research area can be found in the so-called Downsian model of the political business cycle (Mueller, 2008) and Wagner's (1966) concept of political entrepreneur. According to Downs (1957: 28) "parties formulate policies in order to win elections rather than win elections in order to formulate policies". In a nutshell, it is winning that matters. An incumbent maximizes his in the political market (re-election) in the same manner as the consumer maximizes his utility on the economic (private) market (consumption). *Homo economicus* and *homo politicus* are one and the same.

Drazen (2000) notes that the first papers that investigated the relationship between elections and (macro)economic aggregates were authored by Kramer (1971) and Tufte (1975, 1978). While their focus was on the Congressional election results, a study by Fair (1978) examined the outcome of the US presidential elections.

Modern theory on political business cycles, according to Van der Ploeg (1987) starts with a paper titled "The Political Business Cycle" authored by William Nordhaus (1975). Based on adaptive expectations of economic agents, Nordhaus models an economy where governments in democratic societies try to maximise their re-election chances by manipulating economic outcomes.

This simple, and for some even evident observation, will remain the cornerstone of future research. While most of Nordhaus' initial assumptions in the model have changed or loosened (e.g. introduction of rational expectation, independence of central banks, etc.) the core still remains the same. Namely, the political business cycle theory suggests that politicians systematically manipulate economic conditions in order to increase their chances of re-election (Drazen, 2000, 2008, 2008a; Persson and Tabellini, 2000). As mentioned, modifications and upgrades have also come in the form of instruments used or goals that are set in the model by the incumbents. Thus, one branch of models focuses on macroeconomic variables (growth, inflation and unemployment rates), while the other branch seeks confirmation on the existence of cycles in the fiscal variables (budget balances, level and/or structure of government expenditures and tax revenues, public debt). The latter group of researchers tend to classify

these cycles as political budget cycles (Drazen, 2008; Dubois, 2016). Most of the authors (Drazen, 2000; Persson and Tabellini, 2000) classify political business cycles and political budget cycles as the new political economy, while Snowdon and Vane (2005) label it as political macro economy and Lohmann (2006) as macro political economy.

Prior to the emergence of political business cycles or political budget cycles theory, the role of the government, in economic models, was seen as a pure exogenous one. Government was modelled as a social planner which is solely responsible for maximizing the social welfare function. It was assumed that maximizing this function coincides with the utility function of the so-called representative agent in the economy. Both political business cycles and political budget cycles theory introduced *ex ante* and *ex post* heterogeneous preferences on the side of economic agents which made the use of a representative agent in these models useless. Furthermore, both theories on cycles stipulate that governments are either driven by private interests and care only about their re-election prospects or are driven by partisan interests and thus during electoral terms and/or election years are creating cycles in (macro)economic and fiscal variables. In the first case, the literature is labelling those cycles as opportunistic political business or political budget cycles and in the second, as partisan political business or political budget cycles (Drazen, 2000; Drazen, 2008a; de Haan, 2013, Dubois, 2016). This study will focus on the first class of models – opportunistic political budget cycles that focus on cycles in fiscal instruments.

Within political budget cycles literature several different models have appeared with alternative working mechanisms. The first generation of models focused on information asymmetry (Rogoff and Siebert, 1988 and Rogoff, 1990), the second on moral hazard (Persson and Tabellini, 2000 and Shi and Svensson, 2006) and the third on asymmetric preferences of the incumbent (Drazen and Eslava, 2010). Due to the assumptions (level of budget transparency and incumbent's competence), outcomes (pooling versus separating equilibrium) and repercussions (under which conditions manipulation of fiscal instruments takes place and whether this is a positive or a negative thing) of the stated model, this study will be based on the second generation of political budget cycles. Its focus on local level and fiscal instruments under the control of local incumbents, as well as the availability of on-line local budget transparency indicator (OLBI) reaffirm this decision.

One often neglects the role of voters in the political business or political budget cycles theory. While theoretical foundations and empirical confirmation have been found for both opportunistic and partisan behaviour on the behalf of incumbents (Dubois, 2016), the role of voters has received less attention. The literature inherently accepts the notion of economic theory of voting, i.e. voters tend to vote for the incumbent that improves their well-being. But this conclusion, once applied to the theory of political budget cycles, leaves a lot of uncovered ground. Does this mean that voters are fiscal liberals who would support the incumbent who runs budget deficits during his electoral term? This should be so, but what if we are looking at a sample with clear ideological preferences (i.e. Eastern Croatia) or a sample of well-off regions with long and established democratic institutions (Brender and Drazen (2008) concept of old democracies)? Could voters under those circumstances be fiscal conservatives who punish incumbents for their relaxed fiscal behaviour?

Cho (2007) lists two competing voting strategies: prospective and retrospective. The first strategy rests on the promises given by politicians to the voters during the election campaign, while in the second strategy the voters' decision depends on the incumbent's results during his

term in office. It is assumed that voters will reward or punish the incumbent based on his track record.

A micro model of retrospective voting can be written as (Kiewiet and Rivers, 1984):

$$v_{it} = \beta x_{it} + u_{it}$$

where v_{it} denotes the measure of support that voter *i* is providing to the incumbent in the period *t*, x_{it} denotes the change in the voter's disposable income in the election year and u_{it} denotes the impact of other variables on voting.

Since one can divide the variable x_{it} in two parts in order to distinguish the direct effect of incumbents decisions on the voter's disposable income (variable g_{it}) and the random effect (variable e_{it}), rational voters that focus on incumbents track record in the office can easily decide whether or not to support him during the elections:

$$x_{it} = \beta g_{it} + e_{it}$$

The existing empirical evidence supports the view that benign economic conditions help incumbents stay in office (Frey and Schneider, 1978; Akhmedov and Zhuravskaya, 2004, Drazen and Eslava, 2010; Klomp and de Haan, 2013). The aforementioned papers cover both parliamentary and presidential elections all over the world, and are also focused on local and national elections.

On the local level in Israel (Brender, 2003), Russia (Akhmedov and Zhuravskaya, 2004), Portugal (Aidt et al., 2011), Columbia (Drazen and Eslava, 2010) and Argentina (Jones et al., 2012) an economic theory of voting was confirmed in the sense that an opportunistic model of political budget cycles resulted in the incumbent's re-election. Furthermore, Arvate et al (2009) provide evidence that voters are fiscal conservatives that actually remove incumbents who create budget deficits in election periods, thus indicating that the level of sophistication among voters is a decisive determinant. In Croatia, the empirical research is almost non-existent except for the study by Glaurdić (2018) who examines local elections and reports that voters in local elections in Croatia are fiscal liberals. There is one more paper that can fit into this research area since it examines the relationship between corruption and re-election (Vuković, 2019). Pelzman's (1992) research in the USA looked at presidential, governor and Senate elections and actually pointed out the conclusion that voters dislike opportunistic incumbents who manipulate fiscal policy instruments in the election period. In other words, voters in the USA are fiscal conservatives. That conclusion was at odds with Frey and Schneiders' (1978) paper that looked at the macroeconomic outcomes for the USA and reported opposite findings.

On the national level, Brender and Drazen (2008) provide evidence that voters in developed economies and in "old democracies" are fiscal conservatives. Creating a budget deficit either decreases incumbents' re-election chances or is not statistically significant. Klomp and de Haan (2013) report the opposite conclusion regardless of the maturity of the democracy, although the effect is rather small. Please note that it is important to differentiate among the methodology, since Brender and Drazen (2008) use logit models and Klomp and de Haan linear panel models (2013).

Although the term fiscal conservatism is derived from voters' preferences and thus clearly established within political economy literature, desk research pointed to some other uses of the

phrase fiscal conservatism within economic theory that can be mentioned. The term touches upon the impact of income inequality and redistributive taxation (Saint-Paul, 2001), public debt crisis, social conflict and delayed stabilisation in Latin America (Laban and Sturzenegger, 1994) and migration and access to social welfare programs (Huber and Espenshade, 1994). Since the goal of the paper is clearly established, it will focus solely on papers that deal with electoral cycles and voting preferences.

Additionally, it is clear from the empirical papers presented, that the literature has not settled its findings on voters' preferences (fiscal liberalism vs. conservatism) and that results obtained depend on the context. As mentioned earlier, the goal of this study is to contribute to the literature by exploring voters' preferences in this unique context.

3. Data and Methodology

The sample consists of 21 cities and a random sample of 26 municipalities within Eastern Croatia (Slavonia and Baranja). The size of the sample was residually determined due to the fact that in 2013 the Institute of Public Finance conducted the first round of its annual survey on the online local budget transparency. Namely, during that first round researchers from the Institute of Public Finance covered all cities and a random sample of 100 municipalities in Croatia. Out of those 100 municipalities, 21 were located in the five counties (Virovitica-Podravina, Požega-Slavonia, Brod-Posavina, Osijek-Baranja and Vukovar-Srijem) that belong to the Tax Administration office's (Tax Administration, 2021) region of Eastern Croatia (Slavonia and Baranja). From 2014 all 576 local units in Croatia were included in the Institute's survey, thus making it impossible to increase the sample in this paper.

Thus, the panel is strongly balanced with a time dimension covering the 2013 – 2017 period and 47 local units. Table 1 gives an overview of all variables that were used in the empirical research (label, description, time dimension and source). With respect to the stated hypothesis that voters in the sample are fiscal conservatives, the expected sign was added as the fifth column in the Table.

Please note that variables of interest are the three interaction variables (EY_BAL, EY_OLBI and EY_LTEPC), while the economic control variable (LIPC) and the political variable (TOV and HDZ) reflect the results that stem from political economy literature on economic theory of voting (the role of income) and rational ignorance of voters (the role of ideology).

Table 1: Definition of variables

Variable	Description	Variable	Time dimension	Expected sign	Source
RE-ELECTION	Dummy / binary variable (1 denotes re-election and 0 otherwise)	Dependent			State Electoral Commission (2021)
BALPC	Budget balance per capita (total revenue – total expenditures)	Independent	2013-2017	0 or +	Ministry of Finance (2021)
LTEPC	Log value of total expenditures per capita	Independent	2013-2017	-	Ministry of Finance (2021)
EY	Dummy / binary variable (1 denotes election year and 0 otherwise)	Independent	2013 and 2017	/	State Electoral Commission (2021)

Variable	Description	Variable	Time dimension	Expected sign	Source
LIPC	Log value of average annual resident income per capita	Independent (control)	2013-2017	+	Ministry of Regional Development and EU Funds.
OLBI	On-line local budget transparency index (ranging from 0 to 3), measures whether a local government unit published on its website the executive budget proposal, the enacted budget, and the citizens' guide.	Independent (control)	2013-2017	+	Ott et al. (2018)
COAL	Dummy / binary variable (1 denotes coalition of two or more parties in local assembly and 0 otherwise)	Independent (political)	2013 and 2017	+	State Electoral Commission (2021)
TOV	Turnout of voters in the election years (percentage of total number of voters in the local unit)	Independent (political - control)	2013 and 2017	+	State Electoral Commission (2021)
HDZ	Dummy / binary variable (1 denotes that incumbent is a member of HDZ or HDZ led coalition and 0 otherwise)	Independent (political - control)	2013 and 2017	+	State Electoral Commission (2021)
HDSSB	Dummy / binary variable (1 denotes that incumbent is a member of Hrvatski demokratski sabor Slavonije i Baranje (HDSSB) or HDSSB led coalition and 0 otherwise)	Independent (political)	2013 and 2017	+	State Electoral Commission (2021)
EY_BAL	Interaction variable (budget balance per capita in the election year)	Independent	2013 and 2017	0 or +	State Electoral Commission (2021) and Ministry of Finance (2021)
EY_OLBI	Interaction variable (OLBI level in the election year)	Independent	2013 and 2017	+	State Electoral Commission (2021) and Ott et al. (2018)
EY_LTEPC	Interaction variable (log value of total expenditures per capita in the election year)	Independent	2013 and 2017	-	State Electoral Commission (2021) and Ministry of Finance (2021)

Note: all per capita values are based on population estimates from the Croatian Bureau of Statistics (2021)
Source: Author

In order to test whether increasing per capita expenditures or creating a budget deficit increases incumbents' re-election chances, the study employs non-linear panel data models, namely logit and probit models. Out of the three different types of models with a binary independent variable, the linear probability model and the logit and probit models, the study excludes the linear probability model since it assumes that the response probability is linear in a set of parameters β_j.

Logit or logistic regression represents a special form of regression analysis in which the independent variable is binary (taking the value of 1 or 0, or in our case re-election or loss of elections). We model the probability as a function:

$$P(y = 1 \mid x) = G(b0 + xb)$$

where $0 < G(z) < 1$. One choice for $G(z)$ is the standard normal cumulative distribution function: $G(z) = F(z) \equiv \int f(v)dv$, where $f(z)$ is the standard normal, so $f(z) = (2p)^{-1/2} \exp(-z^2/2)$. This case is referred to as a probit model, while another common choice for G(z) is the logistic function, which is the cumulative distribution function for a standard logistic random variable: $G(z) = \exp(z)/[1 + \exp(z)] = L(z)$. This case is referred to as a logit model. Both the probit and logit models are nonlinear and require maximum likelihood estimation.

This study estimates the following equation:

$$P(y_{it} = 1) = \mu_0 + \mu_1 EY\_LTEPC_{it} + \mu_2 EY\_OLBI_{it} + \mu_3 LIPC_{it} + \mu_4 TOV_{it} + \mu_5 HDZ_{it} \quad ($$
$$+ \varepsilon_{it}, i = 1, \dots N, t = 1, \dots T$$

for probit random effects and logit random and fixed effects model. The data and results are presented in the next part of the paper.

4. Non-linear panel data analysis

The first step in the empirical analysis of potential fiscal conservatism in Slavonia and Baranja is the descriptive analysis. Table 2 provides summary statistics for our dependent and 12 independent variables in the chosen sample. There are several interesting findings worth the attention.

Table 2: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
RE-ELECT	260	0.77	0.41	0	1
EY_BAL	260	-16.99	226.07	-1954.58	1023.01
EY_OLBI	260	0.45	0.79	0	3
EY_LTEPC	260	2.80	3.74	0	8.63
OLBI	260	1.05	0.87	0	3
LIPC	260	9.90	0.25	9.30	10.43
EY	260	0.40	0.49	0	1
HDZ	260	0.58	0.49	0	1
HDSSB	260	0.14	0.35	0	1
COAL	260	0.62	0.48	0	1
TOV	260	51.97	6.97	30.42	70.36
BALPC	260	33.08	406.19	-1954.58	1454.55
LTEPC	260	7.70	0.38	6.338	8.82

Source: Author

First, the mean value of budget balance per capita in our local units in election years is negative (-16,99), while in the overall period the mean value of budget balance per capita is positive (33,08). This should point to the incumbent's opportunistic motives, which is in line with the

theory on political budget cycles (Rogoff and Siebert, 1988; Rogoff, 1990; Persson and Tabellini, 2000; Shi and Svensson, 2006) and the existing empirical research on the local units in Croatia (Mačkić, 2013).

Second, the mean value of OLBI in election years is lower (0,45) compared to its mean value in the overall period (1,05). The second generation of political budget cycles literature clearly identifies the lack of transparency as the driving force behind the budget cycle in election periods (Persson and Tabellini, 2000 and Shi and Svensson, 2006). Furthermore, there is significant literature that ties local budget transparency and election periods (Tejedo-Romero and de Araujo, 2016; Alcaide Muñoz et al., 2017).

Third, the political situation seems monolithic at first glance. Namely, the mean value of re-elation is 0,77, which indicates that less than one quarter of voters in local units use elections as a discipline device vis-à-vis the incumbents' performance in office. Voters in Slavonia and Baranja are indeed stubborn at the level of Croatia as a whole, as Ott et al (2019) concluded. More than half of local units in the sample had a coalition government (0,62) and the turnout was roughly more than 50 % in the 2013 and 2017 elections. With respect to the ideological stance of local units, more than half of them (0,58) had local officials from HDZ ranks. Once a significant political power in Eastern Croatia, the right wing regional party HDSSB also recorded a non-negligible part of local units (0,14) under its electoral control during the observed time period.

Probit and logit random and fixed effect panel data models are estimated in Table 3 and 4. Since the empirical investigation did not yield any statistically significant results with budget balance per capita in election years (variable EYBAL) as the main independent variable of interest, although the sign was negative in the probit and logit random effects models, the model was rewritten. The next step was to replace variable EYBAL with log values of total expenditures per capita in election years (variable EYLTCPC). Table 3 presents these results.

Table 3: Total expenditures per capita - Estimated Probit and Logit Random and Fixed Effect Models

	PROBIT_RE	LOGIT_RE	LOGIT_FE
EY_LTEPC	0.371	0.612	1.051
	(0.107)***	(0.181)***	(1.357)
LIPC	-13.838	-18.172	-32.272
	(2.834)***	(9.420)*	(14.840)**
TOV	-0.008	-0.024	0.087
	(0.058)	(0.100)	(0.215)
_cons	143.718	192.143	
	(29.141)***	(95.356)**	
lnsig2u _cons	4.173	5.170	
	(0.395)***	(0.475)***	
N	260.0	260.0	65.0

* p<0.1; ** p<0.05; *** p<0.01
Source: Author

In a nutshell, the stated hypothesis on voters' fiscal conservatism is not accepted. In both probit and logit random effect models there is a statistically positive correlation between re-election chances and increase in total expenditures in the election period (0,371 and 0,612). This implies that voters reward local incumbents for their expansionary budgetary policies in election years, which was reported by Akhmedov and Zhuravskaya (2004) in the case of regional elections in

the Russian Federation, by Aidt et al. (2011) for the Portuguese local elections and Jones et al. (2012) for the Argentinean local elections.

One interesting result concerns the control variable LIPC. Namely, in all estimated models the sign is negative, i.e. the level of economic well-being decreased during the period 2013-2017 and the correlation between LIPC and re-election probability of an incumbent is statistically significant. There are several potential explanations for this result. First, according to the rational retrospective theory of voting, the voters were able to distinguish the effect that a local incumbent had on their disposable income (variable g_{it}) from other things that influenced their income to decline (a prolonged recession that lasted till 2015 in Croatia). Second, they acted in line with rational ignorance and voted strictly according to their ideology. Third, declining income in the observed time period triggered the "voting by feet" mechanism and those voters who were sensitive already left (Mačkić et al, 2019), thus leaving the ones who put far less ponder on the question of income when casting votes.

Table 4: Completed - Estimated Probit and Logit Random and Fixed Effect Models

	PROBIT_RE	LOGIT_RE	LOGIT_FE	PROBIT_RE	LOGIT_RE	LOGIT_FE
EY_LTEPC	0.662	1.180	1.028	0.560	1.182	1.026
	(0.235)***	(0.272)***	(1.022)	(0.124)***	(0.289)***	(1.030)
EY_OLBI	-1.752	-3.445	-0.824	-1.619	-3.408	-0.810
	(0.745)**	(0.954)***	(1.220)	(0.456)***	(0.994)***	(1.231)
LIPC	-7.983	-7.243	-21.357	-4.295	-7.977	-21.525
	(3.061)***	(5.052)	(18.112)	(1.810)**	(5.113)	(18.326)
TOV	0.003	-0.006	0.067	-0.048	-0.044	0.060
	(0.070)	(0.117)	(0.182)	(0.053)	(0.119)	(0.214)
HDZ				0.876	1.381	0.125
				(0.644)	(1.457)	(1.992)
_cons	87.348	84.093		48.518	92.152	
	(31.477)***	(52.037)		(18.859)**	(52.882)*	
lnsig2u _cons	4.558	5.353		3.379	5.277	
	(0.399)***	(0.365)***		(0.389)***	(0.375)***	
N	260.0	260.0	65.0	260.0	260.0	65.0

* p<0.1; ** p<0.05; *** p<0.01
Source: Author

The final step in the empirical analysis implied broadening our estimated non-linear panel data model. The obtained results are shown in Table 4. The model was first extended by introducing the measure of the online local budget transparency index in the election year (interaction variable EY_BAL). Probit and logit random effect models confirm its statistical significance (-1,752 and -3,445) but even more so they confirm clear opportunistic motivation on the behalf of incumbents. They decrease budget transparency in the election year while simultaneously increasing total expenditures whose estimated coefficients (0,662 and 1,180) in the model remain statistically significant. Voters tend to reward such behaviour, thus labelling them as fiscal liberals.

Both of these findings, on incumbents and voters, are in accordance with the second generation of the political budget cycles theory (Persson and Tabellini, 2000; and Shi and Svensson, 2006) that emphasises the lack of transparency as the driving mechanism behind the cycle. However, this result points to an interesting story. On the one side, incumbents are well aware that as the democratic experience evolves the voters tend to care more about public budgets, so they try to decrease the level of budget transparency in the election periods. On the other side, the learning

effect on behalf of the voters is still not fast enough. They are not fiscal conservatives, as the Brender and Drazen (2008) hypothesis on voters in "old democracies" would suggest. How much this conclusion owes to their clear ideological preferences (right wing due to the 1990s war experience in), versus sub-optimal media pressure and/or other interest group presence interested in public finance, is a very interesting research question.

The final extension to the model was done by introducing a variable that would control for the ideological aspect of voting, thus addressing our second research question. Data from Table 2 pointed to the HDZ as the party which holds office in the majority of local units that are in the sample, so we included it in our estimated model. These results are shown in the last three columns in Table 4.

Although there is a positive correlation between the HDZ and re-election chances for the incumbent, there is no statistically significant confirmation that a candidate, if he or she is a member of the HDZ, will have a higher chance of staying in office. The variable LIPC is only statistically significant in a probit random effect model, so the obtained results cannot be considered robust. The remaining results are unchanged, thus confirming the robustness of the model and the fact that voters in our sample are not fiscal conservatives. Obtained results are the same as reported by Glaurdić (2018). His empirical investigation confirmed that voters who were more exposed to war traumas of the 1990s, which applies to our sample, are indeed fiscal liberals. Thus, they see expansionary budget policy as something good and not as something that needs to be discouraged during electoral periods. This result is further confirmed in our study due to the inclusion of an on-line local budget transparency index.

5. Conclusion

The aim of the paper was to address the question of voter strategies in the local units in Eastern Croatia during two electoral cycles: 2013 and 2017. The observed sample included 21 cities and 26 municipalities due to the availability of the online local budget transparency index (OLBI). In return, data on OLBI allowed for the estimation of a unique model that was estimated for the first time in the Croatian context. Obtained results enabled the identification of the political budget cycles based on moral hazard as the optimal theoretical model with respect to the incumbent's practices in the election years (decreasing the level of transparency and increasing total expenditures). The methodology used in the analysis consisted of a non-linear panel data analysis (probit and logit random and fixed effect).

With respect to the stated research questions, empirical results reject the premise of fiscal conservatism and right wing bias within the electorate in Eastern Croatia. Voters in Eastern Croatia are fiscal liberals who tend to reward incumbents who increase total expenditures during election years. Their ideology does not have a statistically significant effect on incumbents' re-election chances. Consequently, the stated hypothesis was also rejected.

Future research should focus more on details when it comes to the fiscal preferences of voters. Namely, what influences their decisions in an environment that is characterised by stagnant or even deteriorating economic conditions (which was the case during the 2013-2017 period), low budget transparency and increasing total expenditures in election years? Could some insights from the public choice theory, e.g. introduction of new agents such as media and interest groups, cast light on these phenomena? Also, with a new round of local elections in 2021, there is enough data to cover all local units in Croatia for two consecutive electoral cycles (2017 and 2021) in a similar manner as in this study. An additional, interesting research avenue would be

to examine whether ideological matching on local and national levels plays a role when it comes to voter strategies.

This paper offered a clear and robust empirical estimation of voter strategies in local units in Eastern Croatia during the last two electoral cycles by using a measure of on-line local budget transparency for the first time. Overall, the obtained results are in line with the political economy literature with respect to both incumbents' and voters' behaviour in the election period. They both try to maximise their utility: incumbents increase total expenditures to remain in office and voters cast votes for incumbents who provide them with more goods and services in the election period. Indeed, it is the same principle; the rest is just details, as the Balašević theorem states.

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THE IMPACT OF THE COVID-19 PANDEMIC ON THE CROATIAN FINANCIAL SYSTEM

ABSTRACT

The outbreak of the pandemic COVID -19 caused a shock to the economic supply and demand and, with great uncertainty, led to a decline in the activity of the financial system. The financial system of the Republic of Croatia faces demanding challenges under these unfavourable conditions and the prospect of growth in the future. The negative impact of this crisis on the domestic financial system manifested itself in deflationary pressure on the domestic currency and a reduction in the assets of institutional investors due to price corrections on the capital markets and outflows from investment funds. The Croatian economy can be assessed as small and open, dependent on developments in the international market and highly sensitive to external shocks and crises. Nevertheless, the financial system is expected to recover thanks to historically low financing conditions and the highly liquid and capitalised domestic financial system. A prominent role in overcoming the crisis is played by economic policymakers and financial system regulators and supervisors. The aim of this paper is to examine the extent of contraction of investment activity of financial institutions in Croatia and to highlight the measures taken and implications of Croatian National Bank and Croatian Financial Services Supervisory Agency to ensure financial stability and liquidity. The conducted research is based on secondary data collected from the databases of relevant Croatian supervisory institutions. We applied statistical techniques to provide an overview of the course and characteristics of the Croatian financial system and, in particular, institutional investors, as well as the response of the supervisory authorities to mitigate the impact of the pandemic on the economy. These measures maintained the stability of the exchange rate, ensured the systemic stability of the national financial system and the efficient functioning of the economy.

Keywords: COVID-19 pandemic, financial crisis, financial institutions, CNB, Croatian economy.

1. Introduction

The 2019 global pandemic of coronavirus disease (COVID -19) had serious consequences for the European economy in a short period of time and required timely and decisive

macroeconomic measures. In line with coping with this "new normal" environment and the unique nature of the expected recession, governments and regulators took action to prevent a financial crisis. Financial system regulators implemented a number of different traditional measures, as well as some new and unconventional measures and decisions, to ensure economic and financial stability. Central banks responded by lowering their policy rates and providing liquidity to banks and non-bank financial institutions, which in turn eased the burden on firms and individuals affected by the severe disruptions (World Bank, 2020 a, b).

The Croatian economy was significantly affected by COVID -19, which threatened to trigger an economic crisis, as Croatia is a small and open economy with an overdependence on tourism. The implementation of the epidemiological measures restricted freedom of movement and free labor activity and caused a major negative impact on the real sector and financial development. The Croatian financial system suffered many losses and declines in assets, returns and loss of consumer confidence. Therefore, the Croatian government, Croatian National Bank (CNB) and Croatian Financial Services Supervisory Agency (Hanfa) took coordinated measures to mitigate the negative economic impact of the pandemic and maintain the stability of the domestic financial market. The Croatian government quickly adopted 63 different economic measures announced in early April 2020 to preserve jobs and mitigate the impact of COVID -19 (IMF 2020). A very big responsibility was on the side of the CNB, which, under conditions of great uncertainty and reduced liquidity, created the conditions to fight the consequences of extremely reduced economic activity. The measures provided additional liquidity, supported the government bond market and temporarily eased the regulatory burden on banks.

This article reviews recent macroeconomic and financial developments related to systemic risks, the deterioration of which can lead to significant losses for investors and, in extreme cases, threaten the stability of the entire financial system. The purpose of this article is to assess the timeliness, justification and appropriateness of the stimulus measures taken by the regulatory authorities in Croatia, i.e. CNB and Hanfa, to limit the economic impact of the pandemic COVID -19 after March 2020. Moreover, the problem of this paper is the actuality of the research topic and the insufficient examination of the corrected authority measures. These results constitute a valuable contribution to the re-examination of the proper implementation of monetary policy in the conditions of the new and surprising circumstances.

The paper is organized as follows. The introductory remarks provide an insight into the topic and the research problem. The second part summarizes the main characteristics of the Croatian financial system and describes the implications of the emergence of COVID -19. The third part reviews the measures taken by Croatian National Bank to keep the financial system stable and liquid due to the pandemic threats. The fourth part of the paper focuses on regulatory policy responses for the non-deposit financial sector in Croatia. Finally, the last section offers a conclusion.

2. Overview of Croatian financial system in awakening of pandemic crisis

The main features characterising the Croatian financial system are:
1. bank-centralised financial system,
2. underdeveloped but rapidly growing non-deposit financial intermediation,
3. underdeveloped and illiquid capital market.

Banks are the most important financial institutions, despite slower growth rates compared to other financial intermediaries. Non-deposit financial intermediaries account for more than a

quarter of the domestic market, reflecting the rapid growth of mandatory pension funds, the volatile movements of open-end investment funds, and the stable but slow growth of insurance companies.

The three largest banking groups dominate pension and investment funds market, infiltrate in the area of insurance market and capital market and thus creating a problem of formal or informal financial groups. Moreover, the financial system is constrained by the low risk tolerance of investors, which is reinforced by the lack of tradition and culture of investing in the capital market and saving through non-depository financial intermediaries (Olgić Draženović, Maradin, Buterin 2016). This implies increased responsibility of regulatory and supervisory institutions, especially in times of crisis and uncertainty, such as the pandemic crisis COVID -19.

Croatia is a small, open, post-transition economy with a large impact of foreign shocks and crises on its performance. Nonetheless, macroeconomic stability and moderate inflation, substantial (and even idle) liquidity, historically low interest rates, and a stable exchange rate are factors that favour the possibilities of mitigating the impact of the pandemic.

The initial shock of the pandemic outbreak spread across financial markets and was marked by negative investor sentiment that affected all asset classes and all markets equally (Graph 1). Nonetheless, the shock to financial markets was less than that experienced during the 2007/2008 global financial crisis and less than that experienced during severe contractions in the economy. In fact, in 2009 the CROBEX index (the official share index of the Zagreb Stock Exchange) fell to the level at the beginning of the global financial crisis. This correction was followed by a small recovery of the CROBEX, although its average value was still two times lower than before the onset of the global financial crisis. On the other hand, the CROBIS index (the official Zagreb Stock Exchange bond index) remained relatively stable despite a small correction after the outbreak of the pandemic. The CROBIS remained at a higher level than during the 2007/2008 global financial crisis, reflecting the positive effects of expansionary monetary policy (CNB 2020, 12).

Graph 1: Changes in the CROBEX and CROBIS indices (2008-2020)
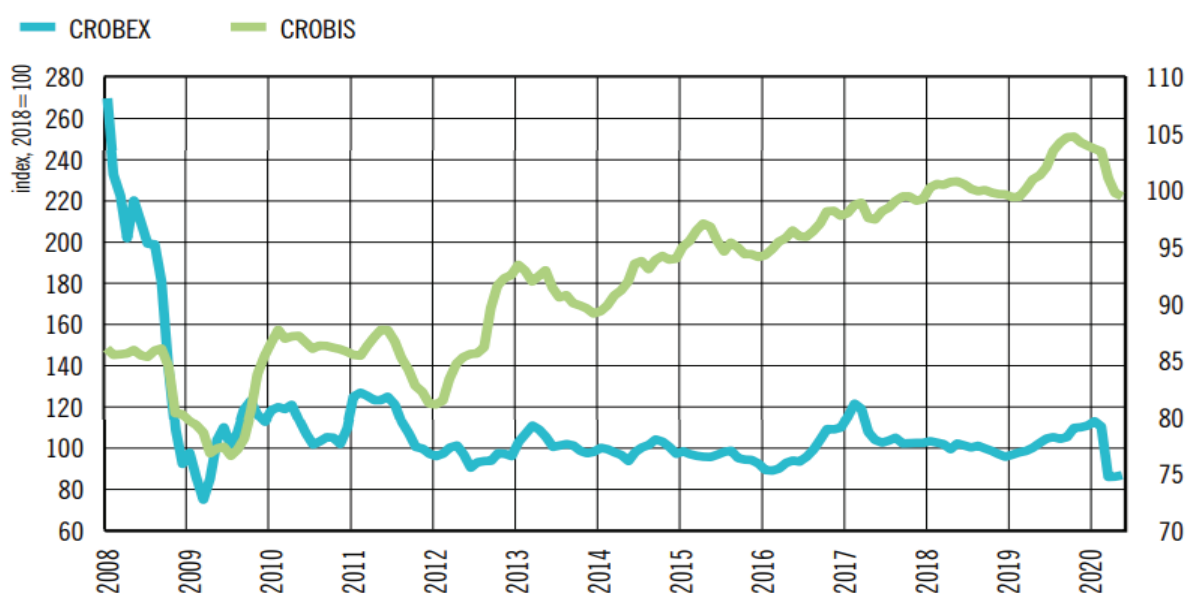
Source: CNB (2020, 11)

2.1. The impact of the pandemic on the credit institutions

Although the Croatian banking sector was stable and well capitalized at the time the pandemic occurred, the operations of the banks affected by the pandemic were at significant risk. This led to a significant deterioration in the banks' business results. The net profit of banks in 2020 was reduced by 53.3% (HRK 2.7 billion) compared to the previous year. Out of a total of 20 banks, 16 operated at a profit (mainly the large and systemically important banks) (CNB 2021c). The banks' profits decreased due to a decrease in almost all operating revenues as well as rising costs caused by an increase in credit risk. Nevertheless, the banks operated positively and safely, and stability and liquidity were not at risk at any time. Croatian banks proved to be well capitalized, with a total capital ratio of 24.9% for 2020, which allowed for loan and deposit growth and low interest rates. The strong resilience of banks to shock and crisis situations was supported by the CNB's monetary policy response and the creation of additional liquidity in the system, as well as by the previously established strong capital and liquidity position of banks and targeted changes in the prudential regulatory framework. Banks' free money reserves reached their historically highest level in November, which helped keep most interest rates at their lowest levels ever, similar to pre-pandemic levels (CNB 2020).

2.2. Pension funds

The systemic reform of the pension system in Croatia with the introduction of privately managed mandatory and voluntary pension funds in 2001 was the strongest trigger for the development of non-bank intermediation in Croatia (Olgić Draženović, Suljić, Prohaska 2015). In the following years, mandatory pension funds became the fastest growing and most influential institutional investors in terms of investment potential in the Croatian financial system, with 2.01 million members and total assets of HRK 112.60 billion at the end of 2019 (Hanfa 2021b). At the end of 2020, the assets of mandatory pension funds amounted to HRK 119 billion[1] (Hanfa 2021b)., which positions mandatory pension funds as the largest and most significant institutions in the non-deposit financial services sector.

Since the beginning of the activity of mandatory pension funds[2], the average return in category A was 6.91%, in category B 5.41% and in category C 5.13% (Hanfa 2021a). The outbreak of the coronavirus pandemic in March and May 2020 caused a significant drop in returns and thereafter monthly returns fluctuated significantly. Nevertheless, mandatory pension funds ended 2020 with a positive annual yields of the Mirex[3] index for all three categories of funds, as shown in graph 2.

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[1] Asset of voluntary pension funds amounted to HRK 6.7 billion by the end of 2020.

[2] Prior to 2014, there were four mandatory pension companies operating and managing one of the mandatory pension funds (and several voluntary pension funds). A change in the law in 2014 introduced the proxy lifecycle investment model. It allowed each of the management companies to offer three categories of funds to members, depending on their risk categories and preferred investment strategies: category A (aggressive), B (balanced) and C (conservative). Since then, the majority of members (96%) have still remained in the B category, as they are automatically placed in the B category unless otherwise selected (Hanfa 2021a).

[3] The Mirex Index is a measure of the performance of all mandatory pension funds in Croatia, i.e. an official asset-weighted index of pension fund returns calculated by HANFA.

Graph 2: Annual rates of return yields of the Mirex index
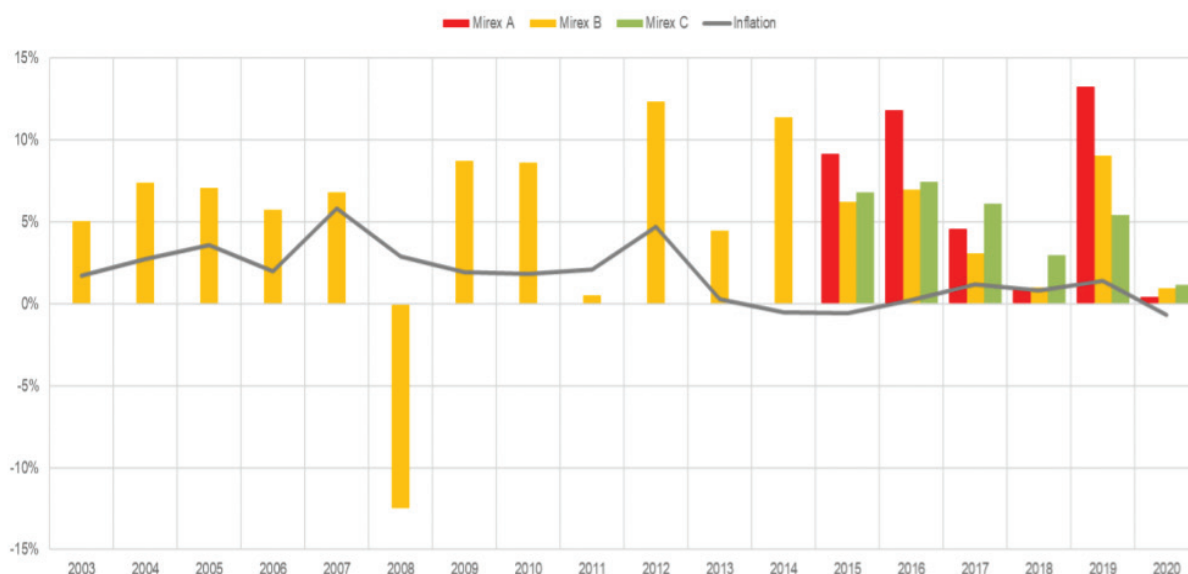
Source: Hanfa (2021a)

Category A funds, in which 3.8% of insured persons save, ended the year with a positive average annual return of 0.43%. Category B funds, in which 94% of members invest at the end of 2020, recorded a positive return of 0.94%. Category C funds performed best, with an average annual returns of 1.15%, as they are almost entirely exposed to the bond market.

In the next period, pension fund management companies will continue to redefine portfolio structure as the period of very low interest rates continues and the problem of illiquid, shallow and narrow domestic capital market persists. Therefore, Hanfa encourages investment in alternative forms of assets (rather than predominantly in domestic government bonds) and the application of the principle of social responsibility to achieve higher returns while reducing risk.

2.3. Insurance companies

In the Republic of Croatia, insurance companies achieved an increase in total assets during the period of the pandemic caused by the coronavirus. According to Hanfa (2021b), total assets at the end of 2019 amounted to HRK 45.51 billion, while at the end of 2020 they amounted to HRK 47.48 billion. It is assumed that the increase in assets and the high level of digitalization prepared insurance companies for the crisis. In 2020, gross written premiums of Croatian insurance companies amounted to HRK 10.4 billion, a decrease of 0.7% compared to the previous year (HUO 2021).

Compared to 2019, insurance companies on European markets achieved an increase in premiums by a full 49.3% (HUO 2021). In addition to COVID -19, the past year in Croatia was marked by numerous earthquakes, which led to a 30.9% increase in earthquake insurance. The structure of insurance premiums changed significantly due to a sharp decrease in the share of life insurance.

Insurance companies adapted very quickly to the new circumstances and requirements for intensive digitalisation and new technological solutions. They focused intensively on their digital channels with faster processes of evaluating and concluding services. As a result, a reduction in fees is expected in the coming periods. This will make insurance products much more acceptable to customers and is expected to increase customer interest through growth and the creation of new products.

2.4. Investment funds

The value of net assets of UCITS[4] funds (Undertakings for the Collective Investment in Transferable Securities) recorded constant growth in 2019 (mainly in bond funds), which continued until February 2020 and amounted to HRK 23.1 billion (Hanfa 2021b). With the emergence of the COVID -19 pandemic in Croatia at the end of March and the subsequent sharp deterioration in volatility on financial markets, a sharp decline in the net assets of UCITS funds was recorded (-32.2% in just one month). The decline in net asset value was primarily due to increased redemptions of units and, to a lesser extent, the declining value of the assets in which the funds invest. However, by the end of 2020, the decline in UCITS assets had moderated with total net assets of HRK 18.2 billion, which is 19.3% or 4.4 billion less than at the end of 2019. Thus, the assets of Croatian UCITS funds returned to the level of 2018, compensating for the significant progress made by the investment fund industry in 2019 (Hanfa 2021b).

Graph 3: Net assets of UCITS funds in Croatia for period 2014-2020 (in HRK million)
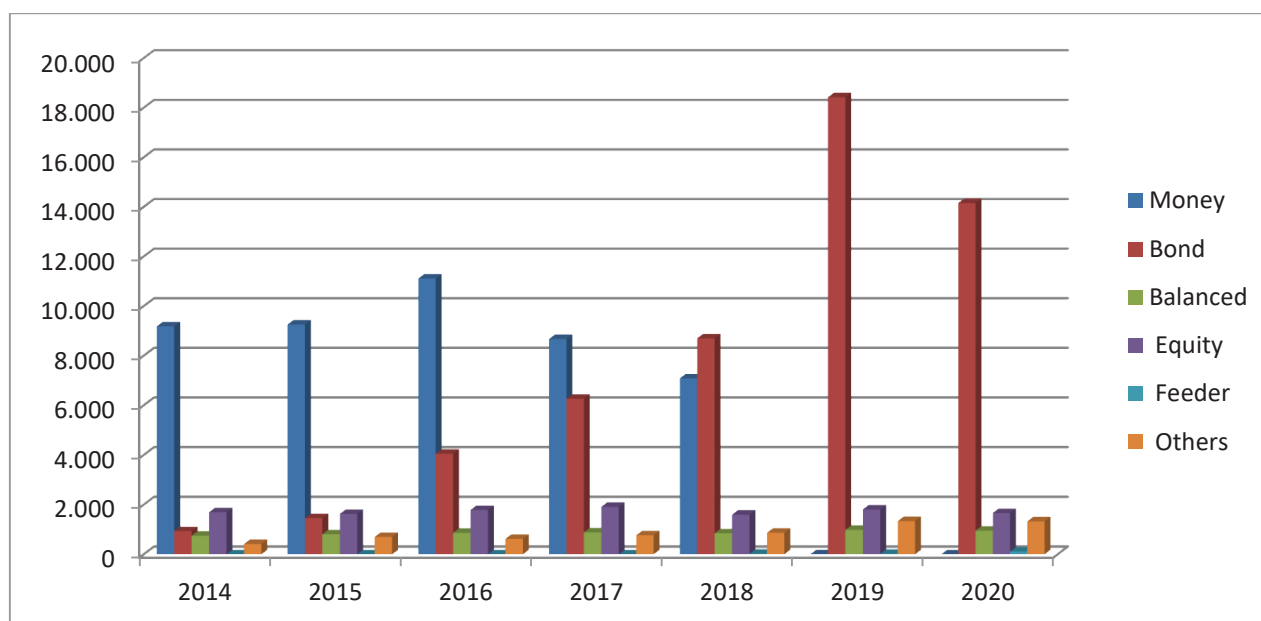
Source: Hanfa (2021c)

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[4] UCITS funds are open-end investment funds with a public offering operating on the principle of risk-spreading and investing collective assets of investors, raised through public offering of units in UCITS, in liquid financial assets. Units of UCITS are redeemed out of its assets at the request of investors and their operations are aligned with EU directives

The large redemption of units can be seen in Graph 4, which shows that in 2020 there was a 44.21% increase in UCITS units redeemed, while at the same time there was a 23.47% decrease in new units issued.

Graph 4: Issuance and redemption of units in UCITS funds in Croatia (2015-2020)
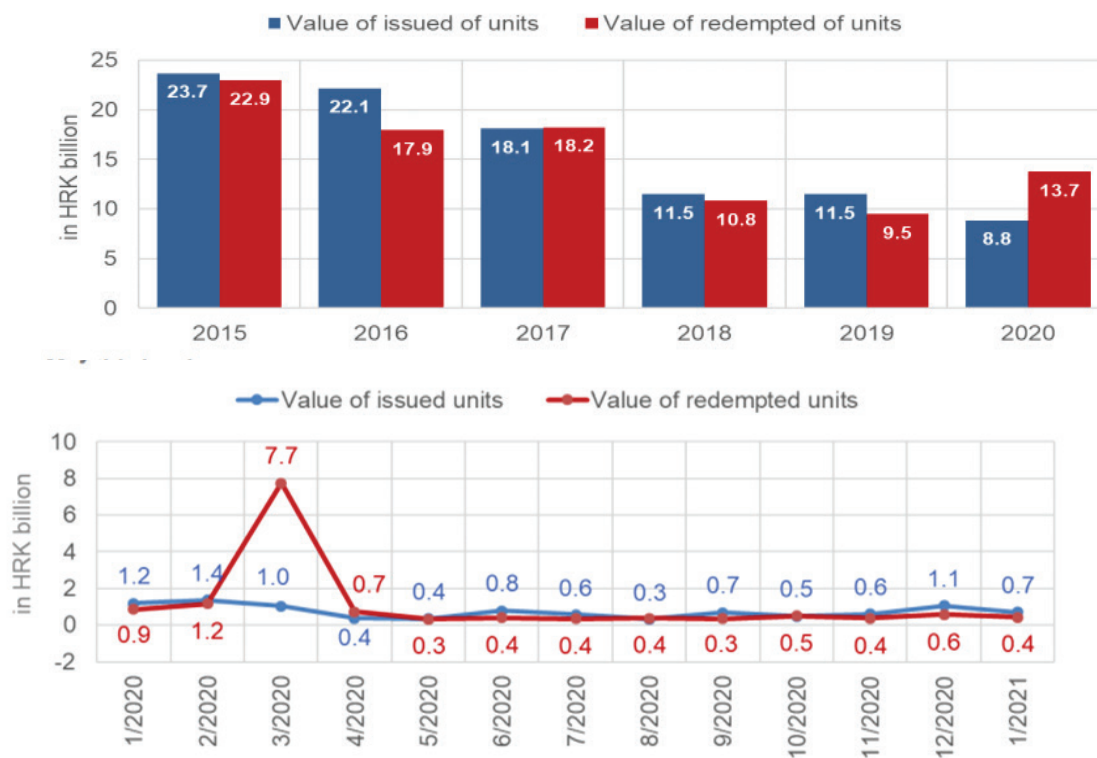
Source: Hanfa (2021a)

Annual returns on units in UCITS funds were strongly affected by the coronavirus spread. According to Hanfa (2021a) average returns of Croatian UCITS funds in 2020 were slightly negative (-0.1%). Bond investment funds achieved positive annual returns of 0.79% on average, while negative returns of -2.32% on average were mostly recorded by equity investment funds (wide range of returns, from -18.13% to +20.88%).

3. Croatian National Bank's response to liquidity and stability risks

Euroization of both deposits and credit euroization remained an enduring feature of the Croatian financial system. The domestic currency never fully assumed its account function, while the store of value function was mostly reserved for the Deutsche Mark and later Euro (Vizek 2006). Considering the large exposure of the financial system to currency risk due to euroization and taking into account that the primary objective of the CNB is exchange rate stability, i.e. price stability, the CNB mostly implements a countercyclical monetary policy.

Pegging the currency to the euro is the primary tool used by the central bank to achieve price stability. Croatia, as a small and open economy, enjoys full freedom of capital movements and has relatively high external debt. To ensure exchange rate stability and low and stable inflation rates, the CNB uses foreign exchange intervention as the main instrument of monetary policy. Foreign exchange interventions are conducted as auctions at the discretion of the CNB (Mance et al., 2019, 154). Benazić and Tomić (2014) argue that the main feature of the Croatian

monetary system is that the exchange rate peg to the euro is not used to influence the balance of payments or GDP, but only to try to maintain the stability of the exchange rate as a prerequisite for a stable economic environment, largely facing foreign currency liabilities.

In 2020, and especially after the outbreak of the pandemic, the CNB maintained a high level of monetary expansion, which ensured favourable domestic financing conditions and maintained the stability of the kuna exchange rate against the euro. The coronavirus pandemic led to a very sharp increase in systemic risks in the Croatian financial system (CNB 2020). As a result, the CNB took a number of monetary and supervisory measures to maintain financial stability in the economy and provide the necessary level of liquidity, as shown in Table 1.

Table 1: CNB's response to COVID-19 crisis

OBJECTIVES		MEASURES	DESCRIPTION
MAINTENANCE OF THE FAVOURABLE FINANCING CONDITIONS	STABILISATION OF THE FOREIGN EXCHANGE RATE AND PROVISION OF THE FOREIGN CURRENCY LIQUIDITY	FOREIGN EXCHANGE INTERVENTIONS	• 9 - 17 March - four foreign exchange interventions in which a total of EUR 1.625 billion was sold to banks. • The exchange rate stabilised at around 7.57 EUR/HRK • Level of international reserves (total reserves at EUR 19.2 billion; net reserves at EUR 16.9 billion, as of 16 March 2020) sufficient for further stabilisation • 31 March - CNB foreign exchange intervention by selling EUR 618.15mn of foreign exchange at average exchange rate of 7.608529 EUR/HRK.
	PROVISION OF KUNA LIQUIDITY FOR THE ONGOING FINANCING OF THE ECONOMY	STRUCTURAL AND REGULAR OPERATIONS	• 16th March – regular and structural operations; creation of HRK 750m of short-term liquidity and HRK 3.8bn of long-term liquidity (5-year maturity at a fixed interest rate of 0.25%) • Daily liquidity surplus was HRK 32.8bn as at 16 March 2020
		RESERVE REQUIREMENTS	• 23th March - reserve requirement rate reduced from 12% to 9%
	SUPPORTING THE STABILITY OF THE GOVERNMENT BOND MARKET	PURCHASE OF GOVERNMENT BONDS	• 13 March - the first auction for the direct purchase of bonds of the Republic of Croatia - HRK 211.2 million purchased. • Following the decision of the CNB Council, the group of counterparties entitled to participate in the purchase and sale of securities was expanded to include pension funds, companies for the management of open-ended public offering (UCITS funds) and insurance companies • 18 March - as part of a fine-tuning operation, the CNB repurchased securities of the Republic of Croatia with a nominal value of HRK 4.075 billion. • Announcement that auctions for the purchase of bonds will continue from 18 to 23 March, expected purchase of another HRK 1.6 billion • 28 April - in a fine-tuning operation, the CNB purchased securities of the Republic of Croatia with a nominal value of HRK 9.529 billion • 29-30 June - in a fine-tuning operation, the CNB purchased securities of the Republic of Croatia with a nominal value of HRK 4.069 billion
	PROVISION OF EURO LIQUIDITY	CURRENCY SWAP LINE	• 15th April - CNB agreed upon establishing a precautionary currency swap line with the ECB, to be activated if needed in the amount of EUR 2bn

Source: CNB (2021b)

The CNB took a number of monetary policy measures in the first three months of the pandemic (in March, April, and May 2020) to (CNB 2021b):

1. maintain exchange rate stability and ensure sufficient foreign exchange liquidity to prevent the emergence of exchange rate risks to the banking system and the economy as a whole;
2. provide the banking market with sufficient kuna liquidity to maintain low interest rates and allow banks to continue lending;
3. support the stability of the market for government securities by purchasing government bonds on the secondary market, thereby creating additional liquidity and enabling funds to be raised on acceptable terms.

Following the stabilisation of financial conditions in domestic financial markets, there was no need for additional monetary policy measures in the second half of the year. In the second half of 2020, the liquidity surplus continued to increase, largely due to the operation of autonomous factors (CNB 2020, 41).

The CNB's first response to the outbreak of the Corona crisis in Croatia was on March 20, when it adjusted the regulatory framework for maintaining liquidity for financial institutions. On 23 March, the CNB lowered the reserve requirement ratio from 12% to 9%, increasing the liquidity of the banking sector by HRK 10.45 billion (~EUR 1.3 billion). Liquidity (HRK 3.8 billion) was also provided through the structural repo facility, which was used for the first time since December 2018. Regular weekly repos were also used by banks for the first time since December 2017 (although there were no bidders in the recent auctions), with the repo rate lowered from 0.3% to 0.05%.

Due to the high uncertainty and sharp depreciation, the CNB intervened heavily in the foreign exchange market, especially in mid-March and early April 2020. Through these activities, the CNB sold a total of EUR 2.7 billion to banks. As a result of the foreign exchange interventions, the gross foreign exchange reserves of the Republic of Croatia decreased by EUR 1.2 billion (6.7%) and stood at EUR 17.3 billion at the end of June. However, international reserves increased to a value of EUR 18.9 billion by the end of 2020, EUR 0.38 billion higher than a year earlier.

Exchange rate developments were further stabilised by the agreement between the CNB and European Central Bank to establish a currency swap line in April 2020. The euro liquidity line agreement allows the CNB to borrow up to EUR 2 billion from ECB in exchange for Croatian kuna.[5]

However, as the additional liquidity provided to banks did not reach other financial institutions and the government bond market was potentially at risk of freezing, which in turn would have had an unfavourable impact on funding conditions for all domestic sectors, further interventions were made. The CNB purchased HRK 4.3 billion worth of government bonds through two auctions, which was the first intervention of this kind for the CNB.

The government bond market in Croatia was supported by the CNB's decision to directly purchase government securities for the first time in Croatia's monetary history. Five auctions

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[5] The liquidity lines were established in 2020 to provide euro liquidity to financial institutions through the national central banks outside the euro area. These arrangements address potential euro liquidity needs in the event of market disruptions due to the COVID -19 pandemic. In addition, they aim to ensure a smooth transmission of ECB monetary policy by preventing potential spillback effects on euro area financial markets and economies. As of February 2021, the euro liquidity line has been extended until the end of March 2022 (CNB 2021a).

were held between March and June, during which the CNB purchased government bonds with a total market value of HRK 20.3 billion. In the second half of the year, there was no need for additional purchases of government bonds. In addition, the CNB decided to broaden the investor base in these activities, i.e. the list of potential participants in securities purchase and sale operations was expanded to include pension funds, investment funds and insurance companies. The measures taken resulted in an easing of tensions on the bond market and lowering of the financial stress index to the level recorded in 2019 (CNB 2020, 11). The importance of these measures lay in the increasing linkage between fiscal and monetary policy with the aim of creating additional liquidity needed to normalise the functioning of this segment of the financial market and maintain favourable financing conditions for all sectors (CNB 2020, 38).

In addition, the CNB temporarily adjusted its supervisory approach to credit institutions in line with the recommendations of European Banking Authority and European Central Bank. These activities were aimed at increasing the flexibility of the existing regulatory framework and supporting banks' focus on their core business. Thus, some of the supervisory activities were temporarily suspended and postponed (e.g. stress tests for credit institutions and direct supervision of business operations). Banks have been required to retain profits earned in 2019 and not to pay dividends.

Thanks to the CNB's timely and sharp response, kuna liquidity reached record levels, allowing the government and the private sector to continue borrowing from domestic banks. Nevertheless, the slowdown in economic activity and demand for credit has been reflected in the tightening of credit approval standards, which has led to a slowdown in retail lending. Under conditions of unfavourable economic conditions as well as high uncertainty due to the dynamics of economic recovery, the CNB will undoubtedly continue to pursue an expansionary monetary policy in the period ahead.

4. Ensuring stability of non-deposit financial sector

The Croatian Financial Services Supervisory has adopted a number of measures and recommendations to support the business continuity of the financial services sector, ensure the confidence of financial market participants and preserve the stability of the non-banking financial sector in Croatia (Hanfa 2021a), as shown in Table 2.

Hanfa's decisions and recommendations can be summarized as follows:
- Suspension of dividend payments by insurance companies,
- Establishment of Stability Fund,
- Decision to waive fees for issuers listed on the regulated market in 2020,
- Recommendation to grant a moratorium to customers of leasing companies.

One of the first initiatives of Hanfa and mandatory pension fund management companies was the creation of the Stability Fund. It is a publicly traded UCITS open-end investment fund, established for a fixed period of 3 years, primarily intended for institutional investors who are willing to invest at least one million HRK (which is also the starting price of a unit), and can bear moderate investment risk. The proclaimed objective of the new institution is to protect the value and increase the liquidity of transferable debt securities and money market instruments issued or guaranteed by the government bonds of the Republic of Croatia, preserve the value of its members' assets and support the Croatian economy (Hanfa 2021c). In 2020, the investment

return was 1.7%. The largest part of the portfolio (56.51%) was related to bonds of the Republic of Croatia, and the rest was placed in bank deposits (OTP Invest 2021).

Table 2: Hanfa's response to COVID-19 crisis in 2020

OBJECTIVES	MEASURES	DESCRIPTION
Maintaining the stability of the financial system	Strengthening the liquidity of insurance companies	• 26 March- Ban on dividend distribution from realized profits for insurance companies and pension providers (until April 30, 2021)
Facilitating business to participants in the financial system	Reducing costs for issuers on regulated market	• 26 March- Exemption of issuers listed on the regulated market from the payment of fees for 2020 (total exemption from fees paid to Hanfa).
Maintaining of the liquidity in the bond market	Establishment of the Stability Fund	• 14 April - Hanfa issued an authorisation to establish Stability Fund (on behalf of OTP Invest fund management company).
Supervisory flexibility and business continuity support	Operational relief and simpler procedures	Resolutions on: • Signature of documentation by only one member of the board of a pension fund or investment company and extension of reporting deadlines by 30 days. • Postponement of the change of status of insurance and/or reinsurance intermediaries due to failure to meet continuing education requirements. • Granting a one-month delay in the submission of reports by insurance undertakings that are not related to the quantitative and qualitative reporting requirements under Solvency II • Adjusting the prudential qualitative and quantitative reporting requirements for insurance and reinsurance undertakings under Solvency II (allowing delays in reporting of one, two, four or eight weeks), extending the deadlines for supervisory reporting and public disclosure. • Extending the deadline for submitting statements on complaints from financial services users from 8 to 15 days.
Protecting investors	Suspension of trading in the regulated markets	• 12 March - Decision to temporarily suspend trading in all financial instruments on the regulated market operated by the Zagreb Stock Exchange

Source: Hanfa (2020 a; 2021 a)

5. Conclusion

The outbreak of the pandemic COVID -19 significantly affected the Croatian financial system. Due to deteriorating economic conditions, the economic downturn underscored the importance of proper monitoring of systemic risks and appropriate calibration of macroprudential policies to maintain the stability of the domestic financial services sector. Therefore, the government and financial system regulators and supervisors took a series of measures to deal with the unexpected crisis.

The CNB promptly adjusted its monetary policy and used all available means and measures to maintain exchange rate stability and favourable financing conditions for citizens, businesses, and the government. In the initial response to the crisis, the CNB demonstrated its ability to balance the need to create high liquidity with maintaining exchange rate stability. Kuna liquidity

was withdrawn through the sale of foreign currencies, but the CNB replaced it with other monetary policy measures, including structural and regular operations, reduction of reserve requirements and through the purchase of government bonds on the secondary market. Financial sector liquidity reached extremely high levels and interest rates remained low as before the crisis. Unfortunately, the unfavourable health outlook and uncertainty about the evolution of the pandemic led to a tightening of lending standards and a reduction in bank credit to the private and retail sectors. The CNB's monetary policy played an important role in maintaining financial and macroeconomic stability. Financial stability and the continuity of financial markets and the non-deposit financial sector were ensured through a series of measures and recommendations by Hanfa. These measures were appropriate and were imposed in a timely manner in order to prevent disruptions in the financial system, ensure the confidence of financial market participants and preserve the stability of the non-bank financial sector in Croatia.

Despite the fact that this research gives an overview of the impact of COVID -19 on the Croatian financial system so far, the unknown duration of the pandemic and its negative impact on the financial system as well as the economy in general could be the limitations of this paper. Regarding the mentioned above, further research should present the analysis of future activities of regulatory authorities, i.e. CNB and Hanfa to maintain financial stability affected by the crisis of COVID -19.

The crisis is an opportunity for the Croatian economy if the current growth model is reconsidered and economic policymakers focus on measures that increase resilience to exogenous shocks and boost growth potential.

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MEASURING BANK EFFICIENCY: CROATIAN BANKING SECTOR RESEARCH

ABSTRACT

Interest on measuring the efficiency of banking industry has increased substantially in recent years, both for the industry holders and service users and especially for researchers and regulators. Persisting fragmentation of banking sectors in European Union is still high, despite the Banking union progress. The aim of this paper is to contribute to development of methodology for measuring the efficiency of banking sector of Republic of Croatia. Main characteristics of Croatian financial sector is that it is bank-centric system and highly concentrated, with the five biggest banking institutions holding over 80% of total banking assets. More than 90% of banking sector assets are in foreign ownership, like in many other transition countries. Data for all 20 commercial banks operating in Republic of Croatia are included in this research. Non-parametric Data Envelopment Analysis (DEA) under Variable Returns on Scale (VRS) model was used to compare the efficiency results of individual banks by using different pairs of inputs and outputs in the input-oriented models. Fifteen different DEA models were developed, using different variables selected in regression analyses. Kolmogorov-Smirnov test was applied to define the selection of variables for future models. The research represents a contribution to existing researches of banking profitability in Croatia and in general. Findings of the research contribute to appropriate selection of data for the future measurement of bank efficiency in Croatia, but also in other comparable transition countries. It also provides background for future researches of banking efficiency in extended time period, using different models with other pairs of variables or in separate groups of banks according to ownership or size.

Keywords: Bank efficiency, DEA model, Croatian banks.

1. Introduction

Stable financial system is crucial precondition for economic growth, performs an essential function in channeling surplus funds from savers to borrowers and contributes to the increase of welfare in economy. In bank-based economies, with banks playing the most important role in financial system, and a small influence of other financial intermediators, as in the Republic

of Croatia, this role is even more important. Their responsibility arises from fact that they collect funds from borrowed deposits and transfers them in different types of loans supporting the economy and business cycle, but simultaneously taking a certain level of risk in collection of these loans. The diversification of their portfolios affects their returns and the level of risk they take, which affects national economy. Ribić and Vakanjac (2017) mention significant changes that have taken place in the Croatian banking sector over the last decade, which affect the profitability of banks - on one hand the legislation is becoming stricter, and on the other hand banking users are increasingly more educated with easier access to information. Also, according to Arčabić (2015), in the financial sector there is more uncertainty and less control over the changes taking place in the environment. All of the above greatly affects the financial results of banks - it is the obligation of banks to regularly publish business reports, and this, combined with available computer tools for statistical data processing, provides a completely new insight regarding banks' profitability.

The most common method for measuring bank profitability is the use of traditional profitability ratios such as return on assets (ROA) and return on equity (ROE). Many authors in their studies use these ratios to compare profitability of national or regional banking sectors (Kohlscheen, Murcia, Koncreras, 2018; Trujilo-Ponce 2013), or combined them with other ratios such as in study of Golubeva, Duljić and Keminem (2019) in which they measure the impact of liquidity risk on profitability of European banks combining ROA and ROE with new liquidity ratios introduced in Basel III regulations. Adjusted traditional ratios can also be used for measuring the impact of income diversification on risk-adjusted performance of banks. Volatility of profitability ratios for each bank as standard deviations of ROA and ROE over some period is used as risk performance measures (Sanya, Wolfe, 2011).

Despite widespread use of this ratios, there are some limitations in usage of this ratios to compare a whole group of individual entities in some industries such as involvement in different operations of individual firms, seasonal factors or different operating and accounting practices (Lesakova, L. 2009), or, in case of banking, limitation due to variables included in the calculations (Tuškan, Stojanović 2016).

This paper investigates the possible models for measuring efficiency of Croatian banks using the mathematical programing approach Data Envelopment Analyses (DEA) for measurement of relative efficiency between different business units, in our cases individual banks. Different DEA models were developed supported by correlation analysis, linear regression models and descriptive statistics performed to support selection of chosen variables. Based on feed-back of regression analyses, combination of different items collected from financial reports of Croatian banks were used as input and output for DEA models.

The need to explore appropriate combination of input and output variables for DEA model and for measurement of bank profitability of Croatian banking sector is obvious due to very small number of literature and studies on this topic.
Data sample consists of all 20 banks operating in Croatian banking sector in 2020. The most significant financial items were extracted from financial reports of individual banks for 2019 year.

On the base of structure of banks financial reports in this study we set the following hypotheses:

H1: Largest banks show better efficiency scores than the small ones

H2: Deposits and loans should be used as the key variables in DEA model to measure an efficiency of Croatian banks

To confirm stated hypotheses, 7 input and 5 output variables were selected from financial reports and combined in 15 different DEA models using different combination of variables, as a result of regression analyses.

DEA analyses is performed by using DEA Frontier software, and the regression analyses is performed using IBM SPSS software.

This paper is divided into the following parts - introduction, in which the reader is briefly introduced to the topic of the paper, literature review, elaboration of the topic describing the situation in the Croatian banking sector during 2018/2019, model and research results as the backbone, and finally, conclusion as a summary of all the information presented in this paper.

2. Literature review

The application of the DEA model for the purpose of measuring profitability is gaining on importance. Specifically, Tuškan and Stojanović (2016) deal with the application of the DEA model for the purpose of measuring the profitability in the European banking sector. Their research covered 28 European banking systems in the period from 2008 to 2012. For the purpose of data analysis, Tuškan and Stojanović use ROA, ROE and CIR (Cost to Income Ratio) indicators. The authors concluded that the application of the DEA model is an important tool for detecting inadequate business strategies that might result in a decline of business activity. Maradin, Olgić - Draženović and Benković (2019) focus on the Croatian banking sector, citing variables that can be used in the DEA model as indicators of business success (asset value, number of employees, interest and non-interest income, deposits and loans).
Goyal et. al. (2019) analyzed the efficiency of the Indian banking sector on the example of 66 banks for the period from 2015 to 2016. Their analysis discovered that the efficiency of the Indian banking sector is only 73.44%. The application of the DEA model has identified weak consolidation of industry as a key problem of the Indian banking sector. In her paper, Repkova (2015) applied the DEA model on the example of Czech commercial banks in a nine-year period (2003-2012). The DEA model was applied under two assumptions - VRS (Variable Return to Scale) and CRS (Constant Return to Scale) - the average efficiency under the VRS assumption was 84-89%, while the latter was 70-78%. The author found that the group of larger banks is less efficient than other banks in the group due to excess deposits and the size of operations. Kočišova (2016) analyse efficiency over the banking systems of European Union countries for the period 2008 – 2014 using DEA method. This study uses total deposits, number of employees and fixed assets as inputs and total loans and other earning assets as outputs. The results indicated that the average cost efficiency moved from 20.90% in case of Poland to 100% in case of United Kingdom, Netherlands, Sweden, Malta, and Luxembourg, but also that the large banking systems show better efficiency than the small ones.
Many studies use regression analyses to support the choice of input and output variables for DEA model. Ouenniche, J., Carrales, S. (2018) analysed the efficiency profile of UK commercial banks using DEA analysis with regression-based feedback using regression for providing DEA with relevance information of the inputs and the outputs chosen by the analyst. Chortareas, Girardone, and Ventouri, (2013) used DEA for estimating bank-efficiency scores for a sample of commercial banks of European Union member states, and then used regression to measure dynamics between financial freedom index and bank efficiency levels.

Titko, Stankevičiene and Lace (2014) analyze the Latvian banking sector, also using the DEA model under the VRS (Variable-Return-Scale) assumption - the authors identified the most successful Latvian banks. They used linear regression analyses to substantiate the variables selection for DEA. Our research followed their methodology for Latvian banking sector, and their study was a base for developing different DEA models for Croatian banking sector presented in this research.

2.1. Data Envelopment Analyses DEA

DEA is widespread accepted method for measuring efficiency of individual decision-making units (DMU) as, for example, financial institutions. It was first defined by Charnes, Cooper and Rhodes (1978) as a non-parametric mathematical programming model applied to selected data that provide the estimation of relations in production function or efficient production. This model is known as CCR DEA model upon its founders. According to Alber et al. (2019), each DMU spent a certain amount of programming i inputs and produces r of different outputs. If it is supposed that these inputs and outputs are non-negative, and each DMU has at least one positive input and output value, then the productivity of DMU can be expressed in formula:

$$h_j = \frac{\sum_{r=1}^{s} u_r y_{rj}}{\sum_{i=1}^{m} v_i x_{ij}} \qquad (1)$$

where u and v are the weights assigned to each input and output. The preconditions for optimal functioning of DEA approach are that the weights for each DMU are deployed subject to the constraint that no other DMU has an efficiency greater than 1 if it uses the same weights, implying that efficient DMUs will have a ratio value of max. 1.

The result of efficiency of particular DMU is the ratio of the total weighted output divided by the total weighted input, expressed in values up to 1, as in formula:

$$h_j = \frac{\sum_{r=1}^{s} u_r y_{rj}}{\sum_{i=1}^{m} v_i x_{ij}} \leq 1 \text{ for } j = 1 .. n \qquad (2)$$

This CCR DEA model assumes constant returns to scale (CRS) which, in production function, means that any increase in inputs results in equivalent increase in outputs. As it isn't always the case, some researches implemented variable return to scale in DEA model (VRS) (Banker, Charnes, Cooper, 1984). This model is known as BCC model. The main difference between CCR and BCC models is the fact that CCR model does not consider the fact that different business units operate in different scales, and the VRS model ensures that the individual DMU benchmark corresponds to a similar one. In our study VRS model is applied in computing DEA efficiency of Croatian banking sector.

DEA model also differ in selection of input or output-oriented models. In input-oriented DEA, a DMU expresses the potential savings of inputs in the case of operating efficiently. In contrast, with output-oriented DEA, a DMU measures its potential output increase given its inputs do not vary (Taboada et al., 2020).

The selection of input and output variables significantly affects the efficiency results. The available literature on this topic in financial services measurement is unadjusted. Ahn and Lei

(2014) in their study on the specification of the input-output set for DEA-based bank efficiency measurement examine whether the choice of variables is in connection with the criteria upon which bank makes decisions. They found out that there is no consensus between researches on choice of input and output variables, and, because the results of efficiency measurement are sensitive to the choice of variables, the efficiency results are incomparable and inconsistent. The most commonly described approaches or models based on banks behaviour are intermediation approach, production approach and profitability approach. Alder et al. (2019) define that the production approach assumes that financial institutions serve as producers of services for depositors and perform transactions resulting in loans. The intermediation approach is comparable to production approach. It relies on the opinion that banks act as financial intermediaries whose primary role is to obtain funds from savers and transform them into the money they lend to borrowers. This model measures the efficiency of bank in these operations. Profitability approach is based on profit-oriented outputs such as interest income, commission income and other non-interest income. This approach examines how well the bank uses its inputs to produce outputs (Tuškan, Stojanović, 2016).

3. Banking sector in Croatia

According to Croatian National Bank (2019), there are currently 24 active credit institutions in Croatia, 20 of which are banks (Addiko Bank, Agram banka, Banka Kovanica, Croatia banka, Erste & Steiermarkische Bank, Hrvatska poštanska banka, Imex banka, Istarska kreditna banka Umag, J&T banka, Karlovačka banka, KentBank, OTP banka Hrvatska, Partner banka, Podravska banka, Privredna banka Zagreb, Raiffeisenbank Austria, Samoborska banka, Sberbank, Slatinska banka, Zagrebačka banka) and four residential savings banks: HPB, PBZ, Raiffeisen and Wustenrot residential savings bank.

Croatian banking system is still dominated by foreign-owned banks, whose share in total bank assets is 90.2%, of which 48.9% are Italian-owned assets and 29.9% are in Austrian ownership (Croatian National Bank, Banks Bulletin, 2019).

In the structure of financial sector, the most represented are banks (68.2%), followed by mandatory pension funds (15.6%), insurance companies (6.9%), investment funds (3.5%), and leasing companies (3.1%), residential savings banks (1.3%) and voluntary pension funds and factoring (less than 1%) (Croatian Banking Association, 2018). According to Eurostat (2020), the share of the financial sector in the total gross value in 2019 was 6.1% (an increase compared to 2017). The ratio of assets and total assets of five largest banks in Croatia in 2017 was 72.79% and the concentration of the top five banks on the market is relatively high (Croatian Banking Association, 2018).

Struggling to survive, some banks mergers and acquisitions took place in Croatian banking sector in last two years which resulted in an increase of the concentration indicator: in 2018 Veneto merged with Privredna banka Zagreb, Splitska banka merged with OTP, and in 2019 Jadranska banka merged with Hrvatska poštanska banka. Such developments increased the share of assets of the first five banks by approx. 75% to 81.4%, while the Herfindahl-Hirschman asset index in 2019 rose to 1634. The Herfindahl - Hirschman concentration index is most often used as an indicator of industrial concentration and plays a very important role in the decision - making process on mergers or acquisitions. Each bank in some market participates in the value of this index, and the greater share the bank holds, the more relevant is its contribution to the index (Boda, 2014). A higher-than-prescribed HHI index value also increases the likelihood that these banks will hold higher price levels than competitors over a period of time.

In addition, there was an increase in the assets of other largest and systemically important banks in Croatia (Zagrebačka, Erste & Steiermarkische, Privredna banka Zagreb, Raiffeisenbank Austria, OTP, Addiko Bank, Hrvatska poštanska banka) (Croatian National Bank Bulletin, 2019).

In 2018, banks' profits amounted to 5.6 billion HRK. During 2018, there was a decline in interest income, a decline in net income from fees and commissions, net other non-interest income and a decline in other gains (losses). At the same time, positive effects of interest, general and impairment losses and provisions were recorded – due to increased sale of receivables. 2015 was the most unfavorable year in terms of bank profitability, when ROAE decreased by 8.8% and ROAA (Return on Average Assets) decreased by 1.3%. In terms of indicators for 2018, high levels of total profitability are largely the result of above-average high ROAA and ROAE recorded at leading banks, while the remaining banks in the sector recorded significantly lower values of these indicators (Croatian National Bank, 2019).

Only a few studies are available on topics of profitability of Croatian banking sector over the last period. As it was possible to find, only a few authors have attempted to determine the efficiency of Croatian banking sector using different DEA approaches.

Papers published on this topic are presented in Table 1.

Table 1: Studies on bank efficiency of Croatian banking sector

Authors	Research period	DEA model	Input/output variables
Jemric, Vujčić	1995 - 2000	operating approach, intermediation approach	*For operating approach:* Input: interest and related costs, commissions, labour costs, capital related administrative costs Output: Interest and related revenues, non-interest revenues *For intermediation approach:* Input: Fixed assets and software, number of employees, total deposits Outputs: Total loans extended, short-time securities issued by official sectors
Jurčević, Žaja	2005 - 2009	profitability approach	Input: Interest expenses, non-interest expenses, other expenses (labour and capital related) Output: Interest income, non-interest income, other income from business activity
Davidovic, Uzelac, Zelenovic	2006 - 2015	intermediation approach	Input: interest and non-interest expenses Output: interest and non-interest revenues

Source: Author's own representation (2021)

As seen from the Table 1, only the authors in the first study used deposits and loans for variables in the applied DEA methodology, although they are common variables in other bank efficiency DEA related studies (Ouenniche, Carrales, 2018, p.561, Balcerzak et all, 2017, p.59).

4. Research model

The study evaluates data for twenty banks operating in Croatia in 2019 year: Addiko Bank, Agram banka, Banka Kovanica, Croatia banka, Erste & Steiermarkische Bank, Hrvatska poštanska banka, Imex banka, Istarska kreditna banka Umag, J&T banka, Karlovačka banka,

KentBank, OTP banka Hrvatska, Partner banka, Podravska banka, Privredna banka Zagreb, Raiffeisenbank Austria, Samoborska banka, Sberbank, Slatinska banka and Zagrebačka banka. The research was conducted based on data from the banks' financial reports from June 2019, published on the database of Croatian National Bank. The amounts in financial reports are expressed in thousands of HRK.

In the initial phase of the research, the input and output variables were defined. During the analysis of the financial reports, seven input variables were selected: customer deposits, profit /loss due to owners, equity, interest expense, commission expense, staff expense and other administrative expenses; and five output variables: loans, securities, interest income, commission income and net profit/loss. We considered the selection of the variables based on their significance in reports.

Some selected input variables represent liabilities in banks' balance sheets such as deposits from customers. It generates costs referred to other selected variables expressed as expense in banks' profit and loss account, such as interest expenses and commission expenses. Also, selected output variables represent assets in banks' balance sheet such as loans and securities and related income such as interest income and commission income expressed in profit and loss account.

Table 2: Selection of potential variables

	Input		Output
Input 1	Deposits from customers	Output 1	Loans
Input 2	Profit (loss) due to owners	Output 2	Securities
Input 3	Equity	Output 3	Interest income
Input 4	Interest expenses	Output 4	Commission income
Input 5	Commission expenses	Output 5	Net operating profit (loss)
Input 6	Staff expenses		
Input 7	Other administrative expenses		

Source: Processed by the author's (2021)

Correlation analysis of selected variables was performed using IBM's SPSS program. The correlation results for inputs and outputs are shown in figures below.

Table 3: Correlation of input variables in SPSS software

Item		Deposits from customers	Profit (loss) due to owners	Equity	Interest expense	Commission expense	Staff expense	Other adm. expenses
Deposits from customers	Pearson correlation	1	0,975**	0,834**	0,966**	0,685	0,982**	0,948**
	N	20	20	20	20	20	20	20
Profit (loss) due to owners	Pearson correlation	0,975**	1	0,854	0,923**	0,613	0,955**	0,883**
	N	20	20	20	20	20	20	20
Equity	Pearson correlation	0,834**	0,853**	1	0,923**	0,597	0,818**	0,884**
	N	20	20	20	20	20	20	20
Interest expense	Pearson correlation	0,966**	0,923**	0,923**	1	0,596	0,915**	0,920**
	N	20	20	20	20	20	20	20

Item		Deposits from customers	Profit (loss) due to owners	Equity	Interest expense	Commission expense	Staff expense	Other adm. expenses
Commission expense	Pearson correlation	0,685	0,613	0,597	0,596	1	0,733	0,739
	N	20	20	20	20	20	20	20
Staff expense	Pearson correlation	0,982**	0,955**	0,818**	0,915**	0,733	1	0,945**
	N	20	20	20	20	20	20	20
Other administrative expenses	Pearson correlation	0,948**	0,883**	0,884**	0,920**	0,739	0,945**	1
	N	20	20	20	20	20	20	20

Source: Processed by the author's (2021)

The results of correlation of input variables reveals that the variables are mostly in strong correlation. Deposits from customers were selected, in combination with two other mutually least correlated variables – commission expense, interest expense and profit/loss due to owners. Correlation of output variables presented in Table 4 reveals a strong relationship between almost all variables, so each of them can be used separately as a singular output for regression model with selected input variables.

For regression analysis, with the aim of determining the appropriate variables for the DEA model, all of the output variables were selected except net operating profit/loss since it shows the strongest correlation with all other variables.

Individually, as presented in Table 5, selected variables are loans, securities, interest income and commission income as dependent variable and deposits from customers, commission expense, interest expense and profit / loss due to owners as predictors.

Table 4: Correlation of output variables in SPSS software

Item		Loans	Securities	Interest income	Commission income	Net operating profit/loss
Loans	Pearson Correlation	1	0,826**	0,817**	0,965**	0,971**
	N	20	20	20	20	20
Securities	Pearson Correlation	0,826**	1	0,623	0,913**	0,892**
	N	20	20	20	20	20
Interest income	Pearson Correlation	0,817**	0,623	1	0,778	0,788
	N	20	20	20	20	20
Commission income	Pearson Correlation	0,965**	0,913**	0,778	1	0,950**
	N	20	20	20	20	20
Net operating profit/loss	Pearson Correlation	0,971**	0,892**	0,788	0,950**	1
	N	20	20	20	20	20

Source: Processed by the author's (2021)

Regression analysis determined that most of the independent variables were statistically significant (p-value less than 0.05), so it is possible to combine them as explanatory variables for outputs to create models for testing bank profitability by the DEA method. Inputs with statistically significant coefficient will be used with the output variable in one model. Those variables whose significance exceeds 0.05 (customer deposits, profit / loss due to owners, commission expense and interest expense in combination with interest income) were combined with other statistically significant variables.

Table 5: Regression analysis of selected variables

Dependant variable	R Square Adjusted	Sig.	Predictors	Sig.
Loans	0,999	0,000	Deposits from customers	0,000
			Commission expense	0,000
			Interest expense	0,000
			Profit/loss due to owners	0,000
Securities	0,984	0,000	Deposits from customers	0,000
			Commission expense	0,000
			Interest expense	0,003
			Profit/loss due to owners	0,000
Interest income	0,796	0,000	Deposits from customers	0,921
			Commission expense	0,548
			Interest expense	0,027
			Profit/loss due to owners	0,992
Commission income	0,997	0,000	Deposits from customers	0,000
			Commission expense	0,000
			Interest expense	0,383
			Profit/loss due to owners	0,000

Source: Processed by the author's (2021)

By results of regression analysis, 15 models for DEA analysis were defined. Models include different combinations of input and output variables - six models with two variables, five models with three variables, three models with four variables, and one model with six variables. Efficiency of each model is performed in DEA Frontier software, using input-oriented model which examines whether individual unit uses to much input to produce current level of outputs.

Table 6: 15 developed DEA models

MODELS	Inputs	Outputs
MODEL 1 (M1)	Deposits from customers	Loans
MODEL 2 (M2)	Commission expense	Loans
MODEL 3 (M3)	Profit/loss due to owners	Securities
MODEL 4 (M4)	Interest expense	Securities
MODEL 5 (M5)	Interest expense	Interest income
MODEL 6 (M6)	Deposits from customers/Profit/loss due to owners	Commission income
MODEL 7 (M7)	Commission expense/Interest expense	Commission income
MODEL 8 (M8)	Deposits from customers/Commission expense	Loans/Interest income/Securities
MODEL 9 (M9)	Profit/loss due to owners/ Interest expense	Securities/Commission income
MODEL 10 (M10)	Interest expense/Profit/loss due to owners	Interest income

MODELS	Inputs	Outputs
MODEL 11 (M11)	Interest expense/Commission expense	Interest income/Commission income
MODEL 12 (M12)	Deposits from customers	Interest income/Net operating profit (loss)
MODEL 13 (M13)	Profit/loss due to owners	Commission income
MODEL 14 (M14)	Interest expense/Deposits from customers	Commission income
MODEL 15 (M15)	Commission expense/Deposits from customers/Interest expense	Loans/Interest income/Commission income

Source: Author's developed (2021)

4.1. Results of the research

As already mentioned, 15 models have been created to analyze the profitability of the Croatian banking sector. Each combination was tested using the DEA method and results ranged from zero (not profitable at all) to one (maximally profitable). Also, the prerequisite for the analysis of data by using DEA method is positive values, therefore those variables whose numerical value was negative (profit / loss due to owners) in the case of Croatia bank and J&T Bank were replaced by zero (these two banks recorded operating loss as for 2019). DEA data analysis was processed under the VRS (Variable Return Scale) assumption. The results of the DEA analysis are shown in the summary table below.

Table 7: Results of DEA analyses for M1 – M8 models

Banks	M1	M2	M3	M4	M5	M6	M7	M8
Addiko	0,895	0,713	0,146	0,159	0,425	0,626	0,868	0,995
Agram	0,807	0,607	0,000	0,068	0,302	0,422	0,477	0,807
Kovanica	1	0,854	0,000	0,141	0,461	0,475	0,719	1
Croatia	0,765	0,736	0,000	0,141	0,336	1	0,575	0,825
Erste	1	0,664	0,033	0,027	0,542	0,831	0,606	1
HPB	0,802	0,106	1	1	0,584	1	1	1
IMEX	0,790	0,902	0,060	0,153	0,357	0,317	0,704	0,974
IKB	0,696	1	0,000	0,291	0,980	0,453	1	1
J&T	0,748	1	0,000	0,141	0,247	1	1	1
Karlovačka banka	0,730	0,387	0,000	0,227	0,614	0,531	0,592	0,730
KENT banka	0,885	0,842	0,000	0,119	0,429	0,404	0,594	0,937
OTP	1	0,809	0,073	0,180	1	0,578	1	1
Partner	0,241	0,453	0,000	0,108	0,293	0,287	0,691	0,947
Podravska	0,844	0,279	0,000	0,127	0,501	0,626	0,494	0,844
Privredna banka Zagreb	1	0,473	0,858	1	1	1	1	1
Raifeisenbank	0,793	0,139	1	1	0,599	1	0,986	1
Samoborska banka	1	0,360	0,000	1	1	1	1	1
Sberbank	1	0,776	0,402	0,232	0,332	0,417	0,537	1
Slatinska banka	0,863	0,411	0,000	0,208	0,551	0,593	0,584	0,863
Zagrebačka banka	1	1	1	1	1	1	1	1

Source: Author's developed with DEA software (2021)

Table 8: Results of DEA analyses for M9 – M15 models

Banks	M9	M10	M11	M12	M13	M14	M15
Addiko	0,343	0,738	0,868	1	0,337	0,626	1
Agram	0,284	0,694	0,611	0,684	0,232	0,422	0,807
Kovanica	0,168	0,838	1	1,000	0,000	0,475	1
Croatia	1	1	0,674	0,459	0,000	0,311	0,871
Erste	0,831	1	0,689	0,974	0,831	0,544	1
HPB	1	0,996	1	0,739	1	1	1
IMEX	0,248	0,863	0,876	0,610	0,000	0,317	0,981
IKB	0,768	1	1	0,515	0,303	0,768	1
J&T	0,995	0,995	1	0,728	0,000	0,467	1
Karlovačka banka	0,485	0,748	0,621	0,662	0,227	0,531	0,811
KENT banka	0,216	0,816	0,826	0,701	0,110	0,404	0,946
OTP	0,774	1	1	1	0,349	0,774	1
Partner	0,123	0,551	0,972	0,602	0,000	0,287	0,972
Podravska	0,570	0,934	0,502	0,614	0,495	0,626	0,918
Privredna banka Zagreb	1	1	1	1	1	1	1
Raifeisenbank	1	0,850	0,986	0,879	1	1	1
Samoborska banka	1	1	1	1	1	1	1
Sberbank	0,402	0,786	0,785	0,989	0,270	0,417	1
Slatinska banka	0,430	1	0,702	0,747	0,185	0,593	0,955
Zagrebačka banka	1	1	1	1	1	1	1

Source: Author's developed with DEA software (2021)

In terms of bank performance, the best results were obtained by Zagrebačka banka in all models. Other banks that show high efficiency results are Privredna banka Zagreb, Hrvatska poštanska banka, OTP banka, Raiffeisen Bank and Samoborska banka. These banks recorded a high or relatively high value of the minimum. All these banks except Samoborska banka are among the largest banks in Croatian banking market. From presented results it is obvious that the biggest banks in system show the best efficiency result so we can conclude that our first hypotheses that largest banks show better efficiency scores than the small ones are confirmed.

Table 9: DEA efficiency results of Croatian banks calculated in M1 – M15 models

Banks	Median	Min	Max	St.dev
Addiko	0,713	0,146	1,000	0,301
Agram	0,477	0,000	0,807	0,265
Kovanica	0,719	0,000	1,000	0,387
Croatia	0,674	0,000	1,000	0,354
Erste	0,831	0,027	1,000	0,321
HPB	1,000	0,106	1,000	0,249
IMEX	0,610	0,000	0,981	0,350
IKB	0,768	0,000	1,000	0,331
J&T	0,995	0,000	1,000	0,402
Karlovačka banka	0,592	0,000	0,811	0,228
KENT banka	0,594	0,000	0,946	0,330
OTP	1,000	0,073	1,000	0,324
Partner	0,293	0,000	0,972	0,341
Podravska	0,570	0,000	0,934	0,272
Privredna banka Zagreb	1,000	0,473	1,000	0,138
Raifeisenbank	1,000	0,139	1,000	0,235
Samoborska banka	1,000	0,000	1,000	0,373

Banks	Median	Min	Max	St.dev
Sberbank	0,537	0,232	1,000	0,291
Slatinska banka	0,593	0,000	1,000	0,293
Zagrebačka banka	1,000	1,000	1,000	0,000

Source: Author developed from DEA results (2021)

Looking at the medial values, the list of successful banks, in addition to those already mentioned, also includes Erste banka and J&T banka. In contrast, the least successful banks are, based on the results, Partner banka and Agram banka. It should be noted that in some models a few banks show 0 efficiency. The reason is that some banks record a loss for 2019, so under item profit/loss due to owners 0 is entered because DEA software couldn't operate with negative numbers. Also, 11 banks don't operate with securities, and it is obvious from efficiency results in models with this variable.

In order to identify the most successful models (i.e. the models that give the best results), descriptive statistics measures (median, maximum, minimum and standard deviation) were calculated for each of 15 models and for each bank according to the models.

Table 10: Descriptive statistics of DEA M1 – M15 models

Model	Median	Min	Max	S.Dev	Model	Median	Min	Max	S.Dev
M1	0,854	0,241	1,000	0,177	M9	0,669	0,123	1,000	0,336
M2	0,688	0,106	1,000	0,284	M10	0,965	0,551	1,000	0,134
M3	0,000	0,000	1,000	0,390	M11	0,924	0,502	1,000	0,167
M4	0,170	0,027	1,000	0,380	M12	0,743	0,459	1,000	0,188
M5	0,521	0,247	1,000	0,269	M13	0,251	0,000	1,000	0,384
M6	0,609	0,287	1,000	0,269	M14	0,568	0,287	1,000	0,257
M7	0,712	0,477	1,000	0,208	M15	1,000	0,807	1,000	0,063
M8	1,000	0,730	1,000	0,084					

Source: author's developed (2021)

Model 3, model 4, and model 13 were evaluated as the least efficient which is not a surprise because both model 3 and model 4 involves securities as a single output, and only 9 of 20 banks are involved in this kind of trading operations. The lowest medial values and the lowest minimum values were recorded in the mentioned models. Also, two banks reported a loss under item profit/loss due to owners, and also under net operating profit (loss), so these affect efficiencies for these models. Model 1, model 2, model 8, model and model 15 were rated as the most successful models. In these models, the minimum value is high and the highest median values were recorded. Also, the minimum standard deviation was determined for models 1, 10, 11 and 15. Common variables in the four most efficient models are deposits from customers, loans, interest income and interest expense. Common variables recorded in the three least efficient models are profit/loss due to owners and securities. The conclusion is that, in the future models and approaches in measuring Croatian bank's efficiency, securities and profit/loss due to owners should be avoided, as the sole variable, but they can be combined with other variables, such as loans or interest expense.

As shown in Table 10, both the lowest median value and the lowest difference between minimum and maximum is the largest for M3 and M4 model and amounts 1 and 0,97. Kolmogorov-Smirnov (K-S) test was performed joining and comparing two models with securities with other models to test the null hypothesis that all samples are from same

distribution (Titko, J., Stankevičienė, J., Lāce, N. (2014). The test was also performed for all pairs of models. Results for pairs where significancy is at <.001 level and the null hypothesis is rejected are presented in Table 11 (significance at 0,05 level).

Table 11: Results of Kolmogorov-Smirnov two-sample test

Pair of models	Significance	Pair of models	Significance	Pair of models	Significance
M3M1	<.001	M3M10	<.001	M4M1	<.001
M1M3	<.001	M3M9	<.001	M4M2	<.001
M3M5	<.001	M3M12	<.001	M4M5	<.001
M3M2	<.001	M3M14	<.001	M4M6	<.001
M3M6	<.001	M3M15	<.001	M4M8	<.001

Source: Author's developed from SPSS program (2021)

To find appropriate variable to include in future models for evaluating the efficiency of Croatian banks, selection was performed with pairs of models where the null hypothesis (samples are drawn form same distribution) was confirmed. Appropriate models are presented in Table 12.

Table 12: Results of Kolmogorov-Smirnov two-sample test

Pair of models	Sig.	Common variable	Pair of models	Sig.	Common variable
M1M8	.082	Deposits from customers Loans	M3M13	.082	Profit/loss due to owners
M14M6	.978	Deposits from customers Commission income	M12M6	.082	Deposits from customers
M2M7	.082	Commission expense	M1M12	.082	Deposits from customers
M11M8	.329	Commission expense Interest income	M9M6	.560	Profit/loss due to owners Commission income
M14M2	.819	No common variable	M8M15	.978	Deposits from customers Commission expense Loans Interest income
M2M5	.329	No common variable	M6M5	.560	No common variable

Source: authors developed from SPSS program (2021)

Deposits from customers are a repeating variable in five models. The second most common variable is commission expense (three models) and interest income, loans and profit/loss due to owners in two models. It can be concluded that loans don't make significant difference. To test the possibility that deposit from customers make a significant difference, and should be included in future models, a regression analysis was performed. DEA efficiency results in models M1, M6, M8, M12 and M14 were used as a dependent variable, and inputs and outputs of each model as predictors. The test was performed with and without deposits from customers as one of the input variables. Results do not provide the evidence of significance of variable deposits from customers. Adjusted R square in models M6, M8 and M14 was higher without deposits from customers as one of the predictors than in cases when it was included in analysis. Therefore, the conclusion is that, although deposits and loans are the most significant items of bank's financial reports, we cannot confirm our second hypothesis that deposits and loans should be used as the key variables in DEA model to measure the efficiency of Croatian banks. Finally, the adjusted R^2 was compared in all models and the highest value was achieved in

model M3 where R² amounted .927, and in model M13 .872. High value was also reached in M4, M5 and M14 models. The results of our study are quite similar to the results presented in Titko (2014) for Latvian banking sector. Future researches on this topic should include different pairs of models, and possible selection of certain groups of banks according to ownership or size.

5. Conclusion

The aim of the paper was to perform measure of efficiency of overall Croatian banking sector, and to examine appropriate variables to be included in future models for evaluating bank efficiency. Two research hypotheses were tested in this research. The first hypotheses were that large banks show better efficiency scores than the small ones, and the second one that deposits and loans should be used as the key variables in DEA model to measure an efficiency of Croatian banks. The selection of variables was performed, and through regression analysis, suitable variables for the DEA models were selected. DEA analyses under VRS assumption has been applied over 15 models with different combinations of input and output variables. The best profitability indicators were achieved by Zagrebačka banka. This bank has achieved the best performance indicated by an efficiency score of 1 in all 15 models. Other banks that obtained high average efficiency scores are Privredna banka Zagreb, Hrvatska poštanska banka, OTP banka, Raiffeisen Banka and Samoborska banka. This result proves our hypotheses that largest banks show better efficiency than the small ones and is consistent with market position of these banks. DEA method has some limitations, such as selection of variables and impossibility of excluding undesirable inputs, but it is valuable tool for comparing values obtained by different units. Common variables in the four most efficient models are deposits from customers, loans, interest income and interest expense. Banks with lower level of efficiency should control these elements in order to improve efficiency performance. Kolmogorov-Smirnov test results showed that the second hypotheses that deposits and loans should be used as the key variables in DEA model to measure an efficiency of Croatian banks wasn't confirmed. Although the most significant in financial reports of all banks, omission of this items from models do not result in reduction of adjusted R² in these models. Models which include securities and/or profit/loss due to owners as a sole variable are not appropriate for Croatian banking sector, but could be combined with other variables. Future research is needed to identify other significant variables which can affect bank efficiency performance. It should include different pairs of variables in models, and could be applied to a certain group of banks according to their ownership or size.

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DIGITAL TRANSFORMATION OF HIGHER EDUCATION DURING COVID-19: CROATIA AND SLOVENIA IN COMPARATIVE PERSPECTIVE

ABSTRACT

The current COVID-19 pandemic caused by the novel coronavirus SARS-CoV-2 has radically transformed the lives of masses of people, including higher education students. Apart from the devastating health consequences for those directly affected by the virus, the COVID-19 pandemic holds major implications for the way higher education students live and work, affecting their physical and mental well-being in profound ways. In an attempt to manage the spread of COVID-19, most governments decided to temporarily close all education institutions and suspended personal class attendance. This has led to a rapid transition from onsite to online study, which posed many challenges for both higher education institutions and students. Accordingly, the main aim of the paper is to provide some new insights of the implications of the COVID-19 pandemic on digital transformation in higher education by comparing Croatian and Slovenian experiences. Empirical data are derived from the comprehensive global student survey "Impact of the COVID-19 pandemic on life of higher education students", which was carried out online from 5 May 2020 to 15 June 2020 among more than 30,000 higher education students coming from all around the world. The final sample for Croatia covers 673, while for Slovenia of 1,043 survey responses. The empirical analysis is facilitated with established statistical techniques for multiple group comparison. The results show that both Croatian and Slovenian students exhibited higher satisfaction in different aspects of academic work and life. However, Slovenian students were more satisfied with the organization of online lectures, responses and support of teaching and support staff, had better access to infrastructure for studying at home and were more confident in using online teaching platforms, while Croatian students found it easier to adapt to the new teaching and learning experience. Policymakers and higher education institutions around the world may benefit from these findings while formulating policy recommendations and strategies to support students during this and any future pandemics.

Keywords: COVID-19, digital transformation, higher education, Croatia, Slovenia.

1. Introduction

The current COVID-19 pandemic has created an unprecedented challenge with drastic consequences for which higher education systems had no benchmark or previous experience available. The outbreak of health crisis, which started in December 2019 in the city of Wuhan, located in the Hubei Province of China, tremendously changed our lives in the beginning of 2020. The crisis, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was responsible for the respiratory disease the COVID-19 (Coronavirus Disease 19). Since, this early cases, the number of confirmed COVID-19 cases has grown rapidly and virus has spread across the globe at an incredible rate and has led to a global health crisis. On 11 March 2020, the World Health Organization declared a pandemic and countries started to put in place an unprecedented set of measures restricting mobility and economic activity to "flatten the curve", avoid the collapse of their health care systems and ultimately contain the number of fatalities (OECD, 2020a). This health crisis has driven the global economy into the deepest recession since the Great Depression (OECD, 2020b), which has rapidly transformed the lives of all people around the world in the first four months of 2020. Nobody could imagine that our lives would change so drastically in so short time. Nobody could not even visualize what the term of so-called total locking or popular "lockdown" represents at all. During "lockdown" majority of the countries closed schools, restricted travel across but also within countries and forbidden public gatherings (Obadić, 2021).

Restrictions have also been introduced for conducting economic activity. In few countries, all non-essential firms were closed by declaration while in others the restrictions applied only to activities or sectors bringing many people such as entertainment and accommodation. So, at the first the COVID-19 pandemic caused a "supply shock", as international supply chains, first with China and then across most countries and regions were interrupted. Companies found themselves forced to suspend or scale down operations. At the same time, demand also fell because people started protecting at home and because firms could not ensure safety and health conditions for all of their employees. Unlike during the global financial crisis of 2008, this time majority of developed countries responded quickly to put in procedure, an extraordinary set of fiscal and monetary policies. These measures were necessary in order to preserve jobs at least to some extent and reduce the social and psychological effects of the crisis. The "supply shock" quickly turned into a "demand shock" (OECD, 2020b) and majority of countries already have reported substantial drop in economic activity in the first quarter of 2020.

In such new circumstances, all companies and employees who are able to go to work in the online interface, have primarily switched the way of working. The COVID-19 pandemic is, among other things, a huge experimentation in telecommuting and teleworking. Of course, some jobs simply cannot be done at home. Thus, most people with tertiary education and higher paid occupations were able to organize their work from home during the lockdown, in contrast to people employed in the manufacturing industry as lower-income workers and with lower education who are unable to work from home due to the nature of the work they do. From spring 2020, teleworking became the usual mode of working for many employees with previously limited or no experience of working in this way. The e-survey shows that in July nearly half of the respondents classified as "employee" (48%) worked at home at least some of the time during the COVID-19 pandemic. Of these, over a third (34%) reported working exclusively from home (Eurofound, 2020). One of the economic activities that has gone entirely to teleworking is the system of education and schooling, and this pandemic has in particular severely impacted the entire higher education sector around the world (Marinoni et al., 2020). From the beginning of lockdowns in March 2020, all universities switched to a massive and unplanned social

experiment in remote work using different remote working tools, such as Google Docs, Google Meet, Microsoft Teems, Zoom, WebEx and other tools, that allows universities to be both highly productive and socially connected (Obadić, 2021).

This paper gives some insights of the consequences of the COVID-19 pandemic on digital change in higher education. The results obtainable in this paper are part of the comprehensive global student survey entitled "Impact of the COVID-19 pandemic on life of higher education students" provided by University of Ljubljana, Faculty of Public Administration. The survey provides systematic important insights into students' satisfaction and perception of different aspects of their life during the COVID-19 pandemic crisis. Except digitalisation and teleworking and e-learning in higher education the survey included also a mental health issues of students. The web-based survey was launched via the open source web application 1KA during the first lockdown and included more than 30,000 students from all the six continents. Accordingly, this paper is especially focused on the COVID-19 pandemic implications on digital transformation in higher education during first lockdown. More precisely, on the way how it has affected higher education live and work of Croatian and Slovenian students in the international context. Similar to other countries around the world, Croatian government decided to close all education institution in country on 13 March 2020 (Puljak et al., 2020). In that time, also the Slovenian government decided to close all educational facilities on 16 March 2020, whereby some institutions had already suspended personal attendance some days prior. Although the COVID-19 situation became better during the summer 2020, at the end of October 2020 the Europe, including Croatia and Slovenia, was again in the grip of a second wave of the COVID-19 pandemic.

The paper is organised as follows. After the first introduction section which describes the occurrence of the pandemic crisis and transferring to online mode of life, the second section explains methodological framework, including sample, data, variables and methodological approach. Third section presents the main empirical results of the comparative analysis between Croatia and Slovenia. The paper ends with discussion and conclusion in which the main findings are summarized.

2. Methodological framework

The data for this paper are derived from the most comprehensive and large-scale global student survey entitled "Impact of the COVID-19 Pandemic on Life of Higher Education Students" aimed at examining students' perceptions on the impacts of the first wave of COVID-19 pandemic in early 2020 on various aspects of their lives on a global level (Aristovnik et al., 2020a). The global student survey was initially launched by the Faculty of Public Administration – University of Ljubljana (Slovenia) and later, with the support of international partners, disseminated worldwide. The online questionnaire was adapted and extended from the European Students' Union (2020) survey. The questionnaire was formed by 39 questions, including mainly closed-ended questions. It focused on socio-demographic, geographic, and other aspects pertaining to the life of university students, such as academic online work and life, social life, emotional life, personal circumstances, changes in habits, the roles and measures of institutions as well as personal reflections on COVID-19 (Aristovnik et al., 2020b). At first, the online questionnaire was designed in English and later translated into six different languages (i.e. Italian, North Macedonian, Portuguese, Romanian, Spanish, and Turkish). The web-based survey was launched via the open source web application 1KA on 5 May 2020 and remained open until 15 June 2020 that is, in a period when most of the nations experienced the arduous restrictions imposed by the lockdown. The participation in the study reached global proportions,

by exceeding the milestone of 30,000 responses submitted by students all the six continents. The most comprehensive global study on impact of the COVID-19 pandemic on life of higher education students by utilizing the entire dataset was conducted by Aristovnik et al. (2020a).

The survey was intended to all higher education students who were at least 18 years old, representing the target population of this study. The respondents were recruited by convenience sampling facilitated by advertising on university communication systems around the world and social media. Considering ethical considerations all students were informed about the details of the survey and gave their informed consent before participating. Participation in the online survey was anonymous and voluntary, and students could withdraw from the study without any consequences. However, since the respondents were not obliged to complete the questionnaire in full, the number of respondents varied across questions. Accordingly, a complete case analysis approach was applied to mitigate missing data issues (Little & Rubin, 2019). With the assumption of "missing completely at random", meaning that the complete cases are a random sample of the originally identified set of cases, a complete case approach is the most common method for handling missing data in many fields of research, including educational and epidemiologic research (Pigott, 2001; Eekhout et al., 2012).

The paper is focused on the COVID-19 pandemic implications on digital transformation of higher education, more precisely on the way how it has affected higher education live and work of Croatian and Slovenian students in the comparative and international context. Accordingly, the paper includes only the data of the students from selected parts of the questionnaire. The final sample for Croatia consisted of 673 students and for Slovenia 1043 students what makes 2.2% and 3.4% proportion of all responses respectively. Table 1 presents the most important socio-demographic characteristics (age, gender, citizenship, status, level of study, field of study, scholarship, ability to pay and information on cancelled onsite classes) for the entire dataset as well as for Croatian and Slovenian sample.

Table 1: Socio-demographic characteristics of the survey participants - mean (SD) or number (%)

Age	Total sample	Croatia	Slovenia
Mean (SD)	23.6 (5.8)	22.3 (3.7)	21.8 (3.1)
Gender			
Male	10210 (34.4)	174 (26.2)	312 (30.4)
Female	19495 (65.6)	490 (73.8)	713 (69.6)
Citizenship			
Yes	28273 (94.1)	638 (95.7)	922 (89.1)
No	1758 (5.9)	29 (4.3)	113 (10.9)
Status			
Full-time	26418 (88.1)	588 (88.0)	1000 (96.4)
Part-time	3575 (11.9)	80 (12.0)	37 (3.6)
Level of Study			
First	23986 (80.5)	402 (60.3)	807 (78.1)
Second	4408 (14.8)	259 (38.8)	224 (21.7)
Third	1386 (4.7)	6 (0.9)	2 (0.2)
Field of Study			
Arts and humanities	2998 (10.2)	52 (7.8)	41 (4.0)
Social sciences	10878 (37.0)	588 (88.6)	529 (51.9)
Applied sciences	9157 (31.1)	5 (0.8)	61 (6.0)
Natural and life sciences	6392 (21.7)	19 (2.9)	389 (38.1)
Scholarship			
Yes	5769 (29.2)	111 (21.6)	259 (33.2)
No	13976 (70.8)	402 (78.4)	522 (66.8)
Ability to Pay[1]			
Yes	10374 (52.6)	265 (51.5)	508 (65.2)
No	9349 (47.4)	250 (48.5)	271 (34.8)
Cancelled Onsite Classes			
Yes	22758 (61.7)	514 (74.7)	741 (74.9)
No	3486 (38.3)	104 (25.3)	133 (25.1)

Note: Final sample consists of 30,383 respondents for all countries, 673 respondents for Croatia and 1043 respondents for Slovenia. The number of respondents may differ due to missing values. [1]Respondents who were able to pay the overall costs of study before the Covid-19 pandemic quite easily, easily, or very easily.

Source: CovidSocLab, 2020; authors' calculations

In the total sample, the average age of students was 23.6, which is higher than the average students' age in Croatia (22.3) and Slovenia (21.8). Moreover, approximately two thirds were female (65.6%) and in Croatian and Slovenian sample even higher, namely 73.8% and 69.6% respectively. Most of the respondents in the total sample were domestic (94.1%), full-time (88.1%) and first level (80.5%) students. Taking the aforementioned characteristics into account, similar structure of the sample can be observed also for Croatia and Slovenia. Additionally, a bit more than one-third of participants (37.0%) were studying social sciences, while this proportion for Croatia and Slovenia is even higher, indicating that the majority of the respondents came from social sciences (especially in Croatia). Moreover, on a global level, 29.2% students were receiving the scholarship, with Croatia having less students with scholarship (21.6%) and Slovenia having more students with scholarship (33.2%). Finally,

about half of students had been able to pay the overall costs of their study before the COVID-19 pandemic (total and Croatian sample), while this share is notably higher (65.2%) for Slovenian sample.

The selected individual aspects or elements of student academic work and life as well as infrastructure and skills for studying from home (i.e. satisfaction or agreement) were measured on a 5-point Likert-type rating scale ranged from 1 (lowest value) to 5 (highest value) (Aristovnik et al., 2020a). In order to identify the significant differences between Croatia and Slovenia, an independent-samples t-test is conducted. This parametric statistical technique is considered to be very robust method and it is the most commonly used method for detecting differences in averages between two groups (Rasch et al., 2007). Therefore, all the results are presented in the form of average values of responses.

3. Empirical results

The results of the COVID-19 pandemic implications on the digital transformation of higher education in Croatia and Slovenia show that students were dominantly satisfied with digitalisation of higher education and rapid transfer of various courses from onsite to online in March 2020. The predominant part of online classes on universities in Croatia (83%) and Slovenia (85%) have been cancelled due to the COVID-19 pandemic (international average is 87%). From that time, online learning or e-learning became a mandatory teaching and learning process of higher educational institutions.

Teaching online is not just putting learning materials online. Lecturers must organize the new way of learning methods accordingly to the new mode of delivery, so that students do not feel isolated and alone in the learning process (Aristovnik et al., 2020a). In order to contribute to the best possible organization of online teaching and the way it is conducted, at the time of the lockdown, universities were dependent on the existing knowledge of their students, teachers and ICT equipment owned by them as an institution and their employees privately (Obadić, 2021). Therefore, in survey, students were asked about their satisfaction with the organization of classes. The Figure 1 shows students' satisfaction with lectures, tutorials/seminars and practical classes and supervisions/mentorships separately.

Figure 1: Students' satisfaction with the organization of classes
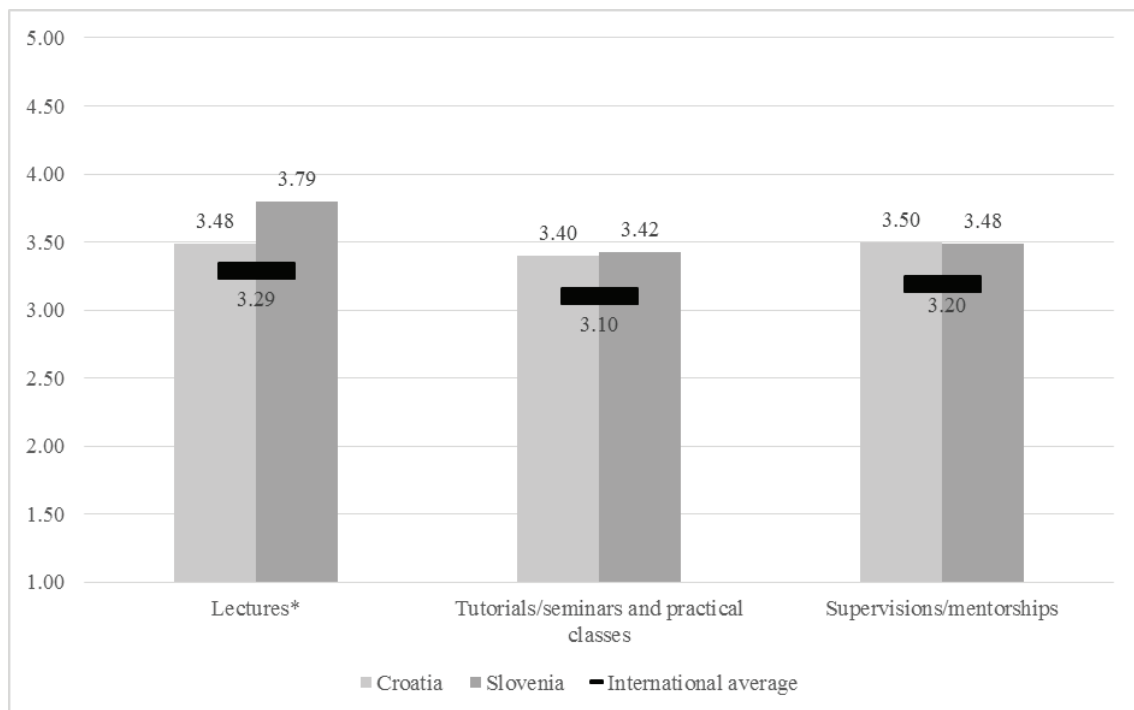
Note: 1) Measurement: A five point Likert scale (from 1 - very dissatisfied to 5 - very satisfied. 2) Significance: *$p<0.05$.

Source: CovidSocLab, 2020; authors' calculations.

On a global level, the highest students' satisfaction with the organization of classes can be observed for lectures, followed by supervisions/mentorships and tutorials/seminars and practical classes, whereby Croatian and Slovenian students notably exceed the international average in all three segments of the teaching process. However, the comparison between Croatia and Slovenia reveals that students from Slovenia were significantly more satisfied with the organization of lectures than their counterparts from Croatia, while the differences in the remaining two segments of the teaching process were not significant.

Students also found it difficult to focus during the online teaching in comparison to onsite teaching and reported worse perceived study performance since onsite classes were cancelled, however they adapted quite well to the new teaching and learning experience (Aristovnik et al., 2020a). Studying from home requires more self-discipline and motivation to follow through online lessons, especially at the beginning of that lockdown period when students were getting used to the new system. At that time students had also many questions and they also expected timely answer. Therefore, they were asked how their teachers coped in these new circumstances and how they liked academic work (see Figure 2).

Figure 2: Students' perception on lecturers' responses
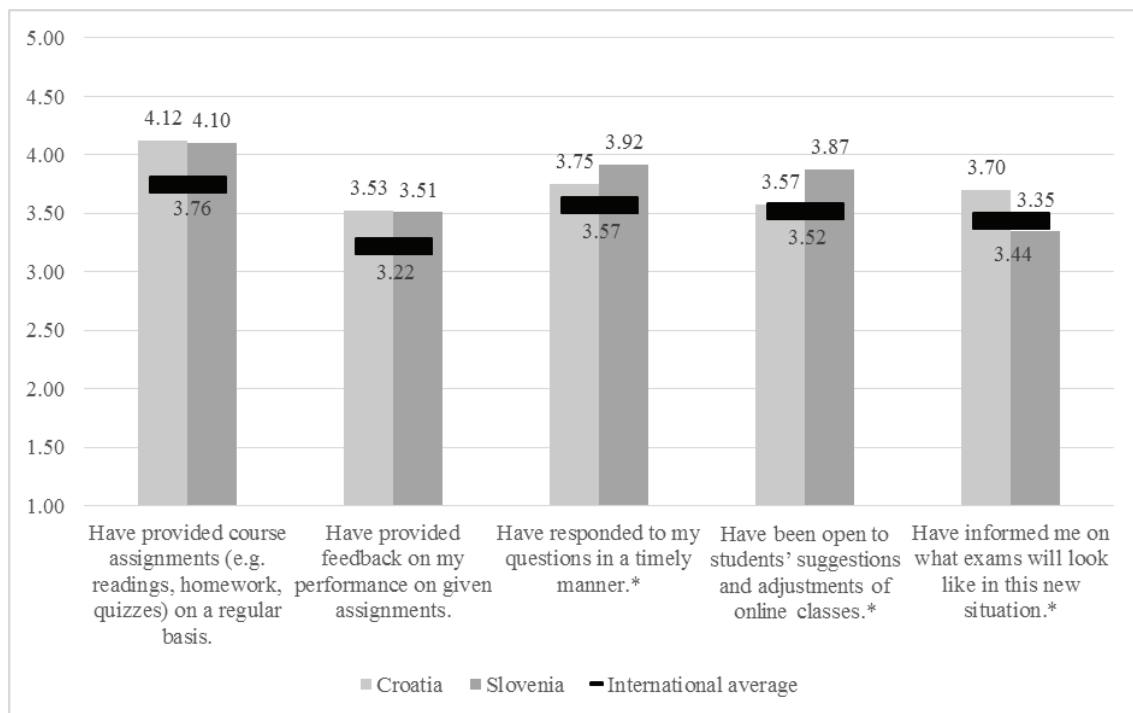
Note: 1) Measurement: A five point Likert scale (from 1 - strongly disagree to 5 - strongly agree. 2) Significance: *p<0.05.

Source: CovidSocLab, 2020; authors' calculations

Students mostly agreed with new academic workload and new circumstances and the fact that lecturers were preparing regular course assignments, e.g. readings, homework, quizzes, satisfied them a lot. This is especially true for both Croatian and Slovenian students, remarkably exceeding the international average. They were also much more satisfied with the feedback of their lecturers compared to the international average. Higher satisfaction in both countries can be observed also for other remaining elements related to lecturers' responses (except for information on exams, where Slovenia is below the international average). Additionally, the comparison between Croatia and Slovenia reveals significant differences in lecturers' responsiveness and openness for suggestions with the leading role of Slovenia and significant differences in lecturers' information on exams with the leading role of Croatia.

In a sudden and unpredictable crisis such as the COVID-19 pandemic, many questions emerge, and students need the support of various services (Aristovnik et al., 2020a). Accordingly, students were also asked how they were satisfied with the support of different options of educational and teaching staff and services (see Figure 3). Globally, the highest satisfaction can be observed especially for teaching staff, followed by public relations and tutors. Contrary, the lowest satisfaction is identified for international office and finance and accounting. However, the results show that Croatian and Slovenian students were on average more satisfied with support of all teaching and technical staff and services at the university level then international students on average. Finally, a comparison between Croatia and Slovenia reveals that Slovenian students were in general significantly more satisfied with the support of teaching and support staff than their counterparts from Croatia (except in the case of tutors, where the results are not significant). Therefore, higher education institutions should pay more attention on digitalization of this segment in order to be more prepared for the potential next waves of the COVID-19 pandemic in this area as well.

Figure 3: Students' satisfaction with support of teaching and support staff
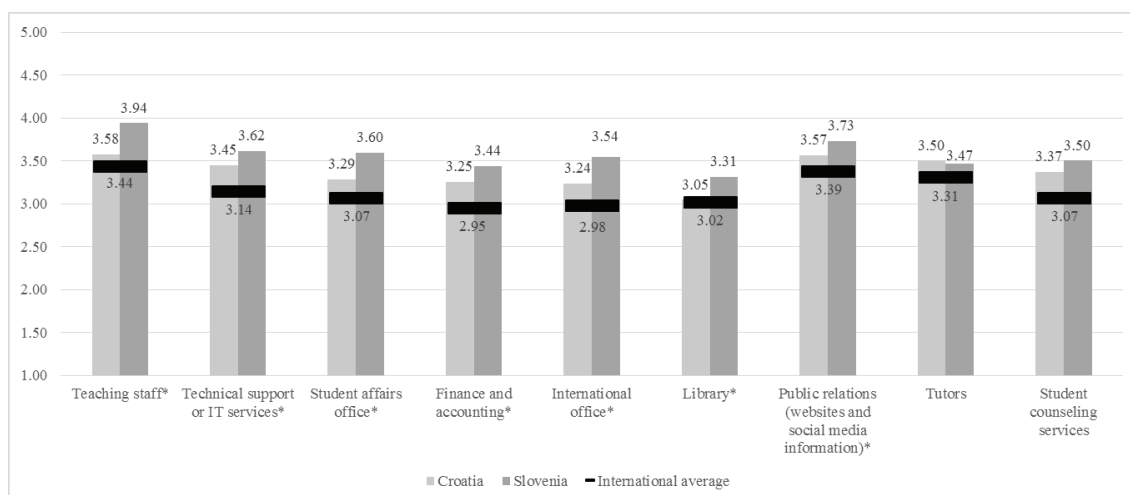
Note: 1) Measurement: A five point Likert scale (from 1 - very dissatisfied to 5 - very satisfied. 2) Significance: *p<0.05.

Source: CovidSocLab, 2020; authors' calculations

The complete transition from onsite to online lectures presented a great challenge to many students. Namely, the transition was quick and not much time was available for students to prepare for the new way of learning (Aristovnik et al., 2020a). The results presented in the Figure 4 show that Croatian and Slovenian students found it less difficult to focus during online teaching in comparison to onsite teaching, which is further confirmed by higher values for improved performance and lower values for worsen performance. Students from both countries have also adapted well to the new teaching and learning experience along with mastering the skills and figuring out how to do the most difficult classwork. Moreover, the comparison between Croatia and Slovenia reveals that Croatian students were in significantly better position in mastering the skills and figuring out how to do the most difficult classwork, while Slovenian students were in significantly better position in focusing during online teaching and performance.

Figure 4: Students' adaptation and performance in new teaching and learning environment
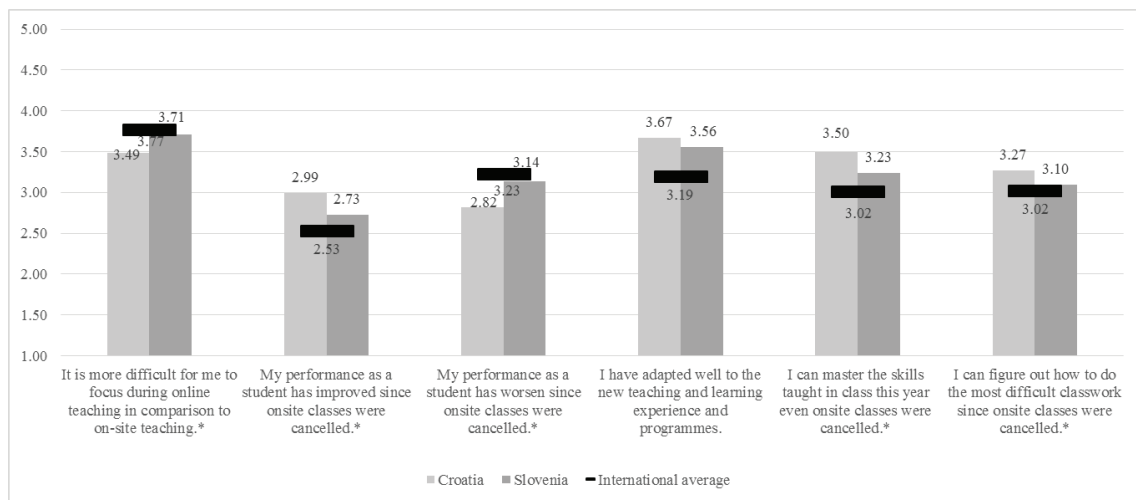
Note: 1) Measurement: A five point Likert scale (from 1 – strongly disagree to 5 – strongly agree. 2) Significance: *p<0.05.

Source: CovidSocLab, 2020; authors' calculations

Of course, at the time of the transition to online teaching, a large number of students had problems with various forms of home digital infrastructure for continuous and efficient monitoring of teaching and studying (Aristovnik et al., 2020a). Namely, the appropriate ICT infrastructure, including a good internet connection, is essential for online learning and also often considered as a precondition for acquiring digital skills and competences. Accordingly, the Figure 5 shows a comparable data for Croatia, Slovenian and international average.

Figure 5: Students' access to infrastructure for studying at home
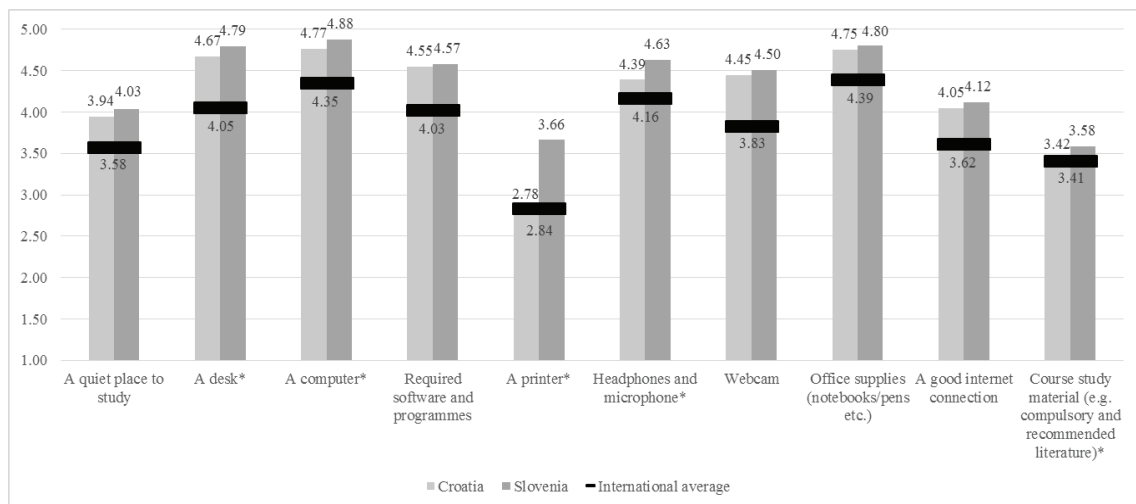
Note: 1) Measurement: A five point Likert scale (from 1 – never to 5 – always. 2) Significance: *p<0.05.
Source: CovidSocLab, 2020; authors' calculations

The results show that Croatian and Slovenian students had greater access to infrastructure for studying at home compared with international average (except for access to a printer, where Croatia is below the average). Moreover, the comparison between Croatia and Slovenia show that Slovenian students had an advantage in terms of access to infrastructure for studying at home, especially in access to a desk, computer, printer, headphones and microphone and course study material where significant differences are confirmed. It seems that the COVID-19

pandemic has exposed inequalities in the EU and beyond in terms of access to the appropriate infrastructure (i.e. good internet connection) and consequently also in terms of access to education. Therefore, closing the digital education gap should be a priority (European Parliament, 2020).

Finally, students were also asked about their confidence in computer skills. Namely, the Digital Education Action Plan (2021-2027) emphasizes the needs for basic digital skills and competences (i.e. digital literacy, including fighting disinformation; computing education and good knowledge and understanding of data-intensive technologies, such as artificial intelligence) as well as advanced digital skills which produce more digital specialists and also ensure that girls and young women are equally represented in digital studies and careers (European Commission, 2020). The Figure 6 presents students' confidence in computer or digital skills.

Figure 6: Students' confidence in computer skills
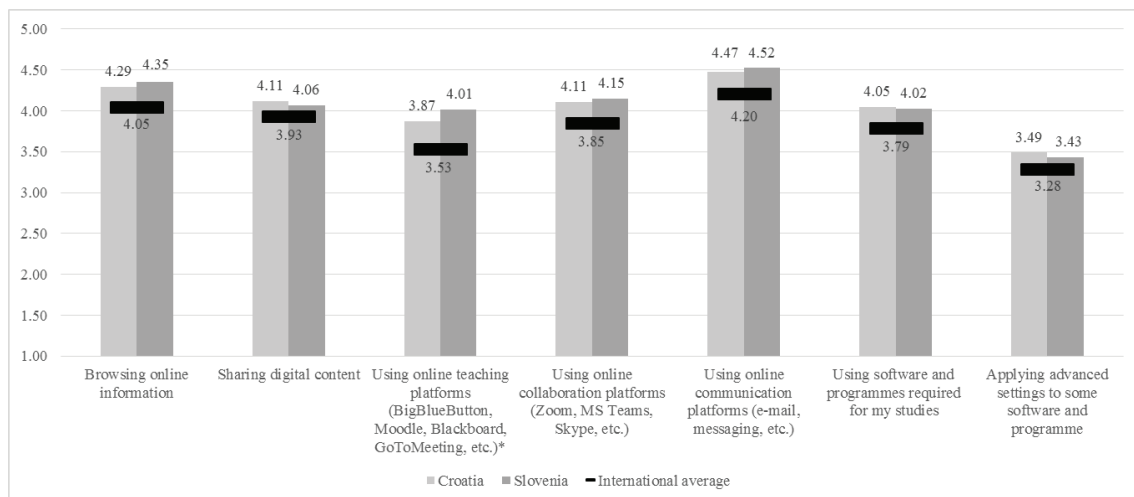
Note: 1) Measurement: A five point Likert scale (from 1 – strongly disagree to 5 – strongly agree. 2) Significance: *p<0.05.

Source: CovidSocLab, 2020; authors' calculations

The results show that students from Croatia and Slovenia are more confident in computer skills compared to the international average. Moreover, the comparison between Croatia and Slovenia reveals that students from both countries are similarly confident in digital skills. Nevertheless, the results suggest that Slovenian students are more confident in using online teaching platforms than students from Croatia.

4. Discussion and conclusion

Considering digitalisation of higher education in Croatia and Slovenia during the first lockdown, the presented empirical results call for an intense preparation for potential next waves in the future. That is especially important in the context of equipping lecturers and students with skills for using those online platforms and online learning and teaching skills as well as better digitalization of library and international office services. Namely, lack of computer skills and the perception of a relatively higher workload prevented students from perceiving higher performance when adapting to the 'new normal' with education from a distance. These findings should indicate higher education authorities that they should better cooperate with other stakeholders and immediately pay special attention to the vulnerable

student groups, who still do not have the financial and material capacity to obtain better digital infrastructure. Obviously, it has to be stressed that this research has some restrictions and limitations.

First, the majority of parts in the questionnaire were in the form of students' self-report. This kind of procedure is usually complex and requires both memory and understanding, where a recall bias and social desirability bias may be caused by the self-reported property of the research. Therefore, is rational to assume that some students might under/overestimate their satisfaction with and perception of the selected aspects/elements of their lives during the COVID-19 pandemic. Secondly, to access the questionnaire which was online, all students needed to have electronic devices and internet connection. These aspects may indicate inherent bias. Thirdly, the perspective of academic and non-academic staff members was not considered in this study, thus, it might be considered in a future one. Also, teachers and authorities must take in account that every modification generates many uncertainties in the university context. For example, not attending face-to-face lessons made the American students worried, nervous and anxious – therefore 75% of them would like to go back to face-to-face interactions (Alemany-Arrebola et al., 2020); in Romania both teachers and students and parents do not agree with the continuity of online learning (Ionescu et al., 2020).

The year 2020 will undoubtedly go down in history as the year of the COVID-19 pandemic, which tremendously reshaped the socio-economic situation all over the world. At present, shifting as many people as possible to home-based telework is a necessary response to a terrible crisis. In the post-pandemic world, it may stay with us as a popular practice that, if done well, can improve job satisfaction, raise productivity, reduce emissions, and spread work to more remote regions. But in terms of conducting various forms of online teaching in higher education, previous experiences and survey perceptions of students still point out that nothing can replace the face-to-face teaching and onsite lectures. Digitalization has proven to be important and crucial in functioning of higher education during lockdown, but most students do not approve it as a permanent substitute for teaching methods. Croatian and Slovenian students exhibited higher satisfaction in different aspects of academic work and life. However, Slovenian students were more satisfied with the organization of online lectures, responses and support of teaching and support staff, had better access to infrastructure for studying at home and were more confident in using online teaching platforms, while Croatian students found it easier to adapt to the new teaching and learning experience. Policymakers and higher education institutions around the world may benefit from these findings while formulating policy recommendations and strategies to support students during this and any future pandemics.

Recommendations for future research could be expanded to a similar survey to teaching staff and other employees at higher education institutions on the impact of the COVID-19 pandemic on their professional and private lives. In such way, it would be possible to compare technical and teaching methods in the two countries and thus indicate possible improvements in both of their higher education system.

Acknowledgement

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THE INFLUENCE OF THE TOURIST SEASON ON THE FINANCIAL OPERATIONS OF SLAVONIAN WINERY

ABSTRACT

Tourism as an economic branch and the business sector as well as the term of the tourist season in Croatia, do not refer only to tourist destinations on the Adriatic coast, islands, national parks and historic cities. Tourism includes the merging of all products and services that are created in the entire territory of the country. Wine as a product is an indispensable part of the tourist offer of every country. Slavonia as a region occupies a significant place in Croatian wine production. The aim of this paper is to determine if there is a financial correlation between the tourism and wine production through a financial analysis of the operations of three wineries; Kutjevo d.d., Ilok cellars d.d. and Belje plus L.t.d.. in the period before and after the decrease of revenues from the tourist season due to the current coronavirus crisis. The selected wineries are large wineries whose produced quantities of wine range in the millions of liters and whose financial data have been made public through audit reports on the web-pages of FINA and the Court Register. All three wineries had successful business and generated significant revenues and profits in 2019. The research of financial reports and comparisons of individual reports by selected years with their analysis leads us to the cognition that the decline in the value of revenues from the tourist season in Croatia affects the decline in the value of revenues in selected wineries. The results of this paper are expressed as data in relative numbers and percentages that show how much the decline in the value of income in the tourist season affects the overall decline in revenue in the sale and distribution of wine in tourist destinations.

Keywords: *Tourist season, Slavonian wine region, Wine production.*

1. Introduction

The location and climatic conditions on the territory of the Republic of Croatia have been crucial for the development of grape and wine production during the past. There are long traces of that production and they go far back in time. For the purposes of this paper, only some of the most important statistical indicators that give us a picture of viticulture in these areas will be listed. Back in 1880, there were about 170,000 ha of vineyards in Croatia and grape production was the most important branch of production. The population of the Croatian islands lived from vineyards and vine growing. This lasted until the onset of phylloxera grape disease in 1913 which destroyed vineyards and displaced island populations around the world, mostly to Australia, New Zealand and America. In 1940, vineyards in Croatia covered about 80,000 ha and Dalmatia, with about 50,000 ha, occupied the largest part, while the Slavonia region had about 9,000 ha of land covered with vineyards. Nowadays, there are about 20,000 ha of vineyards in the Republic of Croatia, of which 6,000 ha are in Slavonia. It is evident that the viticultural map of Croatia has changed a lot and that the

smallest decrease in the area under vineyards is in Slavonia. Dalmatia, as a former large region under vineyards, has replaced vineyards with tourism and cleared areas under vineyards to increase accommodation capacity for an increasing number of tourist visitors. Tourism as the predominant activity of the of the coast and islands population and partly the activity that brings more income within Slavonian wineries indirectly affects the production of wine in Slavonia because some of these wines are sold through tourist offer on Adriatic coast and stronger tourist supply on winery locations.

The Committee for Viticulture of the Croatian Chamber of Agriculture concludes that in 2020, due to the impact of the crisis, the sales of wines from Croatian producers could be reduced by 30 or even up to 50 percent. A particularly large decline is expected for bottled wines and smaller winemakers, while a smaller percentage can be expected for larger winemakers and for sales through retail chains. They consider the viticulture and winemaking sector to be one of the most affected by the impact of the COVID-19 crisis. We are facing big problems in the purchase of grapes and the own production of grapes of most producers could partially remain in the vineyards. A big problem is also expected in the 2020 harvest due to wine stocks, which will make it impossible to produce and store new quantities of wine. This paper aims to show the extent of the influence of the reduced number of tourist arrivals caused by the COVID 19 pandemic on the financial operations of the Slavonian winery. Although the success of the tourist season or the number of tourist overnight stays is only one of many factors that affect revenues from the sale of wineries, in this paper, the research is limited to this one factor and will show how the number of tourist overnight stays affects sales revenue and financial results of wineries. After showing how the corona crisis affects the tourist season, the paper will present a projection of the impact of the decline in sales revenue on the final result of the winery's operations. In the last part of the paper the statistical method of regression based on historical data will be used to predict sales revenues for 2020, assuming that sales revenue depends on the tourist season or the number of overnight stays. The model will be developed on the example of the company Kutjevo d.d., since quarterly financial reports for the period from 2009 until today are available for that company.

Kranjčević and Gartner researched the impact of agriculture, culture and tourism on the development of wine regions. Due to restrictions on the production of small quantities of wine, winemakers in Croatia cannot compete with large, well-known producers, but they can always compete through a tourist perspective. The authors conclude that there are characteristics of traditional heritage in three sectors (agriculture, culture and tourism) that are associated with wine production and sales. (Kranjčević and Gartner, 2019). Razović studied wine tourism as a special form of tourist offer in Dalmatia and in his paper emphasizes that the development of wine tourism contributes to the positioning and recognition of a particular tourist area and creates a competitive advantage. (Razović, 2015). The paper written by Koščak examines the challenges of integrating sustainable viticulture into wine tourism on the example of Slovenia and abroad. According to Koščak, the wine and enogatronomy are becoming key elements in the development of tourism products in wine-growing regions, but it is also necessary to follow new trends according to which the tourism services segment should be integrated, especially through leisure and relaxation activities in the selected destination. (Koščak, 2018) Lopes, Silva, Seabra and Abrantes believe that wine tourism could play an important role in regional development and should not be restricted to wine-growing units with the capacity to receive visitors. They find wine tourism as an factor that can alleviate socio-economic imbalances and improve the quality of life of local communities, support traditional culture, promote the recovery of historic sites and the territorial conservation. (Lopes, Silva, Seabra and Abrantes, 2018) The relationship between tourism

and sustainability in wine-related enterprises in Greece was studied in the paper made by Karagiannis and Metaxas. After conducting research, they found that there are number of aspects between the sustainable wine tourism business practices and the way that innovation has evolved. (Karagiannis and Metaxas, 2020)

2. The impact of the corona crisis on the tourist season

The mobility of the population, in which tourist movements play a special role, is the main cause of the rapid spread of the corona-virus in the world and especially in Europe, and the question arises as to what will happen to Croatian tourism. More accurate prognoses are very ungrateful given the many unknowns associated with corona-virus spread. It was expected that in 2020, even under the precondition of the contagion in the coming months, the number of tourists in Croatia will be drastically lower than years before. (Klarić, 2020)

Table 1: Tourist traffic in Republic of Croatia

	2019	2020	Indexes 2019/2020	Change in percentages
January	207. 643	219. 733	105, 82	+ 5,8 %
February	264. 484	278. 741	105, 39	+ 5,4 %
March	449. 620	104. 391	23, 22	- 76,8 %
April	1. 105. 099	2. 241	0, 20	- 99,8%
May	1. 569. 271	62. 049	3, 95	- 96,0 %
June	2. 921. 391	787. 696	27, 31	- 72,7 %
July	4. 325. 686	2. 245. 831	51, 92	- 48,1 %
Auguust	4. 712. 039	2. 467. 957	52, 38	- 47.6 %
September	2. 170. 039	488. 212	22, 49	- 77,5 %
October	1. 076. 316	184. 593	17, 15	- 88,2 %
November	390. 886	87. 224	22, 31	- 77,7 %
December	372. 200	62. 460	16, 78	- 83,2 %
TOTAL	*19. 534. 674*	*6. 991. 128*	*35, 78*	*- 64.,2 %*

Source: author's calculation according to Central Bureau of Statistics data

Table 1 shows the 2020 tourist season by months and number of guests in relative numbers and percentages. It can be seen that the number of guests in the Republic of Croatia in 2020 was lower by 12.543.546 compared to 2019. An increase in the number of guests was recorded only in January and February, while the largest decline in the number of guests was recorded in April and May. As of the time of writing no official data on submitted financial reports for 2020 have been published, there will be presented a projection that the turnover in selected organizations due to the reduction in the number of tourists will decrease by 20% due to the tourist season caused by COVID-19.

Further preventive use of many restrictive epidemiological measures in Europe and the world is to be expected, especially those relating to free movement between individual countries even in the case of a long-term absence of the number of newly infected with corona-virus. The coronavirus pandemic has caused a crisis in health systems and a halt to economic activity. This means that even if the movement resumes soon, many people will not be able to take tourist trips, and those who are afraid of the possible spread of the virus and the deterioration of their financial situation will be primarily oriented to travel in their own country or neighborhood. Croatia is at a disadvantage due to low domestic demand, but at the same time it has an advantage due to its location close to the main European markets easily accessible by car. (Klarić, 2020) Although the Croatian economy is largely dependent on tourism revenues, its lack expresses even more the weaknesses of the entire economy, which

has not developed its production but has to rely on imports and is therefore extremely sensitive in times of crisis. Success of tourism depends on transport, culture, sports, agriculture and other sectors, which makes it so-called a 'horizontal sector' but this interdepartmental cooperation in our country was insufficient. Now in the course of this crisis, it can be seen how important it is to cooperate, and this could be extremely useful in the future and in the time of recovery. (Čorak, 2020) The extension of the tourist season is being achieved by innovating the tourist offer by introducing new tourist products. One of these products is wine tourism. Natural conditions and the millennial tradition of growing vines and wine production create exceptional opportunities for the development of wine tourism and enrichment of the tourist offer in Dalmatia. When visiting a particular tourist destination, tourists are looking for authentic and unique experiences The development of wine tourism is important because it contributes to the positioning and recognition of a particular tourist area, which creates a competitive advantage. (Razović, 2015)

Enophile tourism is recognized as a catalyst for regional economic development for several reasons, especially for relatively small and spatial fragmented grapegrowing rural areas. Such regions have low wine production and as such do not have a leading position in the market wine. In times of economic prosperity, that kind of regions have the opportunity to encourage the growth of wine production to its limits and achieve the greatest possible benefits through wine retail. (Kesar and Ferjanić, 2010) Among the various products that can be supported as a development priority of Dalmatian tourism is wine tourism where is a long tradition of growing vines and wine production, which has been growing steadily in recent decades. It is in the interest of tourism to preserve the local tradition and economically sustainable development. With the modest help of the public sector, this product can very quickly reach high market positions as the winemakers have already invested in the development of basic infrastructure in which they can receive visitors. Tourists are increasingly looking for an authentic and unique experience in a tourist destination which is why the wine tourism is also considered as a product that is in line with current market demand in the sense. Local food and wine create an opportunity for tourists to get to know each other the people who produce those products. Business activities in wine tourism are a prerequisite for an attractive image of the destination as the wine is also often associated with the special characteristics and taste of a tourist destination. (Razović, 2015)

3. Projection of the impact of declining sales revenue on profit

For regions with relatively small spatially fragmented wine-growing rural areas that have low wine production, in times of global economic crisis, development opportunities are rapidly diminishing and becoming a challenge for future development. Enophile tourism is imposed as a concept of promoting regional development based on natural (agricultural) resources and focused mainly on small and medium enterprises, which includes networking, cooperation and continuous product innovation. Enophile tourism is of growing interest to many entrepreneurs in regions with bio-geographical preconditions for vine growing, wine storage and maturation, as well as certain tourist infrastructure that allows visitors to stay longer in the area, greater consumption and economic benefits for the regional economy through its potential to contribute to sustainable rural development and self-employment. (Kesar and Ferjanić, 2010)

The following is a projection of the impact of the decline in sales revenue on profit at the end of the business year. The projection was made on the example of three large wineries - Belje plus L.t.d.., Ilok cellars d.d. and Kutjevo d.d.. The projection aims to show how a drop in sales

revenue of 20%, with other unchanged conditions and the same operating expenses, would affect the final operating result. The projection in which only the item of revenue is reduced is unthinkable in practice because in every company, reducing income also reduces costs, because in order to sell something you must have costs, and if sales stop or decrease, it is logical that costs reduce too. Since the financial statements for 2020 have not yet been published, it is difficult to predict cost reductions. For the purposes of this paper, such a projection was used to show how much the decline in sales revenue affects the company's profit.

3.1. Belje plus limited liability company for agriculture, processing industry and trade of goods

The website of Belje plus L.t.d. shows some important dates and important historical figures for their history under the History and tradition section. Eugene of Savoy, for the victory over the Ottoman Turks in 1697, gets Belje, a beautiful but devastated estate in South Baranja. The military leader organizes the estate in Western European style. After the death of Eugene of Savoy, he was succeeded by the famous Queen Maria Theresa. In 1824, an interesting description of Belje was written by a senior estate official. It emphasizes the good climate, favorable position along the navigable river Danube, quality land for growing all kinds of crops and states that hard work and smart investments have contributed to the development and exploitation of natural resources (https://www.belje.hr). Another date of great importance for this paper and this large winery is the fall of 2011 when Belje plus L.t.d. opens a large state-of-the-art winery in the region with a capacity of 8 million liters and for the equipping of which 20,000,000 Euros were spent. This modern winery and vineyards, which cover an area of 600 ha, rank the company Belje plus L.t.d. among the largest wineries in the region. About 2.7 million liters of wine are produced annually in Belje vineyards. In accordance with the planned rebranding and changes in the range, in 2019 the realization of the classic line was reduced, and the sale of the selected line of quality wine bottles was increased, which will be the main type of packaging for Vina Belje in the future. Belje wines are also a world benchmark for Graševina. Graševina Vina Belje is Graševina with the most awards in Croatia, and in 2019 a large project of exporting Graševina to the Russian market was launched. (Fortenova Group)

Table 2: Profit and loss account of the Belje plus limited liability company for the year 2019 and projection for 2020

	2019	**Projection 2020**
Sales revenue	964.989.000	960.000.000
Other income	111.727.000	111.727.000
Total revenue	1.076.716.000	1.071.727.000
Change in the value of inventories, production in progress and finished goods	25.720.000	25.720.000
Costs of raw materials, materials and sold goods	(646.000.000)	(646.000.000)
Service costs	(123.225.000)	(123.225.000)
Staff costs	(115.945.000)	(115.945.000)
Amortization of intangible assets and property, plant and equipment and biological assets	(31.027.000)	(31.027.000)
Amortization of assets with the right of use	(6.985.000)	(6.985.000)
Other costs	(36.078.000)	(36.078.000)
Total expenses	(933.540.000)	(933.540.000)

	2019	**Projection 2020**
Financial revenue	1.097.000	1.097.000
Financial expenses	(62.371.000)	(62.371.000)
Profit before tax	*81.902.000*	*76.902.000*
Profit tax	(15.257.000)	(14.381.000)
Net profit	*66.645.000*	*62.521.000*

Source: author's calculation according to annual financial statements

Business of the company Belje plus L.t.d. in 2019. is shown in Table 2 according to the publicly disclosed financial statements. Both the projection and the author's calculation are presented under the assumption that wine sales revenues will decrease by 20% in 2020 under the influence of COVID-19, while costs and operating expenses will remain the same.

Belje plus L.t.d. operated with a profit of HRK 66,645,000 in 2019. According to the report of the company's management, Belje plus L.t.d. is the largest agricultural company in Croatia, which cultivates almost 18,000 ha of arable land in the area of Baranja and central Croatia. The Belja Plus crop husbandry produced 141.851 tons of sugar beet, 57.964 tons of corn, 25.751 tons of wheat, 14.853 tons of barley, 2.783 tons of oil-seed rape, 5.186 tons of soybeans and 107.318 tons of other field crops. Through its production of 2 million liters, the winery participates in total revenues with HRK 25 million, which is 2.5% of total revenues. In the projection for 2020, the profit decreased by 6.1% due to the decrease in sales revenue.

3.2. Ilok Cellars Corporation

Ilok cellars are located on the right bank of the Danube, in the easternmost city of the Republic of Croatia, Ilok, which is known as a city of antiques and wine. Here they continue the centuries-old tradition of growing vines and wines of high quality assortment from vineyards that descend to the mighty Danube in the undulating plateaus of the western slope of Fruška gora. They produce wine on 990 ha of vineyard positions (330 ha of their own and 660 ha from the purchase) and annually produce a total of about 4 million liters of wine. In addition to the core business, viticulture and wine making, they develop an authentic and unique tourist offer, connecting the contents of the tourist destination with wine making and viticulture (https://www.ilocki-podrumi.hr). For the purposes of this paper, a profit and loss account projection for 2020 will be made in a Table 3, with a possible revenue decline of 20% due to COVID-19 along with unchanged costs and operating expenses.

Table 3: Profit and loss account of the company Ilok Cellars Corporation for the year 2019 and the projection for 2020

	2019	**Projection 2020**
OPERATING INCOME	66.919.005	54.464.537
Sales revenue	62.272.340	49.817.872
Other operating income	4.646. 665	4.646.665
OPERATING EXPENSES	61.714.021	61.714.021
Material costs	29.092.897	29.092.897
Staff costs	20.731.481	20.731.481
Amortization	7.857.277	7.857.277
Other costs	4.032.366	4 032.366
Profit (Loss) from ordinary activities	5.204.984	(7.249.484)
Financial revenue	117.060	117.060

	2019	**Projection 2020**
Financial expenses	3.132.416	3.132.416
Profit (Loss) from Financial Activities	(3.015.356)	(3.015.356)
Profit (Loss) before tax	***2 .189.628***	***(10.264.840)***
Profit tax	(541.700)	
Profit (Loss) after tax	***1.647.928***	

Source: author's calculation according to annual financial statements

In the case of the Ilok Cellars corporation, reduced sales revenues, along with other unchanged revenues and expenses, would cause the loss in 2020, as opposed to 2019 when the corporation operated with a profit at the end of the year. Sales revenues account for a large percentage of the company's total revenues, and the reduction in this maximum revenue has resulted in expenses becoming higher than revenues and the result is a loss.

3.3. Kutjevo d.d.

The first written records of Kutjevo date back to the 13th century, when the Cistercian monks, known to the people as white friars, founded the abbey of Vslis Honesta de Gotho in 1232. The famous wine cellar originates from that time, and according to tradition, there is a stone table from the time of Baron Franjo Trenk and Empress Maria Theresa. In 1536, this area was conquered by the Ottomans, and after 150 years of Turkish rule, from 1686, the nobleman Ivan Josip Babić ruled here. In 1698, with the consent of Emperor Leopold, he handed over the manor to the Jesuit order on the condition that the income goes to benefit of the spiritual and educational development of the people. The Jesuits restored the abbey, built a baroque castle, which they completed in 1725, restored the cellar and especially improved viticulture and cellaring. From 1773 to 1882, the estate was managed by the Hungarian State Chamber. At that time, Kutjevo stagnated, which is why an auction was announced for the sale of the Kutjevo property. It is bought at auction by the Turković family. During sixty-three years (1882-1945) the family of Baron Turković built the Kutjevo estate and brought it to its greatest prosperity. After the Second World War, the socialist combine PPK Kutjevo was created, which existed until 2003, when it was privatized. Kutjevo d.d. owns 420 hectares of its own vineyards on the southern slopes of the Papuk and Krndija mountains and cooperates with grape growers on about 400 ha of vineyards.

A positive example of business in the time of the crown came from the Kutjevo winery. Through investments in product quality, marketing promotion and long-term cooperation with proven distributors and customers, the winery records continuous exports even during the pandemic. They sell wine in more than 25 countries while the most important market is Bosnia and Herzegovina, followed by Germany, Austria and Switzerland, Montenegro, Sweden, Poland, Great Britain, Canada and China. In the first three months of 2020. they achieved almost identical results as last year which would have been even better if a pandemic of the COVID-19 virus had not been declared in mid-March. After the appearance of the corona crisis they faced the cancellation of orders for British Columbia (Canada) and the Czech Republic. In April and May they recorded significant declines in regional markets while sales in Western markets remained at about the same level as last year. It should also be noted that during the pandemic, they also managed to open new markets, the province of Manitoba in Canada and the Israeli market.

According to the management report for Kutjevo d.d., vineyard production had a share of 42.6% of total revenues in total revenues. Vineyard production in revenues includes the

production of grapes on own vineyards, the purchase of grapes from subcontractors, the processing of own grapes as well as grapes purchased from subcontractors and wine production. Wine production for 2019 amounted to 5.1 million liters. For the purposes of this paper, we will make a possible projection in which the decline in turnover in viticulture production would be 20%, and costs and expenses would remain the same.

Table 4: Profit and loss account of the company Kutjevo d.d. for the year 2019 and the projection for 2020

	2019	**POJECTION 2020**
OPERATING INCOME	330. 349. 474	305. 155. 084
Sales revenue	295. 708. 805	270. 514. 415
Other operating income	34. 640. 669	34. 640. 669
OPERATING EXPENSES	301. 599. 246	301. 599. 246
Material costs	188. 302. 985	188. 302. 985
Staff costs	67. 999. 043	67. 999. 043
Amortization	15. 497. 770	15. 497. 770
Other costs	20. 999. 623	20. 999. 623
Value adjustments	5. 793. 615	5. 793. 615
Reservations	4 .494. 346	4.494. 346
Other operating expenses	5. 189. 963	5. 189. 963
Financial revenue	1.123.560	1. 123. 560
Financial expenses	4.171.791	4. 171, 791
TOTAL INCOME	331. 473. 034	306. 278. 644
TOTAL EXPENDITURES	306. 771. 037	306. 771. 037
Profit (Loss) before tax	25. 701. 997	(492. 393)
Profit tax	5. 261.228	
Profit (Loss) after tax	20. 440.769	

Source: author's calculation according to annual financial statements

Table 4 shows Profit and loss account of the company Kutjevo d.d. for the year 2019 and the projection for 2020. The result of the projection show that the company in 2020, if there was a reduction in revenue, would operate at a loss, unlike in 2019 when it operated at a profit.

4. Research

After the projection of the impact of the decline in sales revenue on the final operating results of individual observed wineries, the expected revenue from wine sales for 2020 will be presented below. The neural network will be used for an attempt to predict sales revenues based on data on past sales revenues and the number of tourist overnight stays in particular periods. The calculation was made under the assumption that the amount of sales revenue of wineries depends on the success of the tourist season or the number of overnight stays of guests. The correlation method was used to calculate the existence of the above mentioned dependence.

4.1. Sample and methodology

Data on sales revenues of the Kutjevo d.d. company and the number of tourist overnight stays in the Republic of Croatia in the same period were used as a sample for the research. The amounts of sales revenues for individual periods are taken from the pages of the Zagreb Stock

Exchange, from quarterly, semi-annual and annual financial reports. Data on the number of tourists were taken from the Croatian Bureau of Statistics. Table 5 shows the amount of sales revenue and the number of tourist overnight stays in the period from 2009 to 2019.

Table 5: Sales revenues of the company Kutjevo d.d. and the number of tourist overnight stays (in thousands of HRK)

Period	Sample	Sales revenues	Turists
2009 I	1	60.391	1.997.763
2009 II	1	84.264	20.908.892
2009 III	1	91.699	63.659.801
2009 IV	1	86.937	4.676.475
2010 I	1	58.304	1.124.099
2010 II	1	71.151	10.677.385
2010 III	1	92.140	42.310.039
2010 IV	1	82.914	2.105.931
2011 I	1	65.643	1.017.999
2011 II	1	82.891	12.005.332
2011 III	1	97.185	44.762.148
2011 IV	1	107.952	2.324.152
2012 I	1	74.717	1.138.176
2012 II	1	88.526	12.415.494
2012 III	1	106.110	46.489.270
2012 IV	1	118.779	2.464.356
2013 I	1	65.965	1.253.985
2013 II	1	75.925	12.953.599
2013 III	1	84.550	47.739.568
2013 IV	1	99.705	2.670.197
2014 I	1	62.518	1.171.365
2014 II	1	64.464	13.712.434
2014 III	1	78.366	48.625.006
2014 IV	1	92.687	2.761.126
2015 I	1	60.746	1.393.744
2015 II	1	77.248	14.432.653
2015 III	1	84.180	52.678.697
2015 IV	1	92.838	2.932.382
2016 I	1	51.002	1.654.308
2016 II	1	71.969	14.873.251
2016 III	1	75.244	57.928.619
2016 IV	1	86.273	3.462.677
2017 I	1	71.367	1.662.073
2017 II	1	72.322	18.696.354
2017 III	1	85.096	62.018.351
2017 IV	1	86.526	3.823.483
2018 I	2	65.182	2.032.103
2018 II	2	74.153	20.123.454
2018 III	2	93.706	63.154.971

Period	Sample	Sales revenues	Turists
2018 IV	2	103.351	4.341.261
2019 I	3	70.244	1.997.763
2019 II	3	62.903	20.908.892
2019 III	3	81.623	63.659.801
2019 IV	3	80.900	4.676.475

Source: author's calculation according to EHO service and Croatian Bureau of Statistics data

Since this research seeks to prove the relationship between sales revenue and the number of tourist overnight stays, a statistical regression method was used to predict the numerical value of the output variable, which will try to predict sales revenue for 2020 based on the number of tourist arrivals in a given period. The statistical program Statistica and the neural network tool, regression type, were used for the calculation. Since the sample contains data in which each row represents a different time moment, the sample is not divided into three parts (Train, Test, Validation) in a random way, but the time order of the data is left. In the "older" periods, the network is learned, and in the "newer" periods it is tested and validated. Therefore, the first column "Sample" was introduced, which contains information on which subsample (train, test, validation) a particular row (case) will belong to. Label "1" covering the period from 2009 to 2017 specifies that this lines will belong to the training subsample. Data from 2018 were used as a subsample for testing and from 2019 as a subsample for validation.

4.2. Results

After testing a number of networks, the network with the least mean square error (MSE), which shows the average deviation of the actual from the calculated results (output) and which is shown in the column Validation error was selected for the research. The output or target variable (Continuous target) is sales revenue and the input variable (Continuous inputs) is the number of tourist overnight stays. The multilayer perceptron (MLP) algorithm was used, with min 1 and max 8 hidden neurons and 20 networks were trained with only one most accurate left. "Sum of squares" was used as the error function in prediction problems. For the activation functions of the neural network, the following were used: the tangent for the activation (transfer) function for the hidden layer and the Identity for the output layer.

Table 6: Summary of active networks

Summary of active networks (Kutjevo d.d.)											
Index	Net. name	Training perf.	Test perf.	Validation perf.	Training error	Test error	Validation error	Training algorithm	Error function	Hidden activation	Output activation
1	MLP 1-7-1	0,372444	0,643826	0,965134	9520247 8	89677 762	9026327	BFGS 41	SOS	Tanh	Identity

Source: author's calculation

The network structure is in layers "1-7-1" which means that this neural network model has 1 neuron in the input layer, 7 in the hidden layer and 1 neuron in the output layer. The program in the automatic procedure found that 7 hidden neurons are optimal. In the "Training perf." column, the network calculated a correlation coefficient of 0,372444 between the actual output and the network output on the training sample. In the "Test perf." column is the correlation coefficient between the actual output and the network output on the test sample and it is calculated as 0,643826. At the end, in the "Validation perf." column the network calculated a correlation coefficient of 0,965134 which is the correlation coefficient between

the actual output and the network output on the validation sample. The closer the correlation coefficient is to 1, the more successful the model. Validation Error "is the expected error of the model on the new data.

Table 7: Predictions spreadsheet for Sales revenues (Samples: Validation)

Case name	Predictions spreadsheet for Sales revenues (Kutjevo d.d.) Samples: Validation		
	Sales revenues Target	Sales revenues - Output 1. MLP 1-7-1	Sales revenues - Residuals 1. MLP 1-7-1
2019 I	70244,00	76857,31	-6613,31
2019 II	62903,00	62588,86	314,14
2019 III	81623,00	86419,56	-4796,56
2019 IV	80900,00	83217,12	-2317,12

Source: author's calculation

Table 7 shows the values that the model predicts on the validation data. The actual value of the output variable and the value calculated by the network are displayed, as well as in the third column of deviations or errors. These data are presented for each case in the validation sample, ie for individual quarters in 2019, which was used as a year for the validation sample. Table shows that in the first quarter the real value of sales revenue is 70244,00 HRK while the network forecasts 76857,31 HRK which means that the calculated error is -6613,31 HRK. In other quarters, the errors are quite smaller and they amount to 314,14 HRK for second quarter, -4796,56 HRK for third quarter and -2317,12 HRK for fourth quarter.

Table 8: Predictions spreadsheet for Sales revenues (Samples: Validation)

Networks	Sensitivity analysis (Kutjevo d.d.) Samples: Validation
	Turists
1.MLP 1-7-1	3,934121

Source: author's calculation

Table 8 shows the Global Sensitivity Analysis which is the sensitivity analysis of the output variable to the input variable. The coefficient of sensitivity of sales revenue to the number of tourists is 3,934121.

Table 9: Custom predictions spreadsheet

Cases	Custom predictions spreadsheet (Kutjevo d.d.)	
	1.Sales revenues_(t)	Turists
1	75110,30	1444872
2	81506,08	3789722
3	61797,38	34489369
4	73846,72	1070492

Source: author's calculation

Table 9 shows the use of the network on new data, ie on data on the number of tourist overnight stays in 2020. Using the neural network model, the amount of sales revenue in individual quarters of the observed year is predicted based on the available data on the number of tourist nights in 2020. The actual amount of sales revenue for Kutjevo by individual quarters, which can be found in the financial statements on the Zagreb Stock Exchange website, will be shown below.

Table 10: Comparison of projected and actual amounts of sales revenue

	Real data	Predicted data	Distinction
2020 I	69749,00	75110,30	7,68%
2020 II	62759,00	81506,08	29,87%
2020 III	77421,00	61797,38	-20,18%
2020 IV	84999,00	73846,72	-13,12%

Source: author's calculation

As can be seen from the comparison of projected with the actual amounts of sales revenue, there are significant discrepancies in this comparison. The smallest difference can be seen in the first quarter and it is 7,68% and the largest in the second quarter and it is 29,87%. From the above we can conclude that the planning of sales revenue can not rely on the calculation of the neural network model made on the basis of the assumption of the dependence of the variable sales revenue on the variable number of tourist arrivals. In other words, the amount of sales revenue does not depend exclusively on the number of tourist arrivals, but is also influenced by other factors.

5. Conclusion

For the purposes of this paper, the annual financial reports for 2019 that have been made public have been taken into analysis, and for 2020 a projection of the author has been made with the assumption of a 20% reduction in revenue in the viticulture sector due to COVID 19. The financial statements for 2020 at the time of writing this paper have not yet been made public, so a projection of revenue reduction in 2020 has been made. This analysis and research gives us some guidelines for a possible scenario that occurs in wine and grape production due to the decline of the tourist season and the reduction in the number of tourist guests in 2020 from 19,534,674 in 2019 to 6,991,128 in the year 2020 or a decrease of 64.22% compared to 2019. This reduction in the number of guests also affected the demand and consumption of wine and grapes from domestic producers from Slavonia. We do not yet know exactly what consequences the COVID 19 pandemic will have at this time, but we know for sure that the viticulture and wine production sector in the Republic of Croatia, which is already shaken by enormous and uncontrolled imports of wine from other countries, will have liquidity problems and difficulties.

By analyzing the financial statements for 2019 for the three largest wineries in Slavonia, *Kutjevo d.d., Ilok cellars d.d. and Belje plus L.t.d,* we can conclude that all three wineries achieved a positive financial result for 2019. Comparing the analyzed financial data, we see that the least problems due to the decline in revenues from wine sales have the company BELJE PLUS L.t.d., which, in our projection of reduced revenues in the wine sales sector by 20% still achieves a positive financial result. The positive financial result of the company Belje plus d.o.o. is caused mainly by the fact that wine production is not the dominant activity of Belje plus L.t.d. Kutjevo d.d. would operate with minimal loss that could easily be solved by minimal cost reduction. Good financial result in Kutjevo d.d. is certainly the result of the increasingly export-oriented sale of wine. The biggest problem in business would be the Ilok cellars d.d., which according to this analysis would have to significantly reduce expenses and costs in order to achieve a positive result. It should be emphasized that this analysis and reduction of revenues was done on the basis of expenditures from the previous year, which rarely happens in practice. Expenditures and expenses are tied to revenues and any reduction in revenue should also result in a reduction in costs. The research done in this paper is just a

guide in which direction production planning in the viticulture sector should move if the pandemic continues in 2021. After using the regression method and creating a neural network to predict the amount of sales revenue, it can be concluded that the crisis caused by the COVID 19 virus certainly affected the business of wineries, but we can not directly link sales revenue with the number of tourist arrivals. At the time of writing this paper, financial data for 2020 for Belje plus L.t.d. and Ilok cellars d.d. have not been published and the statistical method of regression was used to show the impact of tourist overnight stays on sales revenue only on the example of the winery Kutjevo d.d. After the publication of the financial statements for 2020 and in order to examine the impact of tourist overnight stays on sales revenues for both Belje plus L.t.d. and Ilok cellars d.d., future research should include the remaining two wineries to compare the results with those obtained on the example of Kutjevo d.d. Besides that, since the results of the research so far prove that the number of tourist nights does not significantly affect the financial result of wineries, the question of the factors that affect the level of sales revenue and the final financial result remains open.

Domestic wine production is constantly decreasing and the area of vineyards in Croatia is constantly decreasing. Future wine production should be more export-oriented due to the uncertainty that comes from dependence on tourism and consumption through tourism. The decline in consumption of domestic wine producers in tourist destinations at coast is also caused by increased wine imports, which are increasing after Croatia's accession to the European Union. In the end, we can say that Croatia has very favorable climatic and environmental conditions for wine production, but that the current production and organization of consumption is far from historic. Today's 20,000 ha of vineyards compared to 170,000 ha of 19th century vineyards certainly provide space for new vineyards. The current production of grapes and wine, which is far below the possible capacities, must be given a boost in the state strategy for the use of comparative resources. Croatia is still an ecologically preserved country and this gives us a great advantage over ecologically polluted countries. Croatian wine production must rely on the ecological component and the national strategy must emphasize organic production without the use of pesticides and fertilizers. The analysis of wine production in Croatia in the 19th century and the beginning of the 20th century shows that the largest part of production was exports to other countries, mostly to Austria and Germany and at one time to France. The production of grapes and wine in the region of Slavonia with good state support and a good strategy aimed at export and organic production that will be recognized in the tourist offer as a Croatian product certainly has a long-term perspective and sustainability.

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DEMOGRAPHIC CHARACTERISTICS OF EMPLOYEES IN WORKPLACES WITH ATYPICAL WORK ORGANIZATION AND NON-STANDARD WORKING HOURS IN CROATIA

ABSTRACT

The need to create new jobs to respond to growing demand in the context of global economic development is changing the world of work. The labor market is increasingly characterized by flexible, atypical forms of labor organization. In the context of conventional definitions of standard workplace and working time, established in the work practice of the 20th century, we analyze forms of work that can still be considered atypical organization of work given its representation in the total employed population. Much emphasis in previous research on the organization of work and working time has been placed on social acceptability from the perspective of the organization of work and private (family) life. Research on this issue in Croatia is scarce and this paper is therefore of an exploratory nature. The research is based on the Labor Force Survey at the individual level (microdata). Data from the Labor Force Survey allow us to research some of the forms of work and working hours, primarily weekend work, night work and work from home. The aim of this paper is to explore the demographic characteristics of respondents who participate in any of these work schemes and schedules. The main findings of the paper are: Employees who always work on Sundays are dominated by workers over the age of 40, with a relatively higher proportion of women; part-time work in Croatia is poorly represented among employees; the presence of part time work among employees is the result of a lack of full time jobs rather than the flexibility of employers; significantly higher prevalence of night work in men, which increases with age. The paper indicated some characteristics of the labor market that would be useful to include in the development strategies of economic and family policy in Croatia.

Keywords: *demography, atypical work, non-standard work schedule, labor force survey.*

1. Introduction

In recent decades, there have been many factors that have influenced changes in the labor market. Factors that have strongly influenced the labor market are demographic changes, labor market regulations, macroeconomic fluctuations, and technological change. The impact of demographic processes on the volume and quality of the workforce is well known in Croatia (Akrap et al., 2018; Gelo et al., 2005, 2011; Strmota, 2017; Wertheimer-Baletić, 2004). Due to continuous decline in birth rates and emigration, the working-age population is rapidly shrinking in Croatia in the last decades. A big problem is the emigration of skilled labor, which

leads to a shortage of workers in the labor market. These are just some of the factors that encourage further destandardization of the employment organization of the labor market.

In scholar literature non-standard working hours refer to time spent at workplace outside the traditional working week from Monday to Friday. This includes working on Saturdays, Sundays and working at night. Shift work, part-time work and work from home is also considered an atypical work organization. Yet there is a difference in the challenges, advantages and disadvantages that come with working weekends on the one hand and working nights, working in shifts and part-time, on the other hand. While working weekends directly deprives time for family and socializing outside the workplace, working at night, working shifts and part-time work can increase time for private life. Working from home can also improve the reconciliation of the family and business life. But it's not that simple. Apart from the social ones, there are other challenges facing workers in atypical work.

2. Literature review

Workers' health and safety has long been linked to atypical schedules and many studies have focused on this issue (Martin et al., 2011; Presser et al., 2008; Wirtz et al., 2011). Very often, health problems arising from working at night or in shifts are highlighted. Research shows that such a work schedule is associated with higher health risks due to changes in an individual's circadian rhythms. These changes are associated with such biological functions as body temperature, hormone levels, and sleep. As a result, workers in the late hours are at greater risk of developing gastrointestinal disorders, cardiovascular disease, breast cancer, miscarriage, premature birth, and low birth weight of their newborns (Bonzini et al., 2007; Grzywacz, 2016; Presser et al., 2008; Spurgeon et al., 1997; Wirtz & Nachreiner, 2010).

Non-standard working hours are also called unsocial hours (Anttila et al., 2005; Bittman, 2005; Evans et al., 2001; ILO, 2016). The idea behind this term is that there are some periods of day or week when other people are available to us for a social contact (family in the first place), and if workers are expected to be in their jobs at that time, social contact becomes very difficult. When we talk about the social consequences, the most common research focus is on the reconciliation of work and family life among workers who work on weekends. Reducing the standardization of working time makes reconciling private and business life increasingly difficult, if not impossible. Unsocial working hours is associated with less time in family roles, difficult reconciliation of the business and family life, and generally lower levels of family adjustment (Craig & Powell, 2011; Ruppanner & Treas, 2015; Staines & Pleck, 1984; Wirtz & Nachreiner, 2010).

When it comes to non-standard working hours, the first association in Croatia is working on Sundays. The topic of work on Sundays in Croatia has appeared extensively in the media several times in the last 30 years. Unfortunately, the topic was very rarely given professional attention. It was mainly approached as a political topic in the negative context of the conflict between religious and business views on the labor market. Retail chains showed a special negativity towards the topic of work on Sundays.

Part-time work is considered necessary and useful in many countries. Such working hours allow excluded groups to participate or stay in paid work. The benefits of part-time jobs are most often attributed to workers with family responsibilities, students, and older workers. Particular attention is paid to part-time work in the context of parenting and reconciling family and business life. Experts point out the benefits of such working hours during periods of employee life when they have young children (Akrap, 2011; Beham et al., 2019; Blossfeld & Hakim, 2000; Esping-Andersen & Regini, 2000; Higgins et al., 2000; Lyonette, 2015).

Work from home is never given more attention due to the global COVID-19 pandemic. Today with the use of modern telecommunication and software technologies, it has become possible to perform certain types of work outside the traditional place of work. Interest in teleworking is growing among workers, employers, policy makers, educational institutions, software companies and this interest is likely to be even greater. There are several reasons for such great interest. Teleworking gives workers greater responsibilities in terms of developing their own careers; checking the contribution of the worker based on his work results; increase job satisfaction; ensuring a better work-life balance; ensuring higher quality of service for clients; improving the image of the company; increase productivity; savings on office space and infrastructure in a standard workplace, place, etc. There are also downsides. People who work from home usually lack a time structure, clear boundaries between work and leisure, physical activity, and social contacts. As a result, working from home can be tedious. All the above opens a lot of space for researching this kind of work.

The comparison of nonstandard work schemes and schedules among European countries is partly methodologically limited[1]. Yet some data are comparable to European labor market surveys. This paper provides insight into the basic demographic characteristics of non-standard work.

3. Data and methods

This paper is based on data from the 2018 Labor Force Survey. The dynamics of the survey in 2018 is as follows: households are surveyed in two consecutive quarters, omitted from the sample in the next two quarters and re-surveyed in two more consecutive quarters. Such a panel model used in Croatia is called 2- (2) -2. This enables time monitoring of labor market flows, in quarterly and annual dynamics. Members of private households living permanently in these housing units are surveyed. To avoid duplication of data from the same households for 2018, panel data obtained from the second survey were excluded.

The EU-LFS collects data on "number of hours usually worked per week" and "number of hours actually worked during the reference week". The number of hours usually worked per week comprises all hours including extra hours, either paid or unpaid, which the person normally works, but excludes the travelling time between home and workplace and the time taken for the main meal break (usually at lunchtime) are excluded. The number of hours worked during the reference week covers all hours including extra hours regardless of whether they were paid or not (*Eurostat*, 2018).

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[1] The comparison of atypical working hours between Croatia and other European countries is partly methodologically limited. In the Croatian questionnaire of the Labor Force Survey (2018), a question was asked under the characteristics of the main job: "*Do you work on Sundays / Saturdays / nights / in shifts / at home*?" The answers offered are *always / occasionally / never*. In a questionnaire from Germany, for example, the question was asked: *Have you worked on at least one Sunday in the last 4 weeks*? The answers offered are: *Yes - on every Sunday / on at least two Sundays / on one Sunday*, and negative response- *No*. Respondents in Croatia arbitrarily determine the term "always" or "occasionally" working in some form of non-standard work schedule.

4. Analysis and findings

To begin with, it is necessary to detect occupations in which a non-standard work schedule appears. The representation of a particular category of non-standard work is shown below (Fig. 1), using the data from the sample Labor Force Survey for 2018. Employees are categorized according to the National Classification of Activities 2007 [2].

Figure 1: Proportion of employees who work on Sundays always or occasionally in 2018, by NKD

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Sundays	72,1	50,0	21,9	29,0	20,4	15,2	41,0	49,8	84,1	30,6	7,1	26,9	15,3	44,1	38,9	3,1	56,1	63,9	21,9
Saturdays	92,9	62,5	69,6	37,1	54,9	72,8	81,1	70,3	93,7	45,4	44,0	57,7	42,5	67,7	45,1	13,1	70,0	78,2	78,8
Night	21,6	29,2	24,3	22,6	13,4	7,9	5,5	43,2	21,2	14,8	1,8	3,8	6,9	28,5	33,2	1,5	43,5	22,6	10,3
Shifts	13,4	37,5	41,9	25,8	19,7	13,1	51,0	48,1	65,6	19,1	28,6	11,5	16,1	38,7	31,8	3,8	58,1	40,6	50,7
Telework	0,2	8,3	3,7	1,6	2,1	4,3	4,3	2,1	3,8	24,0	7,1	11,5	24,1	5,9	3,5	14,2	7,6	6,0	12,3
Part-time	34,3	0,0	1,7	0,0	3,5	4,7	4,3	1,9	5,9	7,1	3,0	7,7	8,4	9,1	1,2	9,3	2,3	15,0	11,0

National Classification Activities: A- Agriculture, forestry and fishing; B- Mining; C- Manufacturing; D-Electricity, gas, steam and air conditioning supply; E- Water supply; waste management; F – Construction; G-Wholesale and retail trade; H- Transport and storage; I - providing accommodation; food preparation and serving; J - Information and communication; K- Financial and insurance activities; L- Real estate; M-Professional, scientific and technical activities; N- Administrative and support service activities; O- public administration and defense; social security; P- Education; Q- Health and social work activities; R- Arts, entertainment and recreation; S- Other service activities.
Source: LFS 2018. microdata.

Figure 1 shows a higher frequency of work on Saturdays than on Sundays. According to occupations, work on Sundays is more frequent (over 50% of employees) in the sectors of agriculture, trade, accommodation, catering, health, art and entertaiment. The difference between the sectors in the type and organization of work certainly exists but this is not the topic of this paper. Night work is significantly present in the transport and storage sector. Also night work is a characteristic of the healthcare workers.

The occurrence of shift work is more frequent, so it is easier to single out those sectors in which such work practices are rare.

As expected, work from home in a significant share occurs in 3 sectors- information and communication; professional, scientific and technical activities, and education.

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[2] NKD 2007. https://www.dzs.hr/App/NKD_Browser/assets/docs/NKD_2007_objasnjenja.pdf

Part-time work in Croatia is poorly represented among employees, regardless of the sector in which they work.

In this part of the paper, we present the basic demographic characteristics of respondents by individual type of non-standard work.

4.1. Sunday work

Figure 2: Employed persons working on Sundays as a percentage of the total employment, by age
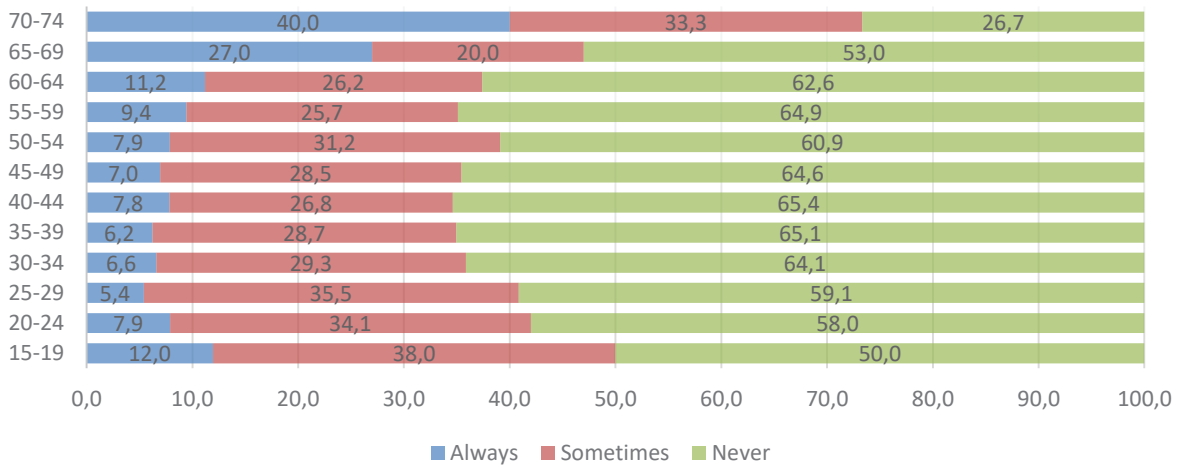
Source: LFS, 2018. Microdata; Authors's calculation

Figure 2 shows the distribution of employees by age groups, with regard to weekend work. The question asked in the survey is: do you work on Sundays? Offered answers are given: always, sometimes, never. From the above data, we can see that work on Sundays is more common among younger and older workers. Such a result can probably be attributed to the part-time work of the elderly (pensioners) and young people (students) who are additionally engaged in certain jobs. Employment through student service has long been recognized in the Croatian labor market.

Figure 3: Age-gender structure of employed Sunday workers in 2018, response-"<u>always</u>", LFS HR sample
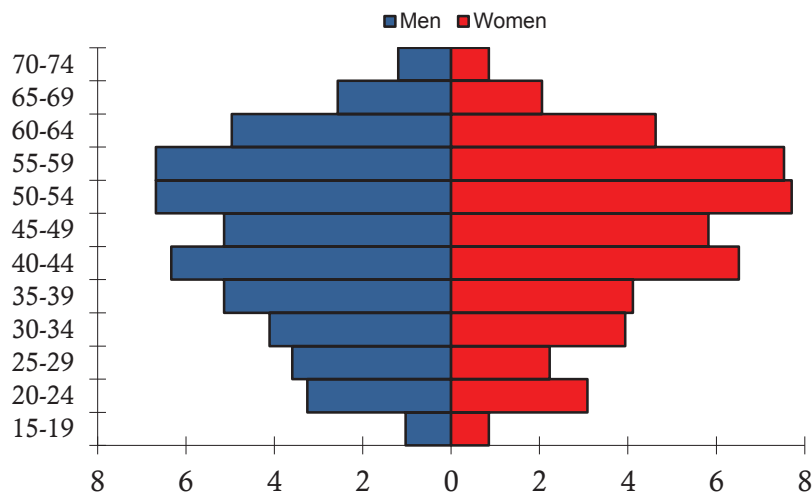
Source: LFS, 2018. Microdata

Employees who always work on Sundays are dominated by workers over the age of 40, with a relatively higher proportion of women (excluded are those who answered this question with "sometimes") (Fig.3). Certainly, this higher share of women can be explained by the higher share of women in service activities in which weekend work dominates. Eg. from the survey it can be seen that in the jobs of providing accommodation, preparing and serving food 84% of employees work on Sundays always and sometimes.

Figure 4: Marital status of employed Sunday workers in 2018, response-"<u>always</u>" LFS HR sample
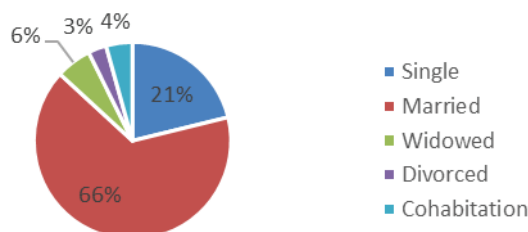
Source: LFS, 2018. Microdata; Authors's calculation

Figure 4 shows the distribution of employees who always work on Sundays according to marital status. Two-thirds of Sunday employees are married. The representation of marital status is the same in the total sample, so there are no significant deviations. Nevertheless, marital status and presence in the workplace should be taken into account as a basis for improving the work-life balance of workers. This is a topic that is much discussed in the context of declining fertility in Europe.

4.2. Saturday work

Figure 5: Employed persons working on Saturdays as a percentage of the total employment, by age
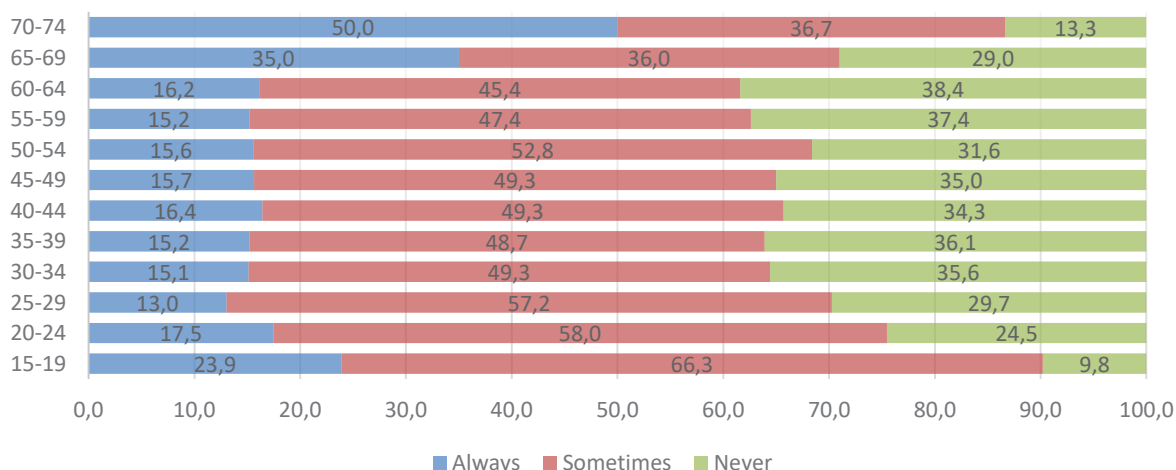
Source: LFS, 2018. Microdata; Authors's calculation

As expected, working on Saturdays is more present working hours than on Sundays. While on average two thirds of workers do not work on Sundays, only one third of workers are deprived of work on Saturdays. Similar to working on Sundays, the distribution of Saturday employees by age shows a slightly higher incidence of such working hours among younger and older employees (Fig. 5).

Figure 6: Age-gender structure of employed Saturday workers in 2018, response-"<u>always</u>" , LFS HR sample
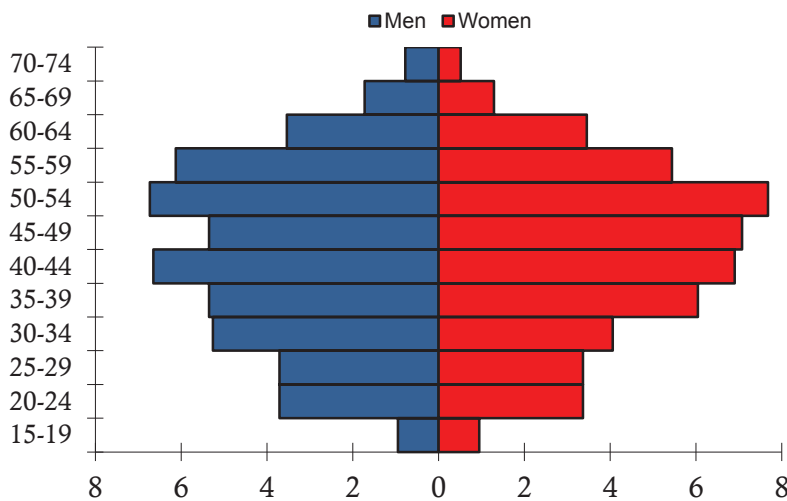
Source: LFS, 2018. Microdata

Compared to Sunday workers, Saturday workers are more likely to be middle-aged and the sex distribution is somewhat more even. However, a higher representation of weekend work among women is also visible in this sample of responses.

Figure 7: Marital status of employed Saturday workers in 2018, response-"<u>always</u>" LFS HR sample
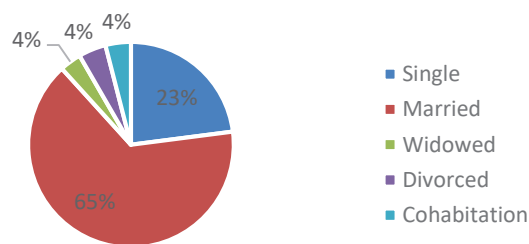
Source: LFS, 2018. Microdata; Authors's calculation

The distribution of Saturday employees according to marital status does not show significant differences from the same distribution of the total sample (Fig.7). In fact, working on Saturdays does not show any significant socio-demographic characteristics of the workforce that would make that work specific.

The representation of women in atypical working hours, which is best reflected in weekend work, is deliberately highlighted in this and similar works. Traditionally, a larger share of women is in service industries, and it is this sector that most often operates on weekends. Social

policy experts, as well as demographers, agree on proving the figure of an overworked working mother in the labor market, which is ultimately reflected in a decline in fertility (Blossfeld & Hakim, 2000; Esping-Andersen & Regini, 2000; Higgins et al., 2000; Bonzini et al, 2007; Akrap, 2011; Lyonette, 2015; Beham et al., 2019).

4.3. Night work[3]

Figure 8: Employed persons working night shifts as a percentage of the total employment, by age
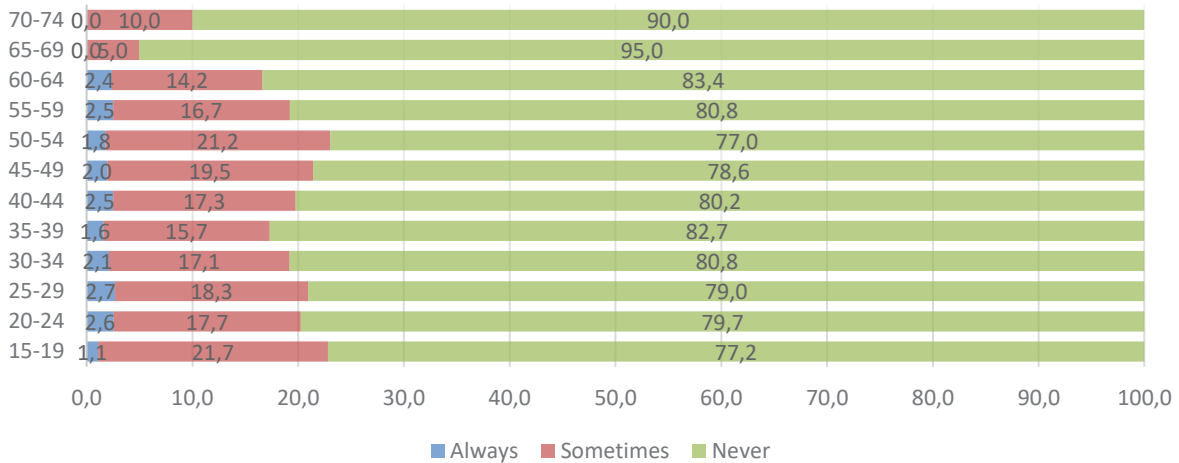
Source: LFS, 2018. Microdata; Authors's calculation

Figure 9: Age-gender structure of employed night workers in 2018, response-"<u>always and sometimes</u>" , LFS HR sample
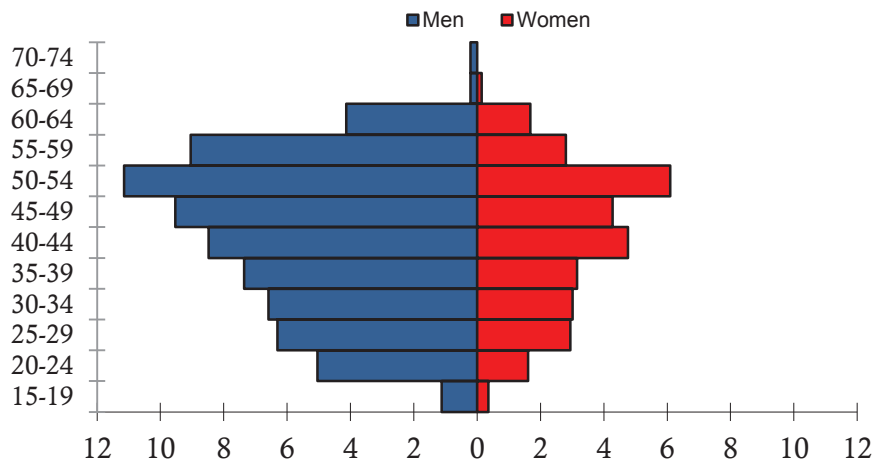
Source: LFS, 2018. Microdata

The presence of night work as an atypical working time is significantly lower than weekend work (Fig. 8&9). According to the total sample of employees most workers never work at night

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[3] LFS Methodology- Evening and night work: Since the definitions of evening and night differ widely, it is not easy to establish a strictly uniform basis for all Member States. In general, however, 'evening work' is considered to be work done after usual working hours but before the usual hours of sleep in the Member State concerned. It implies the opportunity to sleep at normal times. 'Night work' is generally be regarded as work done during usual sleeping hours and implies abnormal sleeping times. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_-_methodology)

(80%), and others only occasionally. Looking at the structure by age and gender, the dominance of male work in night work is very clear, and it rises relatively with age. As expected, the oldest age groups 65+ are not employed in night work (part-time workers). This type of non-standard work is represented in manufacturing, transportation and storage and healthcare.

Figure 10: Marital status of employed night workers in 2018, response-"always" LFS HR
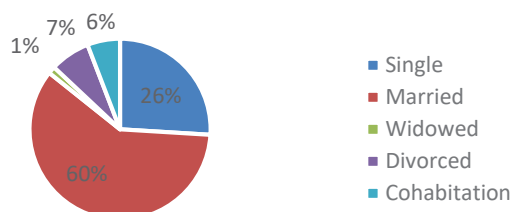
Source: LFS, 2018. Microdata; Authors's calculation

The distribution according to marital status is somewhat higher in favor of singles compared to previous forms of work. However, it does not show a significant pattern of favoring a certain group of night workers according to marital status.

4.4. Work from home[4]

Figure 11: Employed persons working from home as a percentage of the total employment, by age
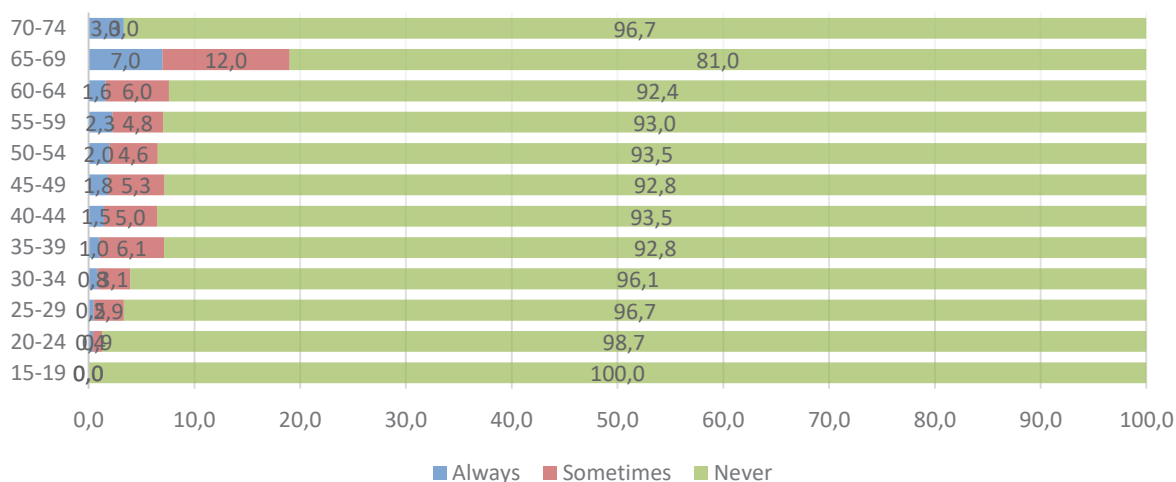
Source: LFS, 2018. Microdata; Authors's calculation

The Labor Force Survey conducted in Croatia in 2018 shows that 94% of respondents did not work from home. 4.5% of them did their work from home "sometimes", and only 1.5% usually

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[4] LFS Methodology- In the case of employees, work at home is interpreted exclusively as a formal agreement with the employer, i.e., when there is an agreement between the employee and the employer that some part of the work is done at home. Such an agreement may or may not be explicitly stated in the employee's employment contract and may be recognized with some special provisions, e.g., when the employee has an explicit obligation to inform the employer about his work at home; when there is a special procedure for claiming compensation for work at home, etc. There is also the possibility that the employer hands over to the employee to use a computer that he will use at home to perform work for compensation. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_-_methodology)

spent working hours at home. Traditionally, these are occupations in the information and communication sector as well as professional, scientific and technical activities. The distribution of this type of work according to the age groups of employees does not show significant differences between them (Fig. 11).

Figure 12: Age-gender structure of employed teleworkers in 2018, response-"<u>always and sometimes</u>", LFS HR sample
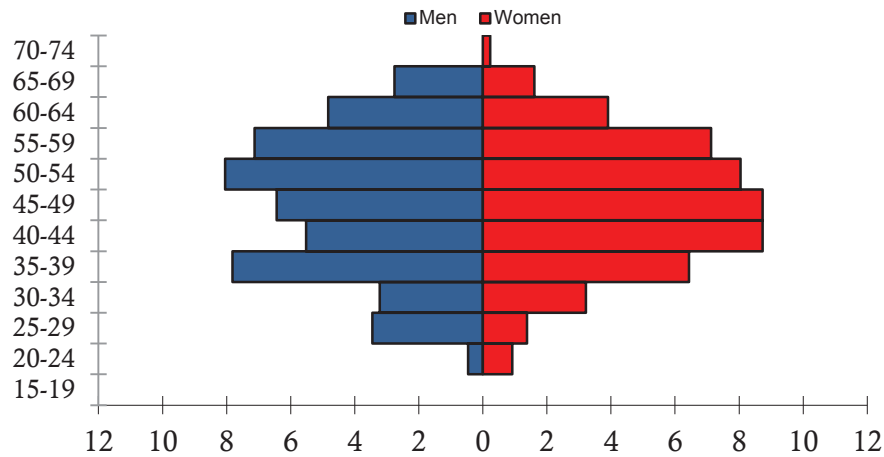
Source: LFS, 2018. Microdata

The age-sex pyramid of employees who have the opportunity to work from home shows that men are more represented at a younger age, while women make up a larger share of the 40-60 contingent (Fig. 12). Such a pattern could be a direction that would interest working parents, especially mothers. A large number of papers highlight the importance of understanding employers for the family life of their employees. The possibility of easier organization of work obligations greatly facilitates the reconciliation of family and private obligations. Working from home is already possible in many branches of employment thanks to the development of technology.

4.5. Part-time work[5]

Figure 13: Employed persons working part-time as a percentage of the total employment, by age
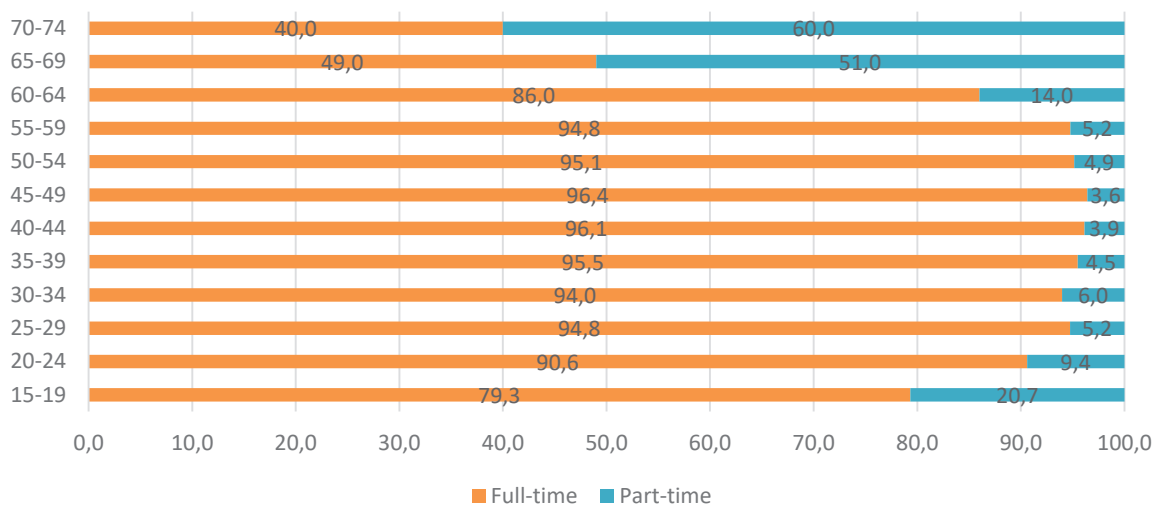
Source: LFS, 2018. Microdata; Authors's calculation

In the case of part-time work, a higher prevalence is noticeable among older and young workers, as well as in the case of working on Sundays (Fig. 13). We could say that this form of work is very poorly recognized, although it is often highlighted as a type of work organization that would be beneficial to parents of minor children.

Figure 14: Age-gender structure of employed part-time workers in 2018, LFS HR sample
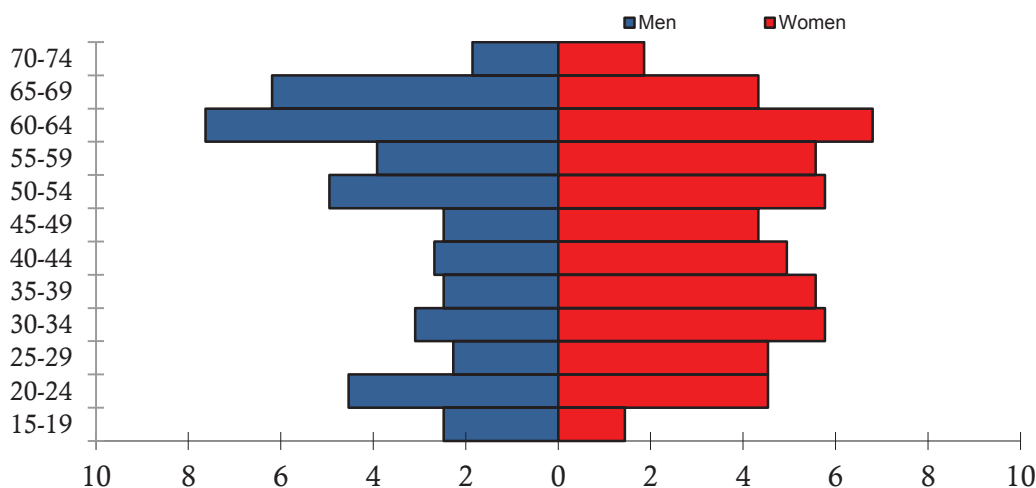
Source: LFS, 2018. Microdata

But even this relatively small share of part-time employees shows that such a form is more favored by women (Fig. 14).

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[5] LFS Methodology- The distinction between full-time and part-time work should be made by the interviewer based on the spontaneous response given by the respondent because it is sometimes impossible to draw a clear line between part-time and full-time work. Full-time work is considered to be 36 hours per week and longer.

Figure 15: Reasons of part-time work as a percentage of total part-time workers in 2018, LFS-HR
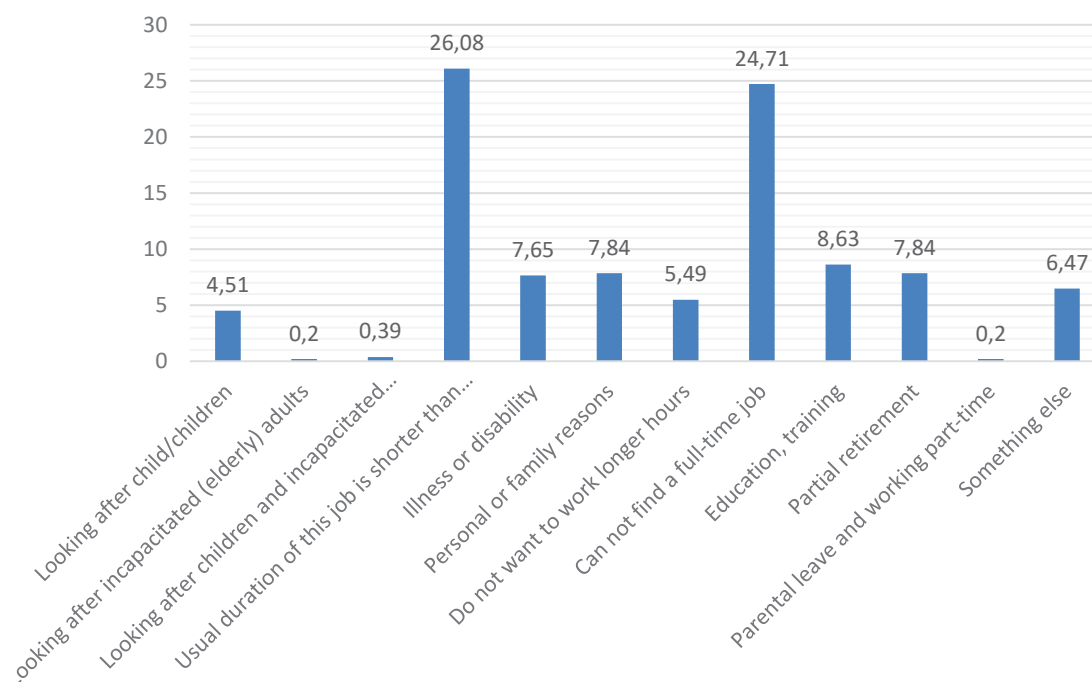
Source: LFS, 2018. Microdata; Authors's calculation

The main reason for working part-time is actually unrelated to personal preferences but is more characteristic of the jobs offer in Croatia. A quarter of part-time employees report not being able to find a full-time job (in the EU-LFS statistics, it is also called "involuntary part-time employment"). We can state that the presence of part time work among employees is the result of a lack of full time jobs rather than the flexibility of employers. Another quarter of employees state that the nature of the job does not require full-time work (Fig. 15). This is another proof of the inflexibility of jobs and employers in adjusting working hours to employees. Croatia has a low prevalence of part-time jobs.

5. Conclusion

The descriptive analysis of the microdata of the Croatian Labor Force Survey showed the demographic characteristics of employees that could be taken into account when regulating economic and family policy in Croatia. Research into non-standard forms of employment is important in many ways. Today, in modern European society, the dual-earner family model has become dominant model, so the quality and organization of the workplace has a strong impact on the quality of private life. Different forms of employment and workplace organization will further destandardize the traditional work week and the 40-hour work week. This does not necessarily mean a worsening of working conditions for employees if a responsible family policy is developed in parallel. Employers have a very important role in creating a modern and responsible family policy. In cooperation with state authorities, there is room for achieving common goals in the interest of productive business, but also for raising the quality of work and satisfaction among workers. Basic guidelines for reconciling work and private life already exist in the form of a directive of the European Parliament and the Council (2019/1158). In the field of non-standard forms of work, guidelines on flexible forms of work have been issued (Article 9).

Given that the main role in such recommendations is played by employers, the involvement of national governments in creating conditions for the convergence of the interests of private capital and the interests of employees is crucial. The coronavirus pandemic, in addition to major setbacks and challenges, has also created an opportunity to modernize forms of work for the benefit of employers and employees. There is an opportunity to raise productivity by freeing part of the week from being at work and traveling to and from work. Part of that free time should certainly be used in strengthening the family friendly environment. An aging Europe needs some form of labor market transformation and adaptation that would be a symbiosis of sustainable family and economic policies.

This paper also shows how the conditions on the Croatian labor market occur spontaneously and by inertia, and not planned and strategically in order to adapt to the challenges posed by the demographic processes of aging and declining fertility.

There are limitations of this kind of descriptive anaylsis. For the purposes of instrumentalization of family policy measures, it is necessary to further investigate the target groups of employees. Also, for the purpose of more accurate and high-quality research work, it is necessary to further investigate the sampling, methodology and field testing of the Labor Force Survey in Croatia.

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CHALLENGES OF CONTINENTAL TOURISM ENTREPRENEURSHIP DEVELOPMENT AFTER THE CORONAVIRUS PANDEMIC

ABSTRACT

The global economy has proven to be extremely vulnerable to unforeseen situations that are not directly related to it, such as the coronavirus pandemic that has surprised and stopped the whole world. Undoubtedly, tourism is the most affected global economic activity. Through history, tourism has faced countless types of crises, most often resulting in a significant drop in tourist demand. This time is no different, primarily because of its importance for the global economy, and it has not left any country indifferent, especially receptive countries like Croatia, which are highly dependent on it. With the discovery of the vaccines and creating collective immunity, tourism will certainly recover, but it can be assumed that it will be significantly different, primarily by increasing public awareness of concern for safety, health and the environment.
Croatian tourism is characterized by high seasonality on the coast, when the maximum capacity utilization is reached, and on the other hand low representation in the continental part. Certainly, in the challenging times that are coming, continental Croatia has considerable potential by creating new tourist products and offer. Surely, one of the advantages is a personalized approach in which the tourist is in direct contact with the host and thus, in a more intimate atmosphere, receives a service that meets their personal wishes and needs.
The aim of this paper is to analyze the most important indicators of the current development of tourism in continental Croatia and to assess the future directions of tourism development after the pandemic. In aiming to achieve the objectives set out in this paper, a survey will be conducted among health and tourism experts on stopping the pandemic and potential new directions of tourism development in continental Croatia. The research will use general scientific methods (methods of analysis, synthesis, comparisons, etc.) and the method of descriptive statistics. The expected scientific contribution of this paper can be seen through the parameters of the new concept of continental tourism development in Croatia.

Keywords: tourism, continetal Croatia, pandemic, new directions of development.

1. Introduction

The subject of this paper is to present current tourism development in Eastern Croatia and to explore the new concept of sustainable development after the coronavirus pandemic As the corona crisis has abruptly halted most economic activities, including tourism, a number of questions arise about how and for how long it will take for the world economy to recover. The corona crisis has resulted in a significant drop in tourist demand in most receptive tourist countries, including Croatia. Despite optimistic forecasts for last year's season, some activities accounted for less than 50% of last year's turnover. It is certain that the tourist offer in the future will have to adapt to new trends in demand in the tourist market. This will stop the extensive expansion of accommodation capacities on the coast, and the tourist offer will need to be adjusted to the new tourist demand, which opens new opportunities for the development of continental tourism, which has so far been neglected in relation to sea tourism.

The aim of this paper is to investigate the impact of the coronavirus pandemic on the development of continental tourism in the Republic of Croatia and to show the future directions of its development.

The hypothesis of this paper is that after the corona crisis in Croatian continental tourism, new opportunities for sustainable development are opening up.

2. Development of Continental Tourism

Since the establishment of the independent Republic of Croatia, several plans and strategies for the development of tourism have been adopted. Despite this, there are opinions that tourism has developed disorganized, below its real possibilities, without a clear plan and program. Namely, it is characterized by a distinct seasonality, which is not only conditioned by climatic factors, but also the structure of accommodation capacities has a significant impact, which is mostly located in the coastal area (according to Eurostat data for 2014, as much as 95% of accommodation capacities), public holidays, as well as vacations (EIZ, 2019; 7). In addition to the above, most of the current tourism strategies have been focused on the development of seaside leisure on the coast, which makes Croatia recognizable in the international tourism market as a country for summer vacation with a dominant product of sun and sea. Precisely because of the focus on seaside leisure in the coastal area, natural and social resources that the continental part of Croatia abounds in are touristically insufficiently valorized, although there are all prerequisites for its development to compete with tourism on the coast, which would contribute to tourism development throughout the whole country.

Continental tourism covers an area of 14 counties, mostly rural areas, which make up almost 92% of the land area of Croatia, where about 47% of the population lives (DZS, 2011). It can be seen that most areas of continental Croatia are rural and that being so represent attractive places for rest, relaxation, proper nutrition and more active life, but as well for the development of rural tourism. Despite all the predispositions, rural areas lag significantly behind urban development and face worrying trends of deagrarization and depopulation (Batoluci, Petračić, 2020; 176).

Although the beginnings of rural tourism in our area date back to the past, this form of tourism began to develop operationally and in an organized manner only in 1996, the year after the adoption of the Rulebook on the provision of catering services to rural households, which created a legal framework for regulating this type of tourism (Galijan, Selić, Zelenika, 2017; 17). The development of rural tourism in Continental Croatia so far has been largely left to the individual entrepreneurial initiative and scarce sources of funding, so a heterogeneous and fragmented rural tourism offer has developed spontaneously, based on different types and

specific forms of tourism. Thus, hunting, enogastronomic, religious and other forms of tourism began to develop in this part of Croatia.

Continental tourism has been neglected for years in relation to the destinations of coastal Croatia. On the other hand, there is a high seasonality of Croatian tourism and a direct dependence of the Croatian economy on the tourist season (June, July and August). Recently, especially during the pandemic, this trend is slowly changing and more and more tourists are showing interest in tourist activities in Continental Croatia, far from the destinations of mass tourism that prevail on the Croatian coast.

Only a few years ago, the Croatian Chamber of Commerce, in cooperation with the Ministry of Tourism, published the first national catalog of rural tourism in the Republic of Croatia. It is important to point out that until then there was no publicly available list of the most important providers of rural tourism, but even without it is clear that in certain areas, it is widespread and its offer is at a higher level, while on the other hand there are parts of Croatia where rural tourism completely undeveloped.

Figure 1: Spatial distribution of rural tourism service providers
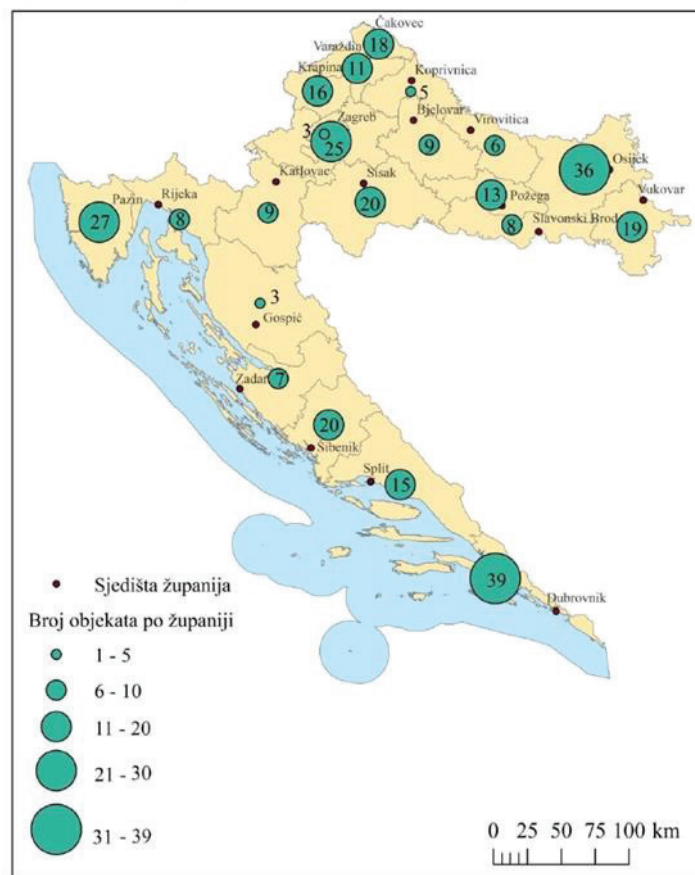
Source: Galijan V. Selić H., Zelenika Z. (2017) Analiza prostorne distribucije i ponude ruralnog turizma u Republici Hrvatskoj

Figure 1 shows that the largest number of rural tourism service providers is located in the Dubrovačko-neretvanska county, followed by the Osječko-baranjska county. The Osječko-baranjska county is the most developed out of the five that stretch across Eastern Croatia. Eastern Croatia includes the five easternmost Croatian counties, the already mentioned Osječko-baranjska, Virovitičko-podravska, Požeško-slavonska, Brodsko-posavska and Vukovarsko-srijemska county, which include the historical-geographical regions of Slavonia,

southern Baranja and western Srijem. It covers more than 14,000 km2, which represents more than a fifth of the Croatian land area. According to synthetic indicators of regional development, GDP per capita and composite development index, Eastern Croatia is the least developed macro-region. Its lag is due to the interdependent influence of several factors: the consequences of the Domovinski War, the poorly implemented privatization process in the transition period, the negative trend of economic and social restructuring, etc. Although Adriatic Croatia is the most important Croatian tourist region in terms of arrivals and overnight stays, continental Croatia has begun to make significant progress.

Table 1: Number of beds and tourist arrivals and overnight stays in 2019

	Beds		Total		Domestic		International	
	Permanent	Additional	Arrivals	Overnight stays	Arrivals	Overnight stays	Arrivals	Overnight stays
Total Croatia	1 160 067	198 368	19 566 146	91 242 931	2 212 658	7 095 300	17 353 488	84 147 631
Coastal Croatia	1 082 373	193 345	16 924 064	86 277 706	1 518 166	5 681 330	15 405 898	80 596 376
Continental Croatia	77 694	5 023	2 642 082	4 965 225	694 492	1 413 973	1 947 590	3 551 255
Eastern Croatia	8 689	503	261 322	498 260	171 859	314 014	89 463	184 246
Brodsko-posavska	1 158	33	36 759	60 030	14 313	25 677	22 446	34 353
Osječko-baranjska	3 574	222	107 598	217 692	66 971	125 390	40 627	92 302
Požeško-slavonska	1 062	56	19 706	41 486	14 054	28 587	5 652	12 899
Virovitičko-podravska	858	7	16 710	44 744	11 843	31 776	4 867	12 968
Vukovarsko-srijemska	2 037	185	80 549	134 308	64 678	102 584	15 871	31 724

Source: Authors processing according to DZS data

According to the DZS, the share of tourism in the total number of tourist arrivals in Eastern Croatia was 1.3%, while according to research in 2013, the region accounted for 0.5% of total tourist traffic (Sudarić, 2015), which still makes it the least visited region in Croatia, although it shows a slight increase. Only 0.5% of tourist overnight stays were realized in this area, which is not surprising considering the number of accommodation capacities (only 0.75% of permanent beds).

Comparing the average length of stay in the destination, which in Croatia averages 4.6 nights, in this area tourists spend only 1.9 nights, from which it can be concluded that tourists visiting tourist destinations in Eastern Croatia visit it during the weekend or are one-day excursionists. Most of the accommodation facilities located in this region are private accommodation, and there are only a few hotels or other forms of commercial accommodation, which actually indicates that tourism in this area is developing thanks to the efforts of the private sector and accommodation.

According to the data of the Tomas Hrvatska 2019 Institute of Tourism, for the first time the attitudes and consumption of tourists in the area of Continental Croatia are included. As the main activities during their stay in the destinations of the continental part of Croatia, tourists mention going to restaurants, sightseeing and visits to national parks and nature parks, historical buildings, museums and galleries, hiking and other sports and recreational and entertainment and cultural activities. It should be noted that tourists are the least satisfied with the offer of entertainment, an adaptation of the destination for people with special needs, bicycle routes and trails, and information about protected natural areas. It is also interesting to note that the average daily consumption of tourists in Croatia is 92 euros per person per night, while consumption in the observed region is 115 euros, which is significantly above the Croatian average. And this indicates the possibility of developing quality tourism in the continental part of Croatia. Eastern Croatia has numerous natural and social resources that represent great potential for tourism development, cities such as Vinkovci, Vukovar, Osijek, Slavonski Brod, Virovitica, Nova Gradiška, Požega, Našice, Beli Manastir, Đakovo, Ilok, etc. In addition to the above, and various folklore events that attract a large number of tourists such as Vinkovačke jeseni, which are estimated to be visited by between 120 and 150 thousand visitors or Đakovački vezovi, and the recognizable gastronomic offer of local family farms. Of the many natural beauties, of which the Papuk Nature Park and Kopački rit should be singled out, which according to the official data of the park is visited by 40,000 visitors (in 2019). All of the above, but also many other attractive tourist resources represent tourist potentials that have not yet become a quality tourist product and are insufficiently touristically valorized.

3. The Impact of The Pandemic on Tourism

According to previous research, it has been shown that tourism as an economic activity generates about 20% of the Croatian GDP, which is a very high share compared to other EU member states. This fact is positive because it speaks of the high development of Croatian tourism, but at the same time the insufficient development of other economic activities. This pandemic has shown that the appearance of the disease worldwide can seriously jeopardize the tourism business, especially in countries such as Croatia, whose economy is highly dependent on tourism, especially the tourist season.

In Croatia, a particularly big problem is the so-called economic weakness, ie lack of sufficient production capacity and excessive dependence of the economy on imports and the tourist season. Current economic indicators already show, which countries will recover faster from the corona crisis. Primarily, these are developed countries such as Germany, Austria and the like, whose economy is very developed and does not depend exclusively on one economic activity (Čorak, 2020;1,2).

On the other hand, just as a pandemic has its own cycle or initial phase, growth phase, maximum or plateau phase and decline phase, it can be assumed that the recovery of the tourism industry will not happen all at once, or that it will not return to tourism levels immediately after the epidemic (Krešić, Mikulić, 2020;3). Regarding continental tourism, current expectations are in favor of specific forms of tourism that take place in Continental Croatia, primarily in Slavonia and Baranja (rural tourism, enogastronomic tourism, hunting and fishing tourism, etc.) (Telišman-Košuta, 2020; 2). Namely, the point is that so far the tourist offer of these areas has not attracted such tourist demand as in the destinations of Coastal Croatia. Given that the emergence of the coronavirus pandemic has increased tourists concern for their own health, it is to be expected that in the future tourists will be more inclined to destinations that are not characterized by mass tourism, large crowds, etc. Continental Croatia destinations will have a comparative advantage over destinations of Coastal Croatia, primarily family farms where tourists are offered a pleasant holiday in a quiet environment away from the city crowds and

mass tourism. In this way, entrepreneurs in Continental Croatia have the opportunity to develop new accommodation facilities and facilities that would attract tourists for whom such facilities would be an alternative to the sun and the sea. Another advantage is that the tourist offer of Continental Croatia offers various facilities during the whole year, which would mitigate the seasonality of tourism that prevails in the destinations of Coastal Croatia.

It is known that tourism has an interdisciplinary dimension, and depending on its spatial scope and intensity, so far it has been more or less monitored through its impact and connection with the economy, law, transport, environment, spatial planning, architecture, etc. Now that tourism is affected by the pandemic, its perhaps neglected dimension is visible, and that is the health security in tourism. It is known that the health security significantly depends on compliance with health regulations, health opportunities, but also the organization of the national, regional and local health system (Kranjčević, 2020; 1).

Tourism will be increasingly linked to ensuring health security and monitoring the public health system where tourism takes place. This means that in the new relations, the issue of health security will become an important segment on travel preparation, destination selection, but also the provision of services in tourism. This means that in the post-covid time, it will become important to ensure health, safety, both individual indoor and outdoor spaces in which tourism takes place (buildings for catering and tourism purposes, buildings for culture, health, transport, sports, entertainment, beaches, parks etc.). The implementation of tourism health security is related to the health system, both at the local level and at the level of tourist destinations, regional levels, national levels, but also globally (Kranjčević, 2020; 2). In the tourist destinations of Continental Croatia, such prevention is very feasible, primarily due to the absence of components of mass tourism.

Although so far most entrepreneurs in tourism have not paid too much attention to health protection, with the advent of the pandemic and this trend is changing. In the tourist destinations of Continental Croatia, this will not be too much of a challenge, as this area has always been known for its clean environment, favorable climate and pleasant ambience. These can be comparative advantages of continental tourism in Eastern Croatia. In this function, an important role can be played by health institutions in cities and municipalities, but also institutions of health and health-preventive tourism such as Bizovačke toplice, Lipik and Daruvarske toplice.

4. The results of the survey

For the purpose of writing this paper, a primary survey was conducted on a sample of 100 respondents, experts in the field of tourism and health. This research was conducted using a questionnaire on a selected sample of experts in the field of tourism, namely: 28 experts in tourism and hospitality, 13 in the field of tourist boards and other experts from scientific and professional institutions dealing with tourism (spas and health care institutions). The survey questionnaire itself consists of 8 main and auxiliary questions in which respondents assessed the current development of tourism in Continental Croatia and future development after the pandemic. The majority of respondents rated the development of Croatian continental tourism so far as good (3) (51.9%), while 31.5% of them rated the development so far as sufficient (2). This indicates a relatively low level of development of continental tourism, which is confirmed by the data on the number of arrivals and overnight stays, according to which continental tourism participates in the total tourism in Croatia with 1.3%. Tourism in Continental Croatia lags behind not only in the number and size of accommodation capacities, but also in the degree of capacity utilization.

According to the respondents, of the specific forms of tourism, the most developed are enogastronomic and religious tourism, with 46.3% of respondents rated enogastronomic tourism as good (3), and 40.7% as very good (4). 27.8% of respondents rated religious tourism

as good (3), and the same number as sufficient (2), and 24.1% of them as very good (4). The remaining specific forms of tourism (rural, sports-recreational, cultural, health) were rated as good (3) and sufficient (2). This confirmed the already mentioned fact that there are many untapped opportunities for the development of these specific forms of tourism. Respondents rated the quality of accommodation facilities as good (3) and very good (4), which indicates a relatively satisfactory quality of existing accommodation facilities. The number of accommodation capacities was assessed as good (3) or sufficient (2), which indicates insufficient construction of accommodation capacities in relation to tourist demand. When asked how you rate the future development of continental tourism after the pandemic, most respondents give very optimistic development forecasts, giving it an excellent rating. Such forecasts seem acceptable given the advantages of continental tourism for organizing individual vacations, especially in the summer. The majority of respondents rate the model of integrated tourism product development as very good (4), which confirms the author's thesis that the most acceptable model of continental tourism development is through an integrated tourism product. This means that through such a model the cumulative effects of different specific forms of tourism that are complementary to each other can be successfully valorized, which is in line with the results of some previous research. The majority of respondents are of the opinion that continental tourism can partially compensate for holiday tourism at sea. It is considered that this is achievable, especially in the bathing destinations of continental tourism.

The best rated types and specific forms of tourism are rural, sports-recreational and enogastronomic tourism, which was rated by more than half of the respondents as very good (4) and excellent (5), which is expected given the very high quality of these forms of tourism. Cultural, religious and health tourism were mostly assessed as good (3), which is in line with the current situation, but they also have the potential for better development. Starting from the principle of sustainable development, the respondents gave the highest rating to environmental sustainability, and sociocultural and technological sustainability were highly rated, which is understandable given the quality and preservation of natural resources and cultural heritage. Political and economic sustainability was assessed as good (3), which is expected given that Continental Croatia is among the least developed regions in Croatia. For the long-term sustainable development of continental tourism, it is important to respect all the principles of sustainable development, especially the economic principles of sustainability, to which new investments in various elements of the tourist offer can contribute. Given the high quality of the environment in order for long-term environmental protection, it is necessary to use renewable energy sources, as well as other acceptable technological solutions. Respect for political factors as a principle of long-term sustainable development should contribute to this concept.

5. Conclusion

Throughout history, tourism has encountered many challenging situations and managed to recover after each one. It is quite certain that the coronavirus pandemic has affected the entire world economy and will change the current way of life, but also the habits of people. It is unquestionable how tourism will recover, but gradually and significantly different than before. Tourists will turn to unexplored areas and destinations that are not visited by a large number of tourists. This can be an advantage for continental tourism, which has the opportunity to compete with destinations on the coast, by which Croatia has been recognizable so far. The continental area of the Republic of Croatia is rich in natural and social resources that have not yet been sufficiently researched and valorized in terms of tourism, and since it is predominantly a rural area, mass tourism cannot be developed there. This is also shown by the results of the survey, which indicate the great possibilities for the progress of continental tourism and that it can partially compete with leisure tourism at sea. This concept of continental tourism development

requires a clear strategy that will connect all participants in the tourist offer in order to provide a quality tourist product. New development plans and new investments are needed in which various sources of financing should be optimally used, especially potential sources of European Union funds.

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AN ASSESSMENT OF STUDENT KNOWLEDGE
OF SUSTAINABLE DEVELOPMENT IN CROATIA

ABSTRACT

The Sustainable Development Goals (SDGs) adopted in the 2030 Agenda have undoubtedly become a set of primary and binding guidelines for all the global actors, including heads of state, governments, society in general, and international business stakeholders. Given the importance of this topic, the aim of this research was to determine the student knowledge of the goals of sustainable development in higher education institutions. The study was conducted in May 2020, using a survey method on a sample of 324 students in Croatia. The data collection was conducted using an anonymous online survey questionnaire. The data processing included uni-variate analysis and bi-variate analysis procedures (t-test). Statistical data analyses were conducted using MS Office Excel 2016. The results of the study showed a little knowledge of the sustainable development goals in the student population.

Keywords*: sustainable development**, knowledge , student, higher education institutions.*

1. Introduction

The 2030 Agenda for Sustainable Development is considered a guideline for the development of a new world. It is based on a comprehensive vision of development that aims to eradicating social inequalities and preserving the planet from environmental and other disasters. The Sustainable Development Goals are part of the 2030 Agenda document adopted by the UN General Assembly on 25th September 2015 and signed by 193 member states of the UN Assembly. Humanity is facing a major challenge of the planet's sustainability, and the question of how young people are prepared for this challenge has been insufficiently researched. This study raises the following research question: What is the level of knowledge of 17 sustainable development goals in student population in different years of study programmes in the field of economic and technical sciences in Croatia?

The goal of this research is to analyse students' knowledge and attitudes concerning the sustainable development and the importance of the 2030 Agenda for their future lives and the lives of their families, as well the corporate sector. The recent lockdown period was a specific opportunity to explore students' insights into the importance of sustainable development goals. Encouraged by new insights, a debate should be opened on the importance of knowledge transfer related to the interdisciplinary analytical review of the SDG process in which experts from different areas of the SDG have created a framework that reveals possible conflicts or

synergies among objectives and methods illustrating how their interactions are to be managed. Higher education institutions should promote sustainability and sustainable development goals, even more so as these issues are both under-researched and underrepresented. The topic of sustainable development needs to be implemented at every level of the current education systems, most of all in the higher education system as the last level of preparation of individuals to understand contemporary economic, environmental and social challenges evolving in line with the 2030 Agenda guidelines. The findings of this research show that students in higher education institutions do not have sufficient knowledge of the sustainable development goals and that the level of knowledge acquired by studying should increase. The research implications relate to conclusions based on a limited set of data and rely on other studies described in the paper. The practical implications lead the authors to the conclusion that a joint interdisciplinary approach of higher education institutions is necessary to challenge students' current views on sustainable development through their study programmes. The study is structured as follows: First, a review of the literature on sustainable development is provided, followed by a description of the methodology and research results, and lastly the major ideas and implications are stated in conclusion.

2. The concept of the sustainable development

In 1969, the USA Environmental Protection Agency was established, and the National Environmental Policy Act defined sustainable development as "Economic development that may have benefits for current and future generations without harming the planet's resources or biological organisms." (Šlaus, 2020: 30). It is known that the Report of the World Commission on Environment and Development: *Our Common Future* adopted in 1987, also known as *The Brundtland Report,* popularized the term sustainable development and was adopted by almost all international institutions, agencies and non-governmental organizations. Cortese (2003) states that higher education institutions are responsible for developing an individual's values, skills, knowledge and awareness needed to create a sustainable future through all relevant educational subjects, programmes, and majors. The United Nations General Assembly declared the period from 2005 to 2014 the Decade for sustainable development (DESD), and appointed UNESCO the leading agency for the implementation of its goals at all levels of education.
At the Earth Summit in Rio de Janeiro in 1992, in Chapters 35 and 36 of Agenda 21, guidelines for universities were adopted aimed at 1. improving long-term scientific assessment, building research capacities, 2. redirecting education towards sustainable development, 3. increasing public awareness of the interrelated nature of human activities and the environment; and 4. promoting training programmes for human resource development and facilitating the transition to a more sustainable world (Agenda 21, 1992). Although the Republic of Croatia was one of 179 countries that accepted and signed Agenda 21, certain restrictions at universities and polytechnics regarding study programmes for sustainable development and implementation of research projects have not yet been dismantled (Jelić-Mück and Pavić-Rogošić, 2002). The 2030 Agenda and the Sustainable Development Goals were adopted by all United Nations Member States in September 2015 "to encourage action over the next 15 years in areas of critical importance to humanity and the planet" (UN, 2015). The Goal 4 refers to quality education and states: „It is essential to ensure inclusive and equal quality of education and promote lifelong learning opportunities for all ". Count 4.7 describes education for sustainable development and the changes towards the sustainability to be introduced by higher education institutions. The important contribution of education to the implementation of the other 16 SDGs is also emphasized (UNESCO, 2017). Regarding that matter, many higher education institutions around the world have already endeavoured to adopt the 17 sustainable development goals and the 2030 Agenda.

To reconcile different views on the sustainable future advocated by the „green economy" proponents on the one side, and those by the proponents of alternatives to economic growth on the other (Adloff and Neckel, 2019), presents still an issue. Ruiz-Mallén and Heras (2020) examined the concept of sustainability embraced by ten key HEIs networks both globally and regionally based on HEIs networks' data from available online documents related to the 2030 Agenda. The introduction of sustainable development concept in education requires connecting the existing educational disciplines and thematic areas with society's technological, environmental, social, cultural and political needs (Denona Bogović and Čegar, 2012). Cebrián and Junyent (2015) highlight that very little has been achieved in terms of the full inclusion of education in sustainable development even though more than a hundred universities have signed international declarations and committed themselves to incorporating sustainability into their scope of activities.

Calder (2016) stated that the Higher Education Academy and the National Association of students in the United Kingdom (UK) conducted a research on students' attitudes and sustainable development skills. The results show for the fifth year in a row that 80% of students in the United Kingdom reported that their institution should work harder on sustainable development, and 60% wanted to learn more about it. According to Kitamura (2017) discussions on a new approach to education for sustainable development (ESD) have been initiated in many Asian countries and regions, leading to a series of educational reforms to create a fair and sustainable education and society as a whole.

Körfgen et al. (2018) point out that in most countries, who are signatories of the 2030 Agenda, there is no data available as to which universities have conducted research on global sustainable development goals. Austrian universities map research on sustainability issues and show that the current focus of research projects and publications is on Goal 3 (Health and welfare, aimed at ensuring a healthy life and promoting the well-being of people of all generations), and Goal 4 (Quality education).

Raditya-Ležaić, Boromisa and Tišma (2018) confirm in their study that the business market in Croatia lacks sustainable development experts. More than half of the respondents reported that degrees most in demand are a Master's in economics, political science, diplomacy, and international relations, while less in demand are experts having a degree in technical, and biotechnical, natural sciences and humanities. Finnveden, Newman and Verhoef (2019) consider that higher education institutions have a unique role in creating the leaders of tomorrow who will develop methods and solutions to sustainable development problems and contribute to the overall knowledge of society. Furthermore, Sardianou (2020) states that universities should improve the students' perception of sustainable development by adopting programmes that will affect their consumption habits from both the economic and environmental point of view.

In their study, Afroz and Ilman (2020), researched to determine the awareness level of the University of Malaya students concerning the Sustainable Development Goals (SDGs). The findings showed that the respondents have a high knowledge of and a positive attitude towards the SDGs. The results also revealed a strong positive correlation between the attitude and practice towards the SDGs. However, a weak negative correlation was found between the knowledge and practice towards the SDGs.

Jukić and Kakuk (2020) analysed the knowledge, attitudes and values of students at the Osijek University on the concept of sustainable development. The research results show that most students do not have enough knowledge about sustainable development. Moreover, there is a difference between older and younger respondents surveyed on understanding sustainable

development concept. Also, students believe that courses related to sustainable development should be incorporated in the curriculum.

The study conducted at the University of Rijeka by Buzov, Cvitković and Rončević (2020), comparing the research of 2010 and 2016, revealed that students participating in 2010 study showed more interest, unlike students participating in 2016 study who expressed less interest in the offered studies in sustainable development. Some students emphasized insufficient knowledge of sustainable development, and some students pointed to the need to introduce sustainability topics in the preschool and primary school education system. Furthermore, according to students' views, sustainable development topics are significant for their profession and should be included in study programmes (Buzov, Cvitković and Rončević, 2020).

3. Research methods

The research model was mostly adopted from the research carried out by Zamora-Polo et al. (2019) that focused on the following areas: the general knowledge of the SDG, the professional implications of the SDG, the personal implication of the SDG and universities' role in teaching and promoting the SDG amongst students. The model used in this research is presented in Figure 1.

Figure 1: Research model

KNOWLEDGE

IMPORTANCE

Teaching and promoting SDG at university

The importance of sustainable development for business operation

Students

Other sources of information about SDGs

The importance of sustainable development for business operation
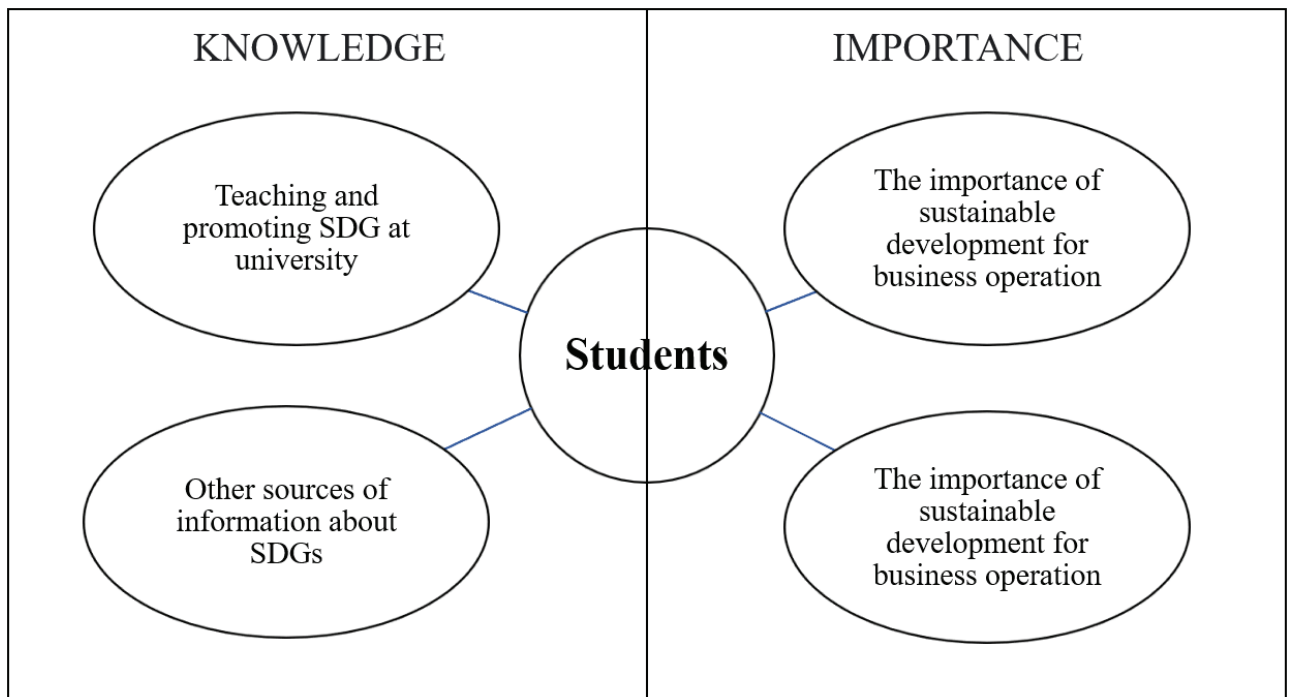
Source: Authors

3.1. Sample and measuring instruments

The research was conducted in May 2020 on a convenient sample of 324 respondents who attend classes at the International University Libertas and Algebra University in Zagreb, Croatia. The sample consisted of 249 students from Libertas International University and 75 students from Algebra University. Each of the students was presented by an anonymous online survey questionnaire. As all answers were valid, the research was conducted on all 324

respondents. According to the gender of the respondents, the sample included 73.33% of male students and 26.67% of female students. Both full-time and part-time students were included in the sample.

In addition to demographic variables, the survey questionnaire includes questions concerning the following three sections:
1. Knowledge: this part contains a series of questions that examined the students' knowledge and understanding of concepts, institutions and actors in the field of sustainable development. In the research carried out by Zamora-Polo et al. (2019), student self-evaluated their general knowledge of the SDG by using the Likert scale from 1 to 5. Instead of letting respondents to self-evaluate their knowledge, the survey consisted of 15 general multiple-choice questions about the SDG with only one correct answer.
2. The importance of sustainable development for life: it includes students' opinions and attitudes based on the impact sustainable development has on their lives, family and the entirety of humanity.
3. The importance of sustainable development for business operation: covering questions from several dimensions about their knowledge of the role of sustainable development in enterprises.

3.2. Data collection and processing procedures

The research was conducted in May 2020 during online classes. The completion of the questionnaire took 20 minutes. A lockdown was a special opportunity to explore the students' insights on sustainable development. The data processing included uni-variate analysis and bi-variate analysis procedures (t-test). The results that were obtained by statistical processing are presented graphically and numerically (tabular). Statistical processing and the data analysis were conducted with MS Office Excel 2016 software.

4. Research results

The first part shows the demographic characteristics of the respondents: gender and the year of study.

Graph 1: Distribution of respondents by gender and the year of study (N=324)
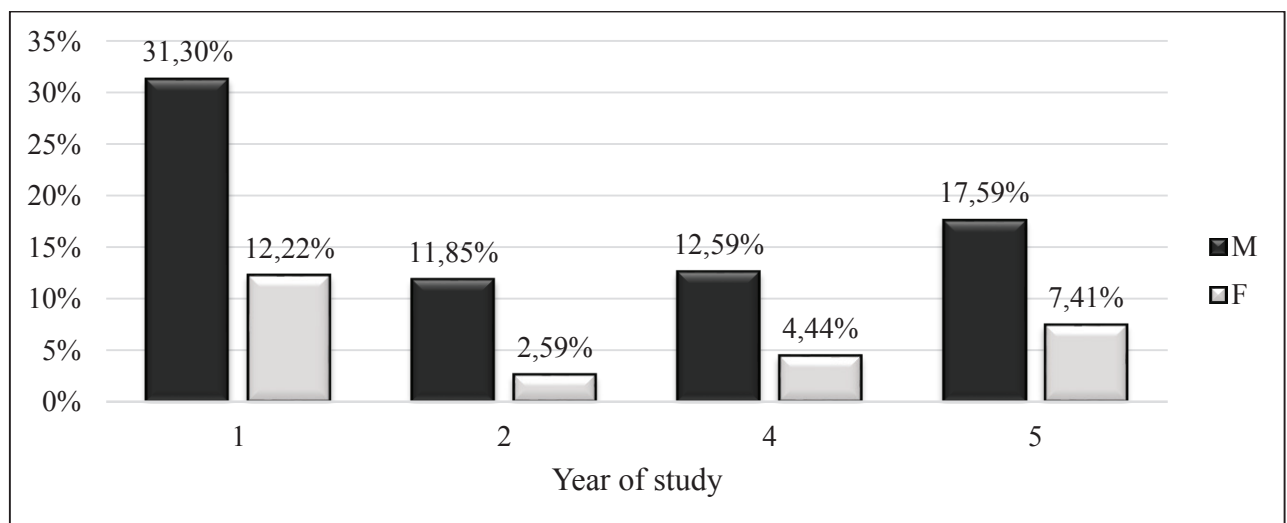
Source: Authors

Graph 1 shows that out of 324 respondents, 73.33% are male, and 26.67% are female. The most common answers were from the first year students (43.52%), the response from the fifth year is 25.00% of respondents, from the fourth year 17.04% of respondents, from the second year 14.44% of respondents, and there were no responses from the third year students. The ratio of male and female respondents was proportional to the total number of male and female respondents by the years of study. Although the portion of female respondents was only 26.67%, it served well to compare responses in terms of gender differences.

The questions are a closed type with multiple choice answers. Question P-3 examines the respondents' knowledge of the sustainable development concept.

Graph 2: Familiarity with sustainable development by the gender (N = 324)
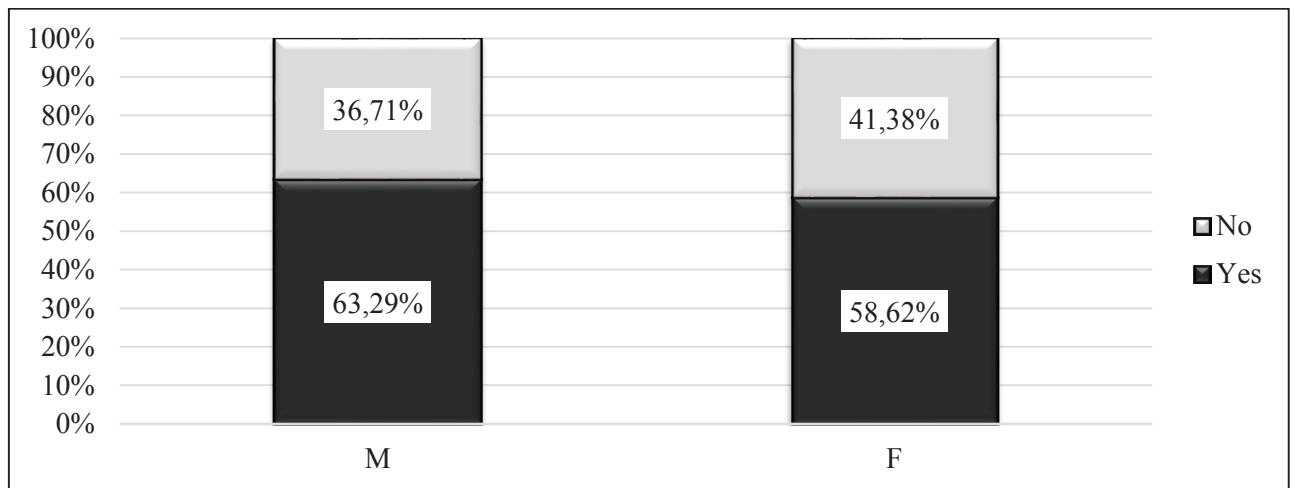
Source: Authors

Graph 2 shows the distribution of responses to familiarity with the sustainable development concept between the genders, which is almost equal between the male and female respondents. 63.29% of male respondents claim to be familiar with the sustainable development concept, while the share of female respondents is 58.62%. By performing a t-test with a confidence level of 95%, a p-value greater than 0.05, was obtained, i.e. there are no significant gender differences in the self-assessment of the respondents' knowledge of the sustainable development concept.

Graph 3: Familiarity with sustainable development according to the year of study (N = 324)
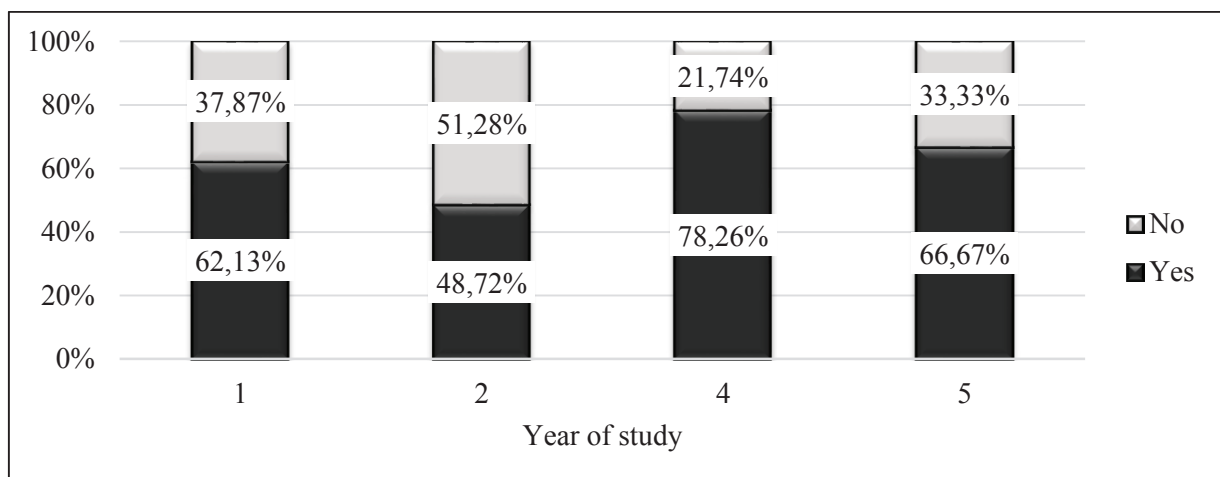
Source: Authors

The distribution of answers to the questions regarding the knowledge of the sustainable development concept among the students attending different years of study is shown in Graph 3. The fourth-year students demonstrated the greatest knowledge of the sustainable development concept. The majority of them, 78.26%, declared to be familiar with the sustainable development concept, followed by a slightly lower percentage in the fifth-year student group of 66.67. The next on the list downwards are first-year students with 62.13% and finally second-year students with 48.72%. Differences in the knowledge of sustainable development concept among students of different years are not statistically significant.

Questions P-4 to P-27 relate to the general knowledge of the 2020 Agenda and 2030 Agenda. Questions are multiple-choice questions allowing respondents to select only one statement from a list of choices.

Graph 4: Correlation of correct answers in relation to the number of offered statements to the questions P-4 to P-16, P-26 and P-27 (N = 324)
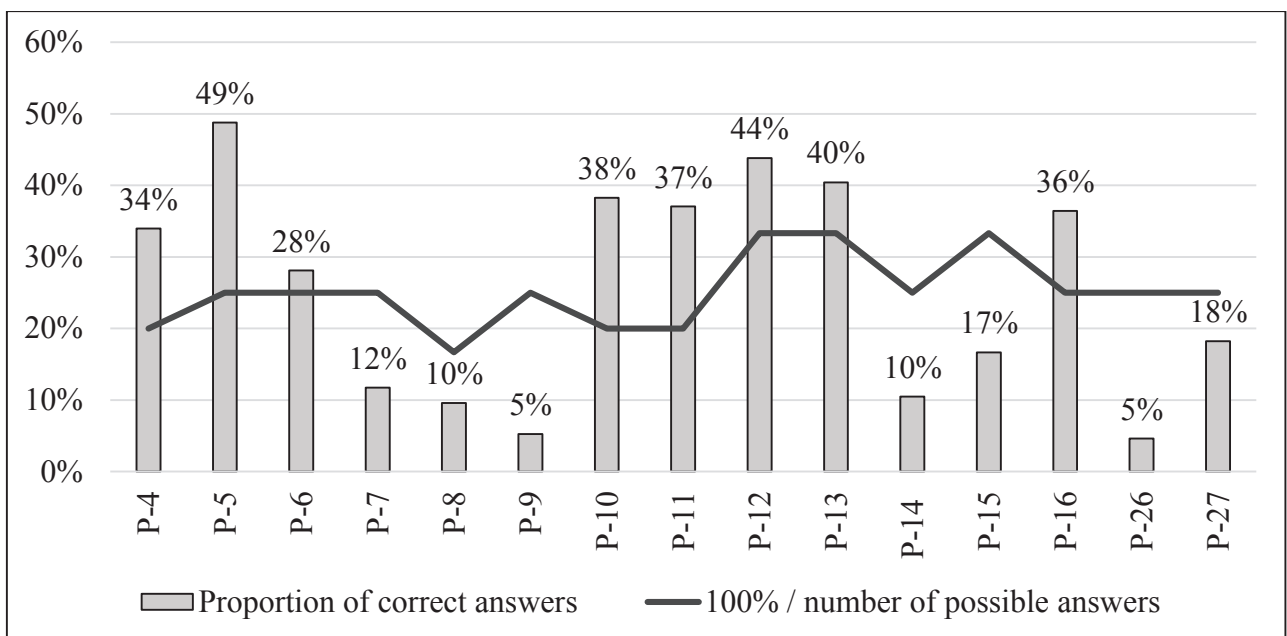
Source: Authors

In Graph 4 the columns indicate the shares of correct answers for the questions P-4 to P-27, without open-ended questions. The line represents the expected number of correct answers in case the respondents randomly selected an answer. Specifically, as the question P-4 is a multiple-choice question with five statements, out of which only one is correct, there is a 20% chance of selecting a correct answer. Therefore, there is a slightly higher number of correct answers compared to the randomly selected ones because 34% of respondents selected the correct answer. Graph 4 shows that none of the questions about the knowledge of the 2020 Agenda and 2030 Agenda were answered with more than 50% correct answers. In as many as 7 cases, there were more incorrect answers compared to the expected number of correct answers that the respondents selected randomly. The questions and answers shown in Graph 4 are listed in the following Table 1.

Table 1: List of questions about the knowledge of the 2020 Agenda and 2030 Agenda

	QUESTION	ANSWER
P-4	Indicate which institution in 1987 presented in its report the notion of sustainable development as "development that meets the needs of today without compromising the needs of future generations".	World Commission on Environment and Development (*Brundtland* Commission)
P-5	State what sustainable development encompasses.	Integration of economic, social, environmental and political-security dimensions
P-6	Identify three flagship initiatives of the Europe 2020 strategy.	Smart growth, sustainable growth, inclusive growth
P-7	Identify three guidelines covered by the 2020 Agenda - SMART GROWTH.	Innovation, digital society, education
P-8	Identify two guidelines covered by the 2020 Agenda - SUSTAINABLE GROWTH.	Climate, energy and mobility; competitiveness
P-9	Identify two guidelines covered by the 2020 Agenda - INCLUSIVE GROWTH.	Employment and skills; fight against poverty
P-10	Indicate which global body has created the Sustainable Development Guidelines.	United Nations
P-11	Indicate which body adopted a number of international documents that represent the general regulatory framework for sustainable development issues.	United Nations
P-12	Indicate the document adopted by the UN at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992.	Declaration and Programme of Action for the 21st Century (Agenda 21)
P-13	Indicate which policy document was adopted by the United Nations General Assembly in 2000, which sets out the goals of sustainable development in areas of interest to the international community and the activities that should contribute to their achievement.	United Nations Millennium Declaration
P-14	State treaties by which the European Union promotes sustainable development as one of the EU's fundamental objectives.	Treaty of Amsterdam; Gothenburg Sustainable Development Strategies 2001; Revised Sustainable Development Strategy for an Enlarged Europe 2006
P-15	Indicate which documents on sustainable development have been adopted by the Republic of Croatia.	1992 Declaration and Program of Action for the 21st Century (Agenda 21); the Millennium Declaration and the Millennium Development Goals of 2000; the 2030 Agenda for Sustainable Development from 2015
P-16	Indicate when and where the 2030 Agenda for Sustainable Development was adopted.	2015 in September at the UN Summit in New York
P-26	Indicate which bodies in the Republic of Croatia perform tasks related to sustainable development.	National Council for Sustainable Development chaired by the Prime Minister of the Republic of Croatia; Ministry of Foreign and European Affairs
P-27	State the basic task of the National Council for Sustainable Development.	To propose measures and activities, priorities, obligors, dynamics and resources needed for the implementation of the 2030 Agenda Objectives: To monitor, analyse and coordinate their implementation.

Source: Authors

4.1. The importance of sustainable development for the lives of young people

Besides familiarity with sustainable development, the survey questionnaire examined the respondents' attitudes about the importance and impact of sustainable development on their lives, families and mankind.

Graph 5: Distribution of replies to the importance of sustainable development goals for the respondents' lives, the lives of their families and all of humanity (N = 324)
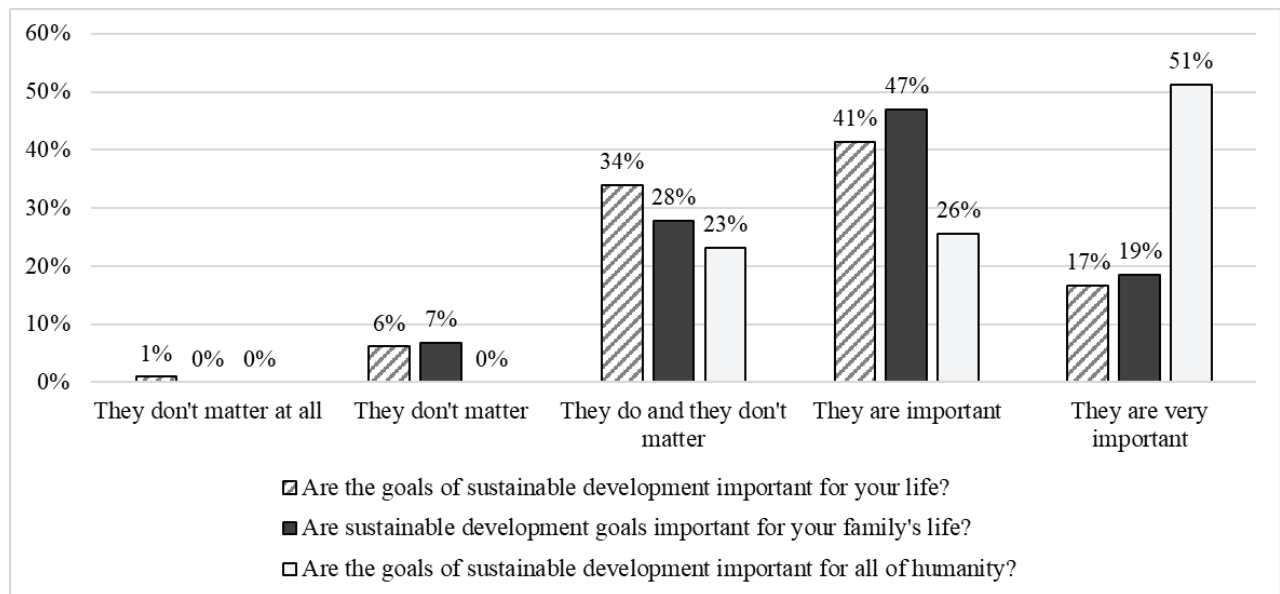
Source: Authors

It can be seen from Graph 5 that little or no respondents stated that the sustainable development goals are not important at all for their lives, their families and all of humanity. Six percent think that these goals are not important for their lives, seven percent think that they are not important for their families and not a single respondent thinks that the goals are of no importance for humanity as a whole. Most respondents think that the sustainable development goals are important for their lives and the lives of their families, however 34% consider these goals as not important and 23% as least important. Over 50% of respondents stated that the sustainable development goals are very important for humanity as a whole. Three-quarters of the respondents said that their families were unaware of the 17 sustainable development goals.

4.2. The importance of sustainable development for business operations

The survey questionnaire included three questions related to the respondents' attitudes towards the implementation of sustainable development goals in business operations:
- P-33: Indicate whether Croatian companies should have a sustainable development office and sustainable development experts. (a yes-or-no question)
- P-34: According to your opinion, establishing a company's sustainable development office is: a) unnecessary expense, b) necessary investment in future business development, c) It is not necessary because companies are not ready for such business., d) None of the above.
- P-35: Do you know any Croatian company that operates in accordance with the goals of sustainable development. Write all you know.

Most respondents, 96 %, stated to have no knowledge as to whether Croatian companies operate in accordance with the sustainable development goals. Only 4% of respondents mentioned the following companies: Rimac automobiles d.o.o., INA d.d., HEP group, Croatian Telecom d.d., Cemex Croatia d.d., Jamnica plus d.o.o., Cromaris d.d., Končar Group, Pevex d.d. Slightly more than half of the respondents, 56%, believe that Croatian companies should have an office for sustainable development and sustainable development experts.

Graph 6: Attitudes of respondents about the establishment of a company's office for sustainable development (N = 324)
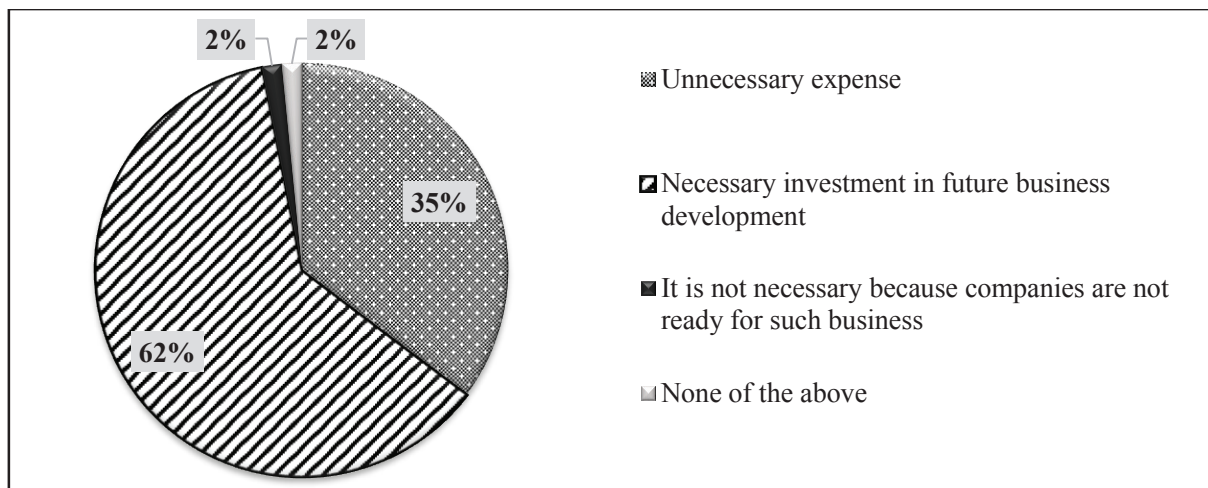
Source: Authors

According to the results represented in Graph 6 62% of respondents believe that the establishment of a sustainable development office within a company requires investment in future business development, 35% believe that it is an unnecessary expense and 2% believe that it is not necessary because companies are not ready for such business.

5. Conclusion

The adapted documents on sustainable development over the decades have clearly shown the leading role that institutions in higher education will play in the future world's development. In line with the set goals, this study was conducted in an attempt to measure students' knowledge of sustainability issues and the importance of the 17 sustainable development goals in society. The results suggest that students show certain understanding of sustainability, but also entirely inadequate knowledge of the sustainable development goals. There are no gender differences in being (un)informed, as well as there are no differences in being informed between students in the higher years of study and those in the lower years. The knowledge about the 2020 Agenda and 2030 Agenda is quite poor. Not one question was answered with more than 50% of the correct answers, and the distribution of correct answers is similar to the distribution of randomly selected answers or „lucky guesses". The results indicate that there is no statistically significant difference between familiarity with sustainable development among respondents of different years of study. Besides, there is a significant difference among the groups of students who are uninformed about the activities carried out by the European Union and the Republic of Croatia related to the 17 sustainable development goals.

As regards the importance of sustainable development goals for the performance of Croatian enterprises, the respondents are quite divided, so that almost two-thirds believe that it is a

necessary investment in the future, while one-third consider it an unnecessary expense. A small number of respondents know a few Croatian enterprises that organise their business operations in line with the sustainable development goals, while 56% of respondents believe Croatian enterprises should not have a sustainable development office or field experts in their teams.

This study aims to point out the lack of transfer of knowledge about the sustainable development goals to the student population in all years of the higher education studies. It's especially alarming that no statistically significant difference was found between students in the 1st and the 2nd year of college compared to students near the completion of their studies.

The consequence is a poor recognition of the sustainable development goals by young people, which reduces their awareness and responsibility in creating the changes needed at a local and global level. The implementation of the objectives encourages a multidisciplinary and interdisciplinary approach including many scientific disciplines and technologies, especially social sciences. In the long run, it is necessary to create a positive environment for cooperation between universities and other stakeholders nationally and internationally. It is the global integration that has pointed to a great need for sustainable development experts possessing a very specific knowledge and skills required to work well in international corporations, organizations or institutions of the European Union.

Taking into account that the sample was drawn from the student population especially for the purpose of the research, which means that the sample was convenient, the obtained data cannot be generalized to other higher educational institutions in the Republic of Croatia. This study suggests that future research should focus on examining knowledge of sustainable development among preschool and primary school population. Moreover, it is necessary to explore the extent to which students are willing to participate in activities and projects that promote the implementation of sustainable development goals. In this sense, sustainable development is a comprehensive project that should be incorporated in the educational policy and mould the behaviour of all social groups in society.

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A scientific paper

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A COMPARISON OF CHARACTERISTICS OF CAR BUYERS' GROUPS FROM DIFFERENT REGIONS OF THE REPUBLIC OF CROATIA

ABSTRACT

The aim of this paper is describing and comparing characteristics of car buyers from Eastern Croatia (Osijek-Baranja, Vukovar-Srijem, Brod-Posavina, Virovitica-Podravina, Požega-Slavonia, Sisak-Moslavina and Bjelovar-Bilogora County), Central Croatia (Zagreb City, Zagreb, Koprivnica-Križevci, Karlovac, Krapina-Zagorje, Varaždin and Međimurje County) and Adriatic Croatia (Dubrovnik-Neretva, Istria, Lika-Senj, Primorje-Gorski Kotar, Šibenik-Knin, Zadar and Split-Dalmatia County). The buyers are compared based on their demographic and some of their car buying characteristics. Data was collected with the survey method and the car buyers were contacted by phone and internet. Collected data were analysed with cross tabulation. The results of the paper indicate the existence of statistically significant differences among car buyers from Eastern, Central and Adriatic Croatia based on their household monthly income, gender, education, number of owned cars, criteria of price and country of origin, choice of new vs. used cars and involvement in car purchase. The results of the paper point to marketing implications for car dealers and manufacturers intending to sell to buyers in different regions of the Republic of Croatia. Limitations of the research and implications for future research were also presented.

Keywords: *car buyers, Republic of Croatia, cross tabulation.*

1. Introduction

Due to the intensification of the competition in the global car market, adapting the features of car brands and marketing strategies to specific needs and wants of car buyer segments could provide a relevant advantage. Naturally, in order to effectively adapt the marketing and advertising activities, explaining consumer behaviour and understanding the differences among consumer segments is a vital prerequisite.

Although the car market is lucrative in the Republic of Croatia as well, characteristics of specific car buyer groups have only been partially researched (Tonković Pražić, 2018). In order to further our understanding and knowledge on car buyers in Croatia, some characteristics of car buying behaviour have been examined and car buyer groups extracted on the basis of their place of residence have been compared using the cross tabulation method.

2. Literature review

Since car buying is a process in which a consumer buys a more durable and more expensive product, car buyers usually spend more money and take on a higher risk than buyers of less

expensive products, and the result of this is a more complex buying process. Consequently, there are many different aspects of car buyers' behaviour that they exhibit while in the car buying process. In order to understand car buyers' behaviour and differences among them, it is important to understand different factors and variables that affect their behaviour. Some of the aforementioned variables were analysed by different authors and some of their findings will be presented in this chapter.

According to Train's analysis of different individual decision-making models (2003), individual products choices that consumers make are correlated to their socioeconomic, demographic and psychographic variables. Similarly, Prieto and Caemmerer (2013) found that consumers' demographic, household, individual and household car fleet characteristics influence their car buying decision. According to this research, consumers' income, age, gender, household location and country of origin of a car differed for segments of car buyers extracted on the basis of the vehicle type they bought. Choice of new or used car was also considered as a distinctive feature of car buyers, being an important factor of car decision-making behavior (Prieto and Caemmerer, 2013). Similarly, Choo and Mokhtarian (2004) found that age, household size, income and education level influence car choice of consumers, while Mienert (2002) found the same to be the case for gender of car buyers. Monga, Chaudhary and Tripathi (2012) found that groups of car buyers who differ on the basis of car brands they buy are characterised by different demographic variables, such as household monthly income. Since named variables proved to be important to understand the differences among car buyers, some of them were also considered when investigating car buyer characteristics and differences among car buyer groups in this research, namely their gender, age, household monthly income and car fleet size (whether they own one or more cars).

Among other factors influencing car buying decisions, many authors investigate criteria car buyers use when choosing a car (Vinson, Scott and Lamont, 1976, Allen, 2001, Fetscherin and Toncar, 2009, Jiang, 2007, Pitts and Woodside, 1983, etc.). Among the criteria more likely to be used when choosing a car, most of previously mentioned authors stress the importance of price, safety features, car brand, quality, country of origin etc. According to Reetika and Kumar (2019), car buyers consider factors such as the cars' country of origin, the level of comfort, safety and flexibility, but also take into account the environmental impact of the car they would buy. Some research was conducted on European car buyers, for example Speri and Wickelgren (2010) found that Swedish car buyers most commonly used the size of the car, comfort, design and fuel consumption as criteria when buying a car. Some of these criteria were encompassed with this research: country of origin and price of a car.

Extensive research has been conducted on the effect a country of origin has on consumers during their decision-making process. Some researchers conclude that consumers give the country of origin only a symbolic and emotional meaning (Botschen and Hemettsberger, 1998, Amine and Shin, 2002), while others conclude that consumers evaluate products based on their country-of-origin's perceived inferiority or superiority (Mohamad et al., 2000, Yassin, Noor and Mohamad, 2007). In addition, some authors concluded that when considering products from less developed countries, consumers tend to place more importance to country-of-origin criterion and found it was significantly positively related to consumer's purchase intention (Chinen, Jun and Hampton, 2000, Lin and Chen, 2006). Furthermore, some authors, when investigating country of origin of car brands, found that it was a relevant and often a determining factor in the decision-making process (Lawrence, Marr and Prendergast, 1992, Diamantopoulos, Schlegelmilch and Preez, 1995, Chinen, Enomoto and Costley, 2000, Fetscherin and Toncar, 2009). Johnson et al. (2016) concluded that the positive effect of a

country of origin can be transferred to a product provided it is logically correlated to the country of origin. According to Roman et al. (2018), the country of origin reflects a positive influence on the choice of cars from that country. Since, according to previously presented authors, country of origin has an important influence on car choice, it was also considered as a factor in this research.

Reetika and Kumar (2019) found that car buying is a decision of the greatest importance, especially for middle class car buyers. Considering the relevance of this buying decision for consumers, involvement with cars should also be an important factor for car buyers. Mittal (1989) defined consumer involvement as the ratio of interest and concern a consumer goes through during his decision-making process. Car purchase involves a high level of consumer involvement, although car buyers seem to exhibit behavior known as ultra-involvement, i.e. they continuously search information about new cars and therefore do not invest a lot of time or effort into investigating products during the purchase process (Abramson and Desai, 1993). This aspect of car buying behavior also proved important to car manufacturers and other stakeholders since it is proven that it affects car buyers' response to advertising (Buchholtz and Smith, 1992). Tamboto and Pangemanan (2019) found that purchase decision was influenced by product involvement when investigating car buyer behaviour in Indonesia. Since involvement proved to be an important factor in car buying behavior, it was investigated as a differentiating factor of car buyer groups in Croatia.

3. Methodology

For the needs of investigating some of the characteristics of car buyers in the Republic of Croatia, a measuring instrument was used that consisted of questions and claims about specific aspects of car buying behaviour (country of origin preferences, price as a criterion of car choice, involvement in car purchase, new or used car preference), while the second group of questions concerned with some demographic characteristics of the respondents (age, family monthly income, education etc.).

Only the respondents from the Republic of Croatia who have bought a car within the last five years could have participated in the survey, due to the fact that they were able to remember the important aspects of the buying process. The respondents were chosen to participate in the research using the stratified random sampling method. The sample frame was divided into groups according to the county of residence and respondents from the groups were chosen randomly. The participants were contacted by telephone.

The responses given by 532 respondents who were divided into three groups of car buyers were used in further analysis. The three groups of respondents were: those residing in Eastern Croatia (in Osijek-Baranja, Vukovar-Srijem, Brod-Posavina, Virovitica-Podravina, Požega-Slavonia, Sisak-Moslavina or Bjelovar-Bilogora County), those residing in Adriatic Croatia (in Dubrovnik-Neretva, Istria, Lika-Senj, Primorje-Gorski Kotar, Šibenik-Knin, Zadar or Split-Dalmatia County) and those residing in Central Croatia (Zagreb City, Zagreb, Koprivnica-Križevci, Karlovac, Krapina-Zagorje, Varaždin or Međimurje County). The respondents were mostly contacted by telephone, while some of them participated in an online survey.

4. Results of the Research

The data collected with the survey was analysed with cross tabulation. Pearson's chi test was used to determine whether there were statistically significant differences between the car buyer groups. The null hypothesis assumes that the differences between the car buyer groups are accidental and therefore not statistically significant. The threshold for the rejection of the null hypothesis is 0,05.

Table 1 shows cross tabulation between car buyers' groups based on their demographic characteristics and the results of the Pearson's chi test (p).

Table 1: Comparison of demographic characteristics of car buyers from Eastern, Central and Coastal Croatia

Demographic characteristics	Total (N=532)	Central Croatia (N=240)	Eastern Croatia (N=128)	Adriatic Croatia (N=164)	p
Gender.					0,002
Female.	38,8	31,8	50,8	39,5	
Male.	61,2	68,2	49,2	60,5	
	100,0	100,0	100,0	100,0	
Household monthly income.					0,046
Up to 8000 HRK	35,2	35,1	37,0	33,1	
8000 to 13000 HRK	40,0	36,4	43,1	41,4	
More than 16000 HRK	24,8	28,6	20,0	25,5	
	100,0	100,0	100,0	100,0	
Age.					0,157
18-34	35,9	34,1	33,3	37,0	
35-54	55,4	56,4	58,1	56,2	
Over 55	8,4	9,5	8,6	6,8	
	100,0	100,0	100,0	100,0	
Education					0,038
Up to high school degree.	33,3	33,5	43,8	27,7	
Up to bachelor degree.	28,4	25,0	17,2	39,5	
Up to PhD.	38,5	36,6	29,2	29,2	
	100,0	100,0	100,0	100,0	
Household owns more than one car.					0,002
Yes.	18,4	21,0	11,8	26,5	
No.	81,6	79,0	88,2	73,5	
	100,0	100,0	100,0	100,0	

Source: author's calculations, based on Tonković Pražić (2018)

As can be seen from Table 1, based on the results of the chi square test (p), statistically significant differences between car buyers based on their demographic characteristics do exist. Statistically significant differences can be seen (at the level of p < 0,05) when it comes to car buyers' gender, their monthly household income, education and the number of cars a

household owns. On the other hand, differences among car buyers from different regions of Croatia based on their age do exist, but they were not found to be statistically significant.

After analysing car buyer groups based on their gender, it can be concluded that most car buyers in Central Croatia and Adriatic Croatia are men, while only in Eastern Croatia there are more female car owners, although the difference between female and male car buyers is not substantial. When considering the car buyers' household monthly income, it is obvious that car buyers in Croatia mostly receive a monthly household income of 8000 to 13000 HRK. When comparing car buyer groups, it can be concluded that most car buyers from Eastern Croatia are less likely than other groups to receive a monthly income more than 16000 HRK, and more likely to receive a monthly household income of 8000 HRK or less. Furthermore, car buyers from Adriatic Croatia are least likely to receive an income less than 8000 HRK, while they are most likely to receive an income higher than 16000 HRK. As far as education is concerned, it can be concluded that most of car buyers from Eastern Croatia attained an education level of a high school degree or lower. Unlike this car buyer group, car buyers from Central Croatia are more likely than other groups to attain an education level above the bachelor degree. Finally, car buyers from Adriatic Croatia are more likely to attain a mid-level education and less likely to attain the lower education level than the other two groups. When considering whether the car buyers own one or more cars in the household, it can be concluded that most Croatian car buyers own only one car in the household. However, there are statistically significant differences among the regions. For instance, car buyers from Eastern Croatia are less likely to own a second car than buyers from the rest of Croatia, while those from Adriatic Croatia are more likely to own a second car.

Table 2: Comparison of some of car buying behaviour aspects of car buyers from Eastern, Central and Adriatic Croatia

Car buying behaviour characteristics	Total (N=532)	Central Croatia (N=240)	Eastern Croatia (N=128)	Adriatic Croatia (N=164)	P
Prefers to buy					**0,048**
New cars	46,9	52,1	45,4	40,3	
Used cars	53,1	47,9	54,7	59,7	
	100,0	100,0	100,0	100,0	
Country of origin preferences					**0,039**
Does not prefer cars from developed countries.	20,5	21,2	18,4	21,2	
Does not have a preference.	25,2	27,0	23,1	24,2	
Prefers cars from developed countries.	54,3	51,9	58,5	54,5	
	100,0	100,0	100,0	100,0	
Country of origin preferences II					**0,004**
Does not prefer European car brands.	30,8	32,8	30,3	28,1	
Does not have a preference.	25,4	25,3	22,6	27,4	
Prefers European car brands	43,8	41,9	47,2	44,5	
	100,0	100,0	100,0	100,0	

Price preferences					**0,006**
When buying a car, does not consider the price first.	16,3	17,4	12,4	24,6	
Does not have a preference.	25,7	31,2	26,7	27,6	
When buying a car, considers the price before all else.	58,1	51,4	60,9	47,7	
	100,0	100,0	100,0	100,0	
Involvement in car purchase					**0,008**
Not willing to make a special effort in order to buy the best quality car.	22,5	27,9	11,9	22,3	
Does not have a preference.	26,8	24,5	29,8	28,0	
Willing to make a special effort.	50,7	47,6	58,3	49,7	
	100,0	100,0	100,0	100,0	
Involvement in car purchase II					**0,017**
Not willing to spend several months searching for the best car for her/him.	22,5	23,8	25,1	18,1	
Does not have a preference.	23,4	23,0	20,1	26,7	
Willing to spend several months searching for the best car for her/him.	54,1	53,2	54,8	55,2	
	100,0	100,0	100,0	100,0	

Source: author's calculations

Upon the conducted comparison of car buyer groups based on some car buying characteristics, the conclusion can be made that car buyer groups statistically significantly differ when considering their preferences of new cars, importance given to the country of origin of the car, importance given to the price of the car and involvement in car purchase. The results displayed in Table 2 refer to those variables upon which statistically significant differences were found, while those variables where statistically significant differences have not been confirmed were not shown in the table.

As is shown in Table 2, Croatian car buyers somewhat prefer buying used cars to new cars. However, there are differences among car buyers concerning this aspect of car buying behaviour. Namely, unlike car buyers from Eastern and Adriatic Croatia, car buyers from Central Croatia are more likely to buy new than used cars. Country of origin proved an important criterion in deciding on a car brand a Croatian car buyer would choose, but there are differences among car buyer groups. Although buyers from Croatia prefer buying cars from developed countries, it could be concluded that buyers from Eastern Croatia are more likely to buy cars from developed countries and European car brands than other car buyer groups. Meanwhile, car buyers from Adriatic Croatia are least likely not to prefer European car brands. Furthermore, Croatian car buyers consider price an important criterion when buying a car, since most of Croatian car buyers consider the car's price before all other car characteristics. Further analysis showed that buyers from Adriatic Croatia are more likely not to consider the price of a car first, while buyers from Eastern Croatia are more likely to consider the price of the car before all else. Finally, when analysing car buyers' involvement in car purchase, it can be concluded that Croatian car buyers are involved in their car buying decision making process. They are willing to spend several months in their decision-making process and also make a special effort in order to find the best car for themselves. However, there are also differences as far as this characteristic of car buying is concerned when

comparing different car buyer groups. Car buyers from Eastern Croatia are more willing to make a special effort when choosing a car than other car buyer groups, while car buyers from Adriatic Croatia are more willing to spend several months in the decision-making process.

5. Discussion

The conducted research had the aim to describe and compare some car buying and demographic characteristics of car buyers in Croatia divided on the basis of the region of their place of residence. Car buyers were thus divided into three groups – those from Eastern, Central and Adriatic Croatia. Empirical research was conducted on a sample of car buyers from the Republic of Croatia, and after the analysis of the collected data was conducted, the aim of the research was achieved. It was concluded that three car buyer groups statistically significantly differ on the basis of household monthly income, gender, education, number of cars owned, ownership of new or used cars, price preferences, country of origin preferences and involvement in car purchase.

The results of the research support the findings of other relevant papers, where differences among car buyer groups were found based on some relevant demographic and car buying factors. However, segments of car buyers in those papers were differentiated based on the car brand or car type they bought, while in this research the car buyer groups differ based on their region of residence. Car buyer groups differentiated on those bases proved to exhibit statistically significant differences that may prove to be important to marketing theory and practice. Marketing theory is advanced with the further understanding and identifying the differences among car buyers from Croatia. The relationship among variables that were not linked in other research was also investigated, i.e. demographic and some car buying characteristics to car buyer geographic characteristics (regions of Croatia they reside in).

The results of the research have some implications for car manufacturers and dealers when marketing a car in different regions of Republic of Croatia. Firstly, since most of Croatian car buyers are male and in the ages between 35 and 54, one should develop marketing strategies aiming at middle-aged men. However, when reaching car buyers in Eastern Croatia, one should attempt to develop strategies aimed at female consumers. Such strategies could include advertisements that represent female owners and drivers of cars, accentuating car features relevant to female buyers etc. Furthermore, when considering the differences among household monthly incomes of car buyers, one can advise marketing experts to intensify their efforts to advertise more expensive brands and models in Central Croatia, since car buyers from that region have a somewhat higher monthly household income at their disposal.

Most Croatian car buyers prefer buying cars from developed and European countries, therefore the manufacturers of cars originating from those countries could be advised to accentuate country of origin in their advertising campaigns. Furthermore, when making marketing strategies, they may prove to be more efficient if appealing to car price when advertising to car buyers from Eastern Croatia. On the other hand, such strategies might prove to be less efficient if implemented in Adriatic Croatia. Finally, when involvement in car purchase is concerned, marketing experts might be advised to encourage their salespeople to communicate more information about car features and build a relationship with prospective car buyers which would encourage further information exchange.

6. Conclusion

The conducted research has certain limitations. It was conducted on a sample of car buyers from Republic of Croatia, while future research might be conducted on more samples from different countries. In addition, respondents were divided into groups based on their place of residence, while future research might be conducted on car buyer groups based on their age, household monthly income, education level etc. Another limitation might be not investigating other aspects of car buying behaviour, such as importance of safety criteria, functionality features etc.

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THE IMPACT OF COOPERATION WITH FOREIGN INNOVATORS ON THE CONCENTRATION OF TECHNOLOGY IN CENTRAL AND EASTERN EUROPE

ABSTRACT

This paper analyses the relationship between the cooperation of domestic and foreign innovators and the level of technology concentration in the countries of Central and Eastern Europe in their post-transition period. In the early 1990s, new opportunities opened up for innovators from Central and Eastern Europe to cooperate with innovators from abroad, enabling the internationalization and transfer of knowledge and technology, and consequently their spread within the country. As the country's competitiveness depends on the growth of knowledge, and the growth of knowledge on technology and knowledge transfer, the paper assumes that the growth of knowledge concentration contributes to the growth of competitiveness of small open economies of Central and Eastern Europe in their post-transition period. The aim of this paper is to examine whether the cooperation of domestic and foreign innovators has influenced the growth of the concentration of knowledge and technology in certain technological fields. Regression panel analysis was conducted on a sample of 8 Central and Eastern European countries in the period from 1995 to 2018. The annual data of the OECD database were used in this paper. The level of concentration of land technology was calculated using the Herfindahl-Hirschman index based on data on the number of patents of 35 technology domains grouped into 6 technology fields. The results of the research show that cooperation with foreign innovators has a positive impact on the level of technology concentration. Therefore, the impact of international cooperation on the technology concentration of Central and Eastern European countries may lead to specialization and, consequently, to their growth in competitiveness. Future research should examine the differences between developed and transition countries, and take into account national aid and subsidy systems for each industry.

Keywords: *Concentration of technology, International cooperation, Patenting with foreign innovators, Central and Eastern Europe, Post-transition.*

1. Introduction

Innovation requires exploration of activities beyond existing technological knowledge boundaries (Laursen, 2012; Novaković et al, 2020). Complexity, cost intensity, product life-cycles reductions make innovation self-reliance strategy obsolete (Huxham & Vangen, 2013). Self-reliance innovation strategy failure, calls for opening organization borders in search for

collaboration partners (Chesbrough, 2006). According to OECD (2021) database, cross-country R&D collaboration grows exponentially, pointing towards a trend of global knowledge flows. Access to global knowledge could lead towards innovations growth. However, one has to be aware that knowledge from abroad might be country-specific, and, hence, technologically distant (Gilsing et al., 2008). Still, radical technological breakthrough ideas occur thanks to a recombination of this 'distant', heterogeneous and diversified technology portfolio. In spite of that, a deep understanding of knowledge results in homogeneous or concentrated portfolio. It is up to innovation strategy and consequently imposed policies, to direct concentration or diversification of technological portfolio. However, difficult task is put in the hands of policy-makers as intertwining relationships within institutional structure and national innovation ecosystem, enables numerous choices of optimal measures and innovation policies (Borrás & Edquist, 2013). Hence, the political and economic context for innovation strategy is of uttermost importance.

The importance of political and economic context was confirmed by Radosevic (1999; 2002; 2011; 2017; 2018) in his numerous researches on post-transition countries, specifically in the Central and Eastern European (CEE) context. The fall of planned economy caused institutional transformation and significant structural changes (Lengyel & Cadil, 2009). According to Radošević (1999), CEE countries' main concern in this process was the transformation of innovation system. Separating science and industrial sectors, planned-economy nurtured more research or science, than technology and innovation (Kriaucioniene & Ragauskas, 2008). Changing the amount and the structure of R&D expenditures, together with privatization of R&D companies, disrupted the inherited system structure (Lengyel & Cadil, 2009). This led to numerous challenges in building new innovation structure. Challenges became pronounced in cases of technology diffusion from advanced countries, when replacement of national R&D with foreign owned business R&D took place (Reinert & Kattel, 2004). Current literature agrees on the importance of emerging international R&D collaboration in the context of post-transition countries. However, to our knowledge, the noise between domestic (public and private) and international (business) R&D investors technology portfolio strategy in CEE countries, is not adequately addressed issue. The aim of this research is to study the cooperation of domestic and foreign innovators' influence on the concentration of knowledge and technology in certain technological fields in order to question whether the access to a variety of international knowledge lead an institutionally restructured country toward homogenic or heterogenic technological portfolio. Our findings indicate that knowledge flow from international collaboration, narrows down technological focus in CEE countries. This finding indicates a lack of absorptive capacity for variety of foreign knowledge in transition period, which focus on country-specific and often closed, differentiated technology. Regression panel analysis was conducted on a sample of 8 Central and Eastern European countries in the period from 1995 to 2018. The annual data of the OECD database were used in this paper. The level of concentration of land technology was calculated using the Herfindahl-Hirschman index based on data on the number of patents of 35 technology domains grouped into 6 technology fields.

The paper is organized as follows. The next section presents an overview of R&D international cooperation and technology concentration literature in post-transition countries. Afterwards it develops a research question. Methodology and results are presented in the subsequent section. The last section summarizes the conclusion of the study including contributions and limitations for further research.

2. Literature review

Current innovation trend is led with the postulate that an increasing number of qualified persons work outside of an organisation (Chesbrough, 2004), turning attention to a wide spectrum of collaboration modes as sources of knowledge production and means of knowledge exchange (Yamin & Otto, 2004). This type of knowledge sourcing is followed with partner search, negotiation and contracting costs (Van Beers & Zand, 2014). Furthermore, this way of R&D investment risk hedging, might capture organizations in closed network, keeping them from other potential collaboration opportunities (Gulati et al., 2000). Despite the importance of local collaborations, it is less likely they will lead further than incremental innovations (Picci, 2010). According to Moodysson & Jonsson (2007), significant breakthrough in generating radical innovations demands for collaboration to outgrow borders and go international. However, next to geographical distance, level of innovation complexity depends on technology distance (Chen et al, 2013). Acquisition of homogeneous or heterogeneous inputs, expands or narrows technology portfolio.

Specialization-diversification dilemma confirms to technology concentration and, hence, to country-capabilities, institutional structure and national innovation strategy (Kergroach, 2019). Herein, political and economic context play a significant role (Radosevic 1999; 2002; 2011; 2017; 2018). CEE countries have had similar innovation system heritage, built upon communist - planed system, characterized as less efficient than capitalist – liberal and competitive system. There are some successful planned economies, such as Singapore, often described as a "market-driven guided economy" (Abeysinghe, 2007). Singapore's distinctive nature makes its success difficult to be replicated to all economies undergoing transition from centrally planned economies. According to McMillan & Naughton (1992), state ownership, commitment to full employment, absence of effective bankruptcy procedure, are just some of characteristics which led toward institutional structure not compatible with market economy. Recognizing state ownership as a burden for global competitive game, CEE countries are still undergoing a transition to abandon centrally planned political and economic model. Complete abundance of fiscal, monetary, private ownership, and legal systems, waited for system transformation. Dichotomy of legacies and novelty, played a key role in transformation process (Radošević, 1999). According to Radošević (1999), CEE countries main concern in this process was the transformation of the socialist science and technology system, into diverse patterns of emerging system of innovation. Social equality and ownership system, created science and technology system not led to achieve profitability (Hanson & Pavitt, 1987). Technical changes were imposed by one or group of government institutional sectors. Strong hierarchical system structure, separated technology development from production, making enterprises technology creation capability underdeveloped (Radosevic & Yoruk, 2018), and resulting with systemic incompatibility and high transaction costs. Transition period suppressed hierarchical system structure, and institutional superiority, opening space for developments of new relationships among innovation actors. New innovation system reconstruction and integration of previously externalized engineering activities, has made private companies' main agents of industrial change (Radosevic, 1999). Vertical system structure had been becoming flatter, and links between actors multi-directional, allowing users to contribute to technology innovation process. Compared to China`s gradual and evolutionary institutional changes, CEE countries adopted an approach of quick transferrance to capitalism (e.g., Poland, Czech Republic, Slovakia) (McMillan & Naughton, 1992), characterized with significant changes in the amount and structure of R&D expenditures, as well as with privatization of state-owned industrial R&D institutes and large innovative companies by foreign MNCs (Kirankabeş & Erkul, 2019). Quick overtaking of innovation activities by corporate R&D networks, resulted with government's

innovation policy initiatives partly losing control over innovation system (Lengyel & Leydesdorff, 2007).

These changes in innovation system affect national innovation strategy, and potentially rebalance technology portfolio. According to our forthcoming research made on a sample of OECD countries, concentration or diversification of technology portfolio depends on a level of domestic partners absorptive capacity, i.e. capabilities of acquiring homogenous or heterogeneous knowledge. CEE countries technology base is advanced mainly by the technology transfer from more advanced countries during post-transition period (Kriaucioniene & Ragauskas, 2008). Hence, those countries developed strong absorption capacities for further inflow of international knowledge, given that absorption of knowledge is easier if a knowledge domain is closely related to its current knowledge base (Cohen & Levinthal, 1990). However, this positive effect on domestic partner absorptive capacity is mitigated with institutional and organizational distance, underdeveloped national innovation system, as well as public – business technology orientation mismatch.

These arguments posit a question whether variety of international knowledge sources/partners, in a context of post-transition period, leads CEE countries toward a more concentrated or diversified technological portfolio.

3. Methodology

This study uses OECD database for the period between 1995 and 2018 of 8 Central and Eastern European OECD countries. Although OECD countries comprise a more concentrated creators of fundamental knowledge (Guan & Chen, 2012) with the most international copatenting activities, and the majority of global R&D expenditure (OECD, 2010), Central and Eastern European countries experienced a transition from centrally planned to capitalist market system. This study aims to inspect whether the link between international co-patenting activities and technology concentration of 37 OECD countries is similar to those of the Central and Eastern European transition markets. Patents are the most significant innovation output indicator (Frietsch & Grupp, 2006). Patents are intellectual property rights permitting an inventor the right to exclude others from making, using or selling their invention for a set period of time, in most cases for the period of 20 years. Herfindahl index is a compound measure incorporating quantity and type of technological activity and is used to compute technology concentration (Chen, Jang, & Wen, 2010; Schmoch, 2008; Jindra, Lacasa, & Radosevic, 2015). OECD comprirses a list of patent applications per country in a given year based on 35 technology domains grouped in 6 technology fields. We used all 35 technology domains to calculate yearly Herfindahl index for the period 1995-2018. Similar to our previous paper on an OECD countries' sample, we calculated the shares of patents of specific technology domains in total patents. Hence, we calculated technology concentration using a Herfindahl index:

$$HHI = s1^2 + s2^2 + s3^2 + \cdots . + s35^2$$

S^n is a particular technology domain's percentage of patents in total patents. Higher HHI signals higher technology concentration in a specific field. International cooperation signals based on international co-patenting activities according to which at least one inventor is from a country different than the country in which a patent applicant or inventor resides (Carayol & Roux, 2007; Guan & Chen, 2012). Hence, we estimated international cooperation based on yearly international co-patenting activities for the period 1995 – 2018 per CEE country. Control

variables included: GDP and R&D expenditure, as larger the country's GDP and R&D, less concentrated technology portfolio.

4. Results

Data is obtained for the period between 1995 and 2018, and includes the eight (8) Central and Eastern European countries that are also OECD countries: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. This model is estimated using a log-log form. Descriptive statistics of the variables are present in Table 1.

Table 1: Descriptive statistics of variables

	LOG PCT SCOPE	LOG INT CO-PCT	LOG GDP	LOG R&D EXPENDITURE
Mean	-2.58	3,41	4.79	3.02
Median	-2.68	3.48	4.67	2.94
Maximum	-0.47	4.61	5.74	4.15
Minimum	-3.23	1.27	4.09	1.96
Std. Dev.	0.47	0.48	0.43	0.52
Skewness	1.54	-1.00	0.40	-0.01
Kurtosis	5.89	6.10	2.15	2.21
Jarque-Bera	139.85	106.58	10.68	4.91
Probability	0.00	0.00	0.00	0.09
Sum	-484.51	641.28	900.96	566.97
Sum Sq. Dev.	41.16	43.98	34.35	50.27
Observations	188	188	188	188

Source: OECD (2021). Authors' calculations

Table 2: Correlations of variables

	LOG PCT SCOPE	LOG INT CO-PCT	LOG GDP	LOG R&D EXPENDITURE
Log PCT scope	1			
Log Int Co-Pct	0.21	1		
Log GDP	-0.71	0.01	1	
Log R&D expenditure	-0.77	-0.10	0.94	1

Source: OECD (2021). Authors' calculations

Table 2 depicts the correlations among the variables in the model. High correlation, i.e., greater than 0.7 is shown between countries' GDP and R&D expenditure, while the greatest correlation coefficient of 0.94 is portrayed between GDP and R&D expenditure signalling its close relatedness.

Figure 1: PTC scope, international co-patenting activities, GDP and R&D expenditure of CEE countries in the period 1995-2018
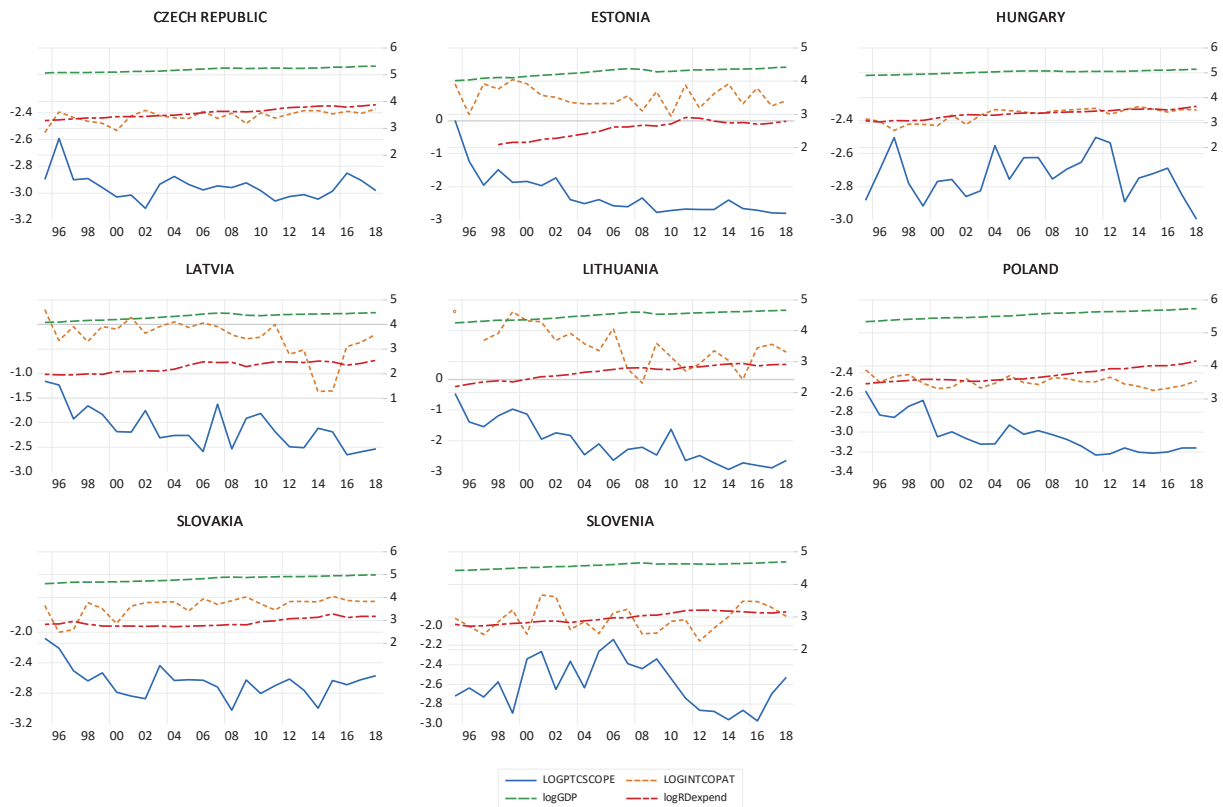
Source: OECD (2021). Authors' representation

Figure 1 presents logarithm of patent scope measurement scale on the left axis, and the remaining scale of logarithm of international co-patenting, GDP and R&D expenditure one the right axis. Correlation between R&D expenditure and GDP is evident in all eight CEE countries. The picture, however, differs when looking at the movements between patent scope measurement, i.e., the concentration of patents in a particular field presented with HHI and cooperation between domestic and foreign inventors. For the Czech Republic both concentration of patents and international co-patenting move simultaneously, while concentration tends to have higher variations than cooperation between domestic and foreign inventors. Similarity can be observed in Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. There seems to be a lag of several periods during which concentration of patents in a particular field precedes cooperation between domestic and foreign inventors. There is a smaller difference in the case of Slovenia in which these lags are smaller.

Similar to our previous study, a cross-country panel OLS regression model is presented in Equation 1.

$$\log y_{it} = \beta_1 + \beta_2 \log x_{it2} + \cdots + \beta_k \log x_{itk} + \varepsilon_{it}$$
$$i = 1,2 \dots N \qquad t = 1,2,\dots T \tag{1}$$

where y_i is a dependent variable, x_i is a independent variable, β_1 is a constant, β_2 is a regression coefficient, i, t are indices for individuals and time and ε is an error term. Assumptions of the model are error terms that are independently and identically distributed with expected value 0 and a constant variance.

Since similarly to the full OECD sample, Breusch-Pagan LM ($p < 0.05$) pointed out that we cannot reject the hypothesis that there is correlation between cross-sections, and heteroskedasticity and cross-sectional dependence could cause inconsistencies between the estimators obtained from panel analysis. Sarafidis and Wansbeek (2012) state that panel analysis when number of units (N) is smaller than units of time (T) cross-sectional dependence can occur. Cross-sectional dependence using the seemingly unrelated regression method (SUR) proposed by Zellner (1962) is to be used in the case when $T > N$ (Xu et al., 2016). Similarly, we estimated generalized least square (EGLS) with cross-section weights.

$$\log y_{it} = \beta_1 + \beta_i \log \mathbf{x}'_{it} + \varepsilon_{it}$$
$$i = 1,2 \dots N \qquad t = 1,2, \dots T \qquad (2)$$

where y_i is a dependent variable, x_i is a independent variable, β_1 is a constant or individual specific effect, β_2 is a $p \times 1$ vector of unknown coefficients, x_{it} is a $p \times 1$ vector of explanatory variables on the ith cross-sectional unit at time t, and ε is an error term. Generalized least squares estimator in which OLS is conducted to each individual – specific equation to obtain constant estimators $\{\beta_i\}_{i=1}^N$ used to compute the residuals $\{\widehat{e_{it}}\}_{1\leq i\leq N, 1\leq t\leq T}$ employed to estimate the covariance between units i and j using $\frac{1}{T}\sum_{t=1}^T \hat{e}_{it} \hat{e}_{jt}$ in the first stage, while the coefficient estimators are obtained using the generalised least squares with the inverse of the estimated covariance matrix as a weighting matrix in the second stage.

Results of the unbalance panel approximated seemingly unrelated regression with cross-section weights are given in Table 2.

Table 3: Cross-country panel regression for CEE, 1995-2018

Dependent variable	Log PCT SCOPE			
Indep. variable/Model				
Constant	-3.00***	0.68***	-0.97***	-0.82***
	(0.11)	(0.19)	(0.12)	(0.17)
log INT COPCT	0.12***	0.13***	0.07**	0.08**
	(0.03)	(0.04)	(0.03)	(0.03)
log GDP		-0.77***		-0.07
		(0.03)		(0.05)
log RD expenditure			-0.62***	-0.57***
			(0.02)	(0.05)
Adjusted R-squared	0.06	0.72	0.76	0.75
S.E. of regression	0.96	0.97	0.97	0.97
Prob. (F-statistic)	0.00	0.00	0.00	0.00
Mean dependent variable	-4.98	-10.78	-20.31	-20.39
S.D. dependent variable	5.92	12.75	11.85	12.01
Durbin -Watson	1.35	1.32	1.36	1.36
Observations	191	191	188	188

Note: Standard errors in parentheses. Statistical significance: *<0.10; **<0.05; ***<0.01.
Source: Authors' calculations

We accepted the hypothesis stating no correlation at conventional significance levels (cross-section dependence Breusch-Pagan LM test: $p > 0.05$). Table 2 shows that international co-patenting positively influences country's technology concentration at the 1% significance level. The effect is smaller when R&D expenditure is included in the model. The effect on technology concentration is negatively affected by both GDP and R&D expenditure.

5. Discussion and conclusion

CEE countries technology base is advanced mainly by the technology transfer from the more advanced countries (Kriaucioniene & Ragauskas, 2008). Also, OECD database indicates that majority of FDI inflow in CEE countries, during transition period and now as well, comes from the European Union member states. Furthermore, the same database indicates that CEE countries mostly collaborate with countries from the European Union. According to Cohen & Levinthal (1990) knowledge is easier to absorb if knowledge domain is closely related to its current knowledge base. That said, existing knowledge base in CEE countries, built over the years through FDI inflow from more advance countries, should be able easy to absorb knowledge from international collaboration. However, results of this study indicate a strong concentration of knowledge base in CEE countries. This implies there exists a possible lack of absorptive capacity. Explanation for this finding could be found in an underdevelopment of institutions that occurred during CEE transition period in the early 1990s. A growing importance of corporate, especially foreign, sector in national innovation system resulted with disruption of interlinkages between innovation actors during that time. Thus, positive effect on domestic partner absorptive capacity is mitigated with institutional and organizational distance, underdeveloped national innovation system, as well as public – business technology orientation mismatch result in a smaller effect of cooperation of domestic and foreign inventors from Central and Eastern Europe on the concentration of knowledge in a particular knowledge field.

Further research should link these findings with the value chain research between companies of CEE countries that are members of the European Union and inspect their dependence on the respective value chain activities of the respective European Union member states.

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A scientific paper

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THE (UN) SUSTAINABILITY SCENARIO OF THE PENSION INSURANCE SYSTEM IN THE REPUBLIC OF CROATIA

ABSTRACT

The pension insurance system is very important within the social security of each individual, i.e. the society in which it is located. Maintaining the stability of the pension insurance system today is one of the fundamental problems, both for Croatia and for other EU member states. The basic division of pension systems are into public pension systems of intergenerational solidarity, which finances from paid employee contributions and capitalized pension systems, and from contributions of insured persons capitalized in pension funds. Since each of the pension insurance financing models has its advantages and disadvantages, today the most commonly used mixes financing models in which there is a system with several pension pillars instead of one. The mixed pension financing system established in Croatia in after the 2002 pension reform uses three pillars of insurance. However, despite the reforms, today's pension insurance system in Croatia has significant difficulties in order for it to function effectively.

Since demographic and economic indicators and regulations governing the pension system mainly determine trends in the pension system, the aim of this paper is to present a scenario of pension insurance development in Croatia in the period from 2020 to 2070 based on available demographic, administrative and economic projection indicators. Within the developed scenario, the movements of individual pension insurance variables, that are important for the sustainability of the entire system are analysed. By noticing certain advantages and disadvantages in the development of pension insurance based on the developed scenario, they made proposals for the implementation of additional measures and activities within the system in order to improve the economic and social effects of pension insurance and enable its long-term sustainability. It uses a number of scientific research methods (methods of analysis, comparison, induction, deduction, description and classification, etc.) as well as individual statistical and mathematical methods used to analyse certain variables.

Keywords: *Pension system, Croatia, future development scenario, demographic and economic indicators, (un)sustainability.*

1. Introduction

The pension system is an essential element of the social security of each individual or society. This system is "a set of legal norms, financial and institutional arrangements governing old-age and disability risk insurance" (Puljiz, 2005, 171). Its financing is one of the fundamental factors that determine the living standard of every pensioner and their financial and social security. Therefore, the level of rights that exercises in the pension insurance system directly

depends on the possibilities of its financing, i.e. on its sources of funds. Since the pension, system provides the most significant social risks that can happen to everyone, the importance of its stability is of great importance for the population of a country (Vretenar Cobović; Cobović, 2016, 841). In addition, this system is necessary for the balanced functioning of society as a whole and the maintenance of its social cohesion, i.e. the connection of individuals and groups within society as a whole.

2. Development and importance of the pension insurance system - literature review

The first forms of pension insurance based in Croatia were on informal forms of so-called old-age insurance whose holders were agricultural home cooperatives. The foundation for the creation of family home cooperatives began with the founding of the Posavina region in 1702 in Slavonia (Puljiz, 2008, 73). The development of formal forms of the pension system in our area is noticeable in the pensions of soldiers and civil servants and fraternal coffers created in the 19th century. According to Puljiz (2008) legislation of this system was introduced in 1922 in Yugoslavia when the Law on Workers' Insurance was adopted, which regulated workers' pension insurance. Other forms of social insurance systematically introduced that were after the Second World War and the decentralization of the pension system gradually carried out. The crisis of the pension system, which was present at the end of the socialist period, deepened after the acquisition of Croatian independence and during the Homeland War. That is why the reform of the Croatian pension insurance system began in the late 1990s, which completed in 2002.

Since the reform of the pension system implies in part the replacement of the inter-generational solidarity system with a capitalized system, it is important to determine in which circumstances the capitalized system makes a positive difference in relation to the existing inter-generational system. Number of authors who challenge one system over another and vice versa. Thus, Johnson, Conrad, and Thompson (1989) point out that goods and services consumed by pensioners are part of the current output of the currently employed population regardless of whether retirees receive a state pension from taxes collected or support themselves through their own savings. In addition, Brittan (1996) points out that workers pay taxes and contributions to pay pensions insured and that all pensions are from current national income. Blake (1996) argues that all pension systems capitalized or not, are inter-generational systems where new generations work for previous. Bohn (2001) argues that in designing pension reform, it is important how the overall risks shares it between the working age population and retirees. Optimal pension policy should implement reforms that share financial risks in the most equitable way between generations. Barr (2002) emphasizes the importance of differentiating the risk of insecurity in the pension system, meaning, while risk quantifies, it is impossible to continue with uncertainty. He singles out three uncertainties - macroeconomic shocks, demographic shocks and political uncertainty, and three risks (management risk, investment risk, market risk) that threaten the pension system. Furthermore, Barr (2005) believes that the introduction of a mandatory capitalized system implies a sufficiently developed financial market, sufficient public and private administrative capacity and supervision, and the existence of a strategy on fiscally sustainable transition costs. Jackson (2009) points out that at the macro level, a capitalized system first help reduce the long-term fiscal burden of an aging population and helps maintain an adequate level of savings and investment for the future. If the inter-generational and capitalized systems viewed as a mechanism for the transfer of funds between retirees and other age groups, then the question would arise as to what their primary interest is. The primary point of interest for both systems secured pension rights, and only then in the second place how they are funded (Kune, 2006, 5).

However, precisely because of the crisis of public pension systems, based on inter-generational solidarity, Croatia has carried out significant reforms of this system in an effort to adapt to changing economic and social conditions. The causes of the crisis in pension systems were multiple, but it is most common cause was an increase in the share of elderly people in the total population and a decline in the birth rate, which led to a generational imbalance. In addition to demographic changes in Croatia, the crisis in the pension system significantly affected increased unemployment and changes in the structure of work. The consequence was a reduced inflow of funds from the contributions of insured persons and an increasing deficit in pension funds, which state financed. Due to the difficult state of the Croatian pension system, preparations for Croatia's pension reform began in the mid-1990s, with the World Bank playing a key role transferring the proposing pension system in which the burden of financing pension transfers to insured, therefore to reduce the cost pressure of pension funds on public finances, 2007, 180).

According to Puljiz (2008) in the first pension reform, which began in early 1999, the aim was to streamline and make sustainable the existing inter-generational solidarity pension system. They carried out the so-called parametric pension reform, in accordance with the Pension Insurance Act of 1998, by which Croatia sought to reduce pension costs and adjust them to economic opportunities. The changes made in the Croatian pension system soon contributed to better financial sustainability of the pension system. However, despite the positive trends, the parametric pension reform also led to a relative decline in the pensions of retired insured persons after 1999, which required additional reforms of the entire pension insurance system in our country. After the first, in 2002, the second pension insurance reform was implemented, which constructed the second and third pension pillars and established a system of defined contributions and capitalized pension savings, which should contribute to increasing domestic savings, strengthening capital markets and overall economic growth. This reform brought a significant change in the structure of the pension system, which still applies today.

In accordance with the implemented reforms, today's pension system of our country bases on a mixed financing model in which instead of one there is a system with several pension pillars. The first pillar is mandatory pension insurance based on intergenerational solidarity, and contributions finances from insured persons, which employers pay at a rate of 15% of the employee's gross salary. Pension insurance within the second pillar is mandatory for insured persons who they insured under the Pension Insurance Act, and the holders of this insurance are mandatory pension funds. The contribution rate paid into mandatory pension funds is 5% of the gross salary of the insured. Accordingly, insured persons who were under the age of 40 in 2002 and insured in both pillars of pension insurance, allocate 15% of contributions for the first pillar and 5% of contributions for the second pillar of pension insurance. The third pillar of pension insurance in Croatia is voluntary pension insurance based on individual capitalized savings provided by voluntary pension funds. In the third pillar of insurance, those insured participate who want additionally to insure against the risk of old age, disability and death.

In accordance with previous research, the aim of this paper is to present a scenario for the development of pension insurance in Croatia in the period from 2020 to 2070, made based on available projections for the development of demographic, administrative and economic indicators. Within the developed scenario, the movements of individual pension insurance variables important for the sustainability of the entire system will be analysed.

In accordance to the subject of research and the goals set, the paper starts from the following hypotheses:

H1 Employment rate and real gross wage growth rate significantly affect developments in the pension insurance system, while capitalized pension pillars additionally affects from real pension fund returns.

H2 In order to eliminate the negative trends of individual variables within the pension insurance system, it is necessary to upgrade them and develop a new model of financing the pension insurance system.

3. Scenario of future development of pension insurance in the Republic of Croatia - research methodology

Projections of demographic, administrative and economic trends made by competent international and domestic institutions (World Bank, International Labour Organization, Central Bureau of Statistics of the Republic of Croatia, Ministry of Finance of the Republic of Croatia, Croatian Chamber of Commerce and others) used in the development of the future scenario of pension insurance development were in Croatia.

Projections of demographic trends that is important for the development of macroeconomic policies of each country, i.e. the number and composition of the population according to different demographic and economic characteristics is a determinant of current and future social and socio-economic development. Demographic aging of the population (increase in the share of the population aged 65 and over in the total population) is a fundamental demographic indicator that has characterized the population of Croatia in the last few decades. Based on the above, it is possible to conclude that the current negative demographic trends will adversely affect future trends in the pension system, which is significantly dependent on these indicators.

Projections of the total population in Croatia classified by age groups shows in Table 1.

Table 1: Population of Croatia by age groups

Year	Population by age (in thousands)				Population by age (in %)			
	Total	0-14	15-64	65 and over	Total	0-14	15-64	65 and over
2020	4,425,7	674,9	2,984,9	765,9	100	15.3	67.4	17.3
2030	4,357,3	654,7	2,814,6	888,0	100	15.0	64.6	20.4
2040	4,254,9	606,8	2,639,8	1,008,4	100	14.3	62.0	23.7
2050	4,129,4	557,9	2,506,9	1,064,6	100	13.5	60.7	25.8
2060	3,989,2	545,6	2,317,8	1,125,8	100	13.7	58.1	28.2
2070	3,848,8	518,7	2,199,4	1,130,7	100	13.5	57.1	29.4

Source: Central Bureau of Statistics of the Republic of Croatia, Eurostat

The development of the Croatian pension system in the next 50 years will be significantly affected by the reduction of the total population, especially the reduction of the population aged 0 to 14 and 15 to 64, and the increase of the retirement population, more precisely the population aged 65 and over.

Within the administrative projections, an important strategic document published by the European Commission in 2012 (White paper, An Agenda for Adequate, Safe and Sustainable

Pensions, European Commission, Brussels, 2012), which encourages EU member states to constantly increasing the legal limit for retirement.
According to this document, by 2060, this limit should increase by five to seven years, due to the expected extension of human life expectancy.

Within the economic trends according to the projections of the World Bank, the European Bank for Reconstruction and Development, the Ministry of Finance of the Republic of Croatia and the Croatian Chamber of Commerce, economic activity expect to revive in Europe and Croatia in the next twenty years. In the coming years, the annual real growth rate of gross wages expects to reach 3% (World Bank, Croatian Chamber of Commerce).
The real growth rate of gross wages will have a slightly slower growth than the growth of gross domestic product or productivity and after some time the growth of wages should move in line with GDP growth, whose annual real growth rate also expects to range up to 3%. In addition, it is possible to expect real annual returns of mandatory pension funds from 3% to 4%, and real returns of voluntary pension funds up to 1.5%, which will certainly have a positive effect on the overall level of pensions (Economic and Fiscal Policy Guidelines, Ministry of Finance of Croatia, 2019).

In order to be able to present the scenario of the most important variables of the sustainability of the pension insurance system in Croatia from 2020 to 2070, it is necessary to define the initial assumptions.
In accordance with the above projections, the demographic assumptions of the scenario of pension insurance development are as follows:
1) The total population in Croatia in 2020 is 4,425,747 inhabitants. The structure of the population by age groups is as follows (0 - 14 years 15.3%; 15 - 64 years 67.4%; 65 years and older 17.3%).
2) The total number of inhabitants in Croatia in 2070 is 3,848,800 inhabitants. The structure of the population by age groups in 2070 is as follows (0 - 14 years 13.5%; 15 - 64 years 57.1%; 65 years and older 29.4%).
3) Life expectancy increases by two years every ten years within the observed period (according to the recommendations of White paper, An Agenda for Adequate, Safe and Sustainable Pensions, European Commission, Brussels, 2012.).

The administrative assumptions of the pension insurance development scenario are:
1) The age limit for retirement in 2060 increases to 72 years of age. In the period from 2020 to 2060, every 6 years the retirement age increases by one year.
2) All other pension regulations valid in 2020 shall apply until the end of the observed period.

The economic assumptions of the pension insurance development scenario are:
1) In the period from 2020 to 2070, the real growth rate of gross wages is 3% per year.
2) In the period from 2020 to 2070, the real growth of gross domestic product is 3% per year.
3) The percentage of the employed population aged 15 to 64 (the share of employed persons in the working age population) is gradually increasing from 42.41% in 2020 to 48.51% in 2030. From 2030, the percentage of the employed population will gradually decrease to 45.94% in 2070, in accordance with the forecast of economic trends (World Bank, Croatian Chamber of Commerce).
4) In the period from 2020 to 2030, the real return of mandatory pension funds is 3% per year, and after 2030 4% per year, while the real annual return of voluntary pension funds in the period from 2020 to 2070 is 1.5%.

The following mathematical formulas, researcher used to calculate pension insurance variables important for its sustainability:

The calculation of the working age population is obtained by adding to the population aged 15 to 64 a certain percentage of the population aged 65 and over, because in accordance with the administrative assumptions in the period from 2020 to 2060 every 6 the age limit for retirement increases by one year. Based on this, the number of inhabitants aged 65 and over it actually becomes the population aged 15 to 64, i.e. the working age population in accordance with administrative assumptions (Working age population = population aged 15-64 + working age population aged 65 and over). Also as an example, (work age population aged 65 and over derives from the number of years and the percentage taken according to the administrative assumption).

The calculation of the working population was obtained on the assumption that 61% of the working age population is the working active population (Working active population = working age population x 0.61). This percentage accepted an assumption based on the ratio of the working and working age population in the period from 2010 to 2020. In this period, based on data from the Central Bureau of Statistics of the Republic of Croatia, the average share of the working population in relation to the working age was 61%.

The number of insured persons is calculated by multiplying the number of persons in employment and the employment rate (Number of insured persons = working population x employment rate).

The number of pensioners calculates it by multiplying the number of insured persons. The pensioner-insured ratio (the ratio expressed by the ratio of the number of pensioners to the number of insured persons according to previous years). The percentage change in population growth of 65 and over 65 and older conditioned by the administrative presumption of increasing the retirement age (Number of pensioners = number of insured persons x (ratio of the number of pensioners to insured persons based on previous years). Therefore, x (percentage change in population growth of 65 and more compared to the previous year) x (percentage changes in the working age population aged 65 and over conditioned by the administrative assumption).

The calculation of the amount of the monthly pension from the first pillar of insurance was obtained by dividing the total annual amount of paid contributions within the first pension pillar by the number of pensioners, and by 12 months (Amount of monthly pension from the first pension pillar = (annual amount of paid contributions / number of pensioners) / 12).

The calculation of the amount of monthly pension from the second pillar of insurance obtained it by dividing the total annual amount of paid contributions within the second pension pillar. Furthermore, it increased by the realized return of mandatory pension funds with the number of pensioners, and with 12 months (Amount of monthly pension from second pension pillar = (annual amount of paid contributions increased by the realized yield of MPFs / number of pensioners) / 12).

The calculation of the amount of annual payments in the first pillar for one insured person is obtained by multiplying the monthly amount of paid contributions within the first pension pillar (allocation of the contribution rate of 15% from the gross salary of the insured) with 12 months (Monthly payment in the first pillar for one insured x 12 months).

The calculation of the amount of total annual contributions to the first pension pillar is obtained by multiplying the annual amount of paid contributions within the first pension pillar for one insured person with the total number of insured persons (Total annual payment in the first pillar = annual payment of pension contributions x total number of insured persons). In this calculation, it should note that the contribution collection rate assumes 85%, in

accordance with the current contribution collection for the first pension pillar in Croatia (according to the Croatian Pension Insurance Institute).

The calculation of the amount of expenditures for pensions of the first pension pillar was obtained by increasing the expenditures for pensions of the previous year for the assumed salary growth in accordance with economic assumptions (Expenditures for pensions of the first pillar = pension expenditures of the previous year x percentage of salary growth).

The calculation of the amount of expenditures for pensions of the second pension pillar was obtained by multiplying the annual expenditures for pensions per beneficiary and the total number of beneficiaries of the second pension pillar (Expenditures for pensions of the second pillar = pension expenditures per beneficiary x number of beneficiaries).

The calculation of the amount of mandatory pension funds 'assets obtained it by increasing the amount of pension funds' assets in the previous year for the total annual payment of pension contributions to the second insurance pillar. It increased by the realized mandatory pension fund yield and decreasing the annual amount of second pillar pension expenditures (Assets of pension funds = assets of MPFs of the previous year + total annual payment of pension contributions to funds increased by the realized return of MPFs - expenditures for pensions of the second pillar of insurance).

The calculation of the amount of pension insurance company assets obtained it by increasing the amount of pension insurance company assets of the previous year by the annual amount of expenditures for second pillar insurance pensions. Therefore, upon retirement pension fund assets are transferred to the pension insurance company (Assets of the pension insurance company = assets of the PICs of the previous year + expenses for pensions of the second pillar of insurance).

4. Research results and discussions

Because of the research, the following is an overview of the scenario of the most important variables of the sustainability of the pension insurance system in Croatia from 2020 to 2070.

Table 2 shows the working age and working active population and the number of insured persons and pensioners in the period from 2020 to 2070, calculated based on pre-set assumptions.

Table 2: Number of insured persons and pensioners (in thousands)

Year	Working age population	Working active population	Number of insured persons	Number of pensioners	Ratio insured persons/ pensioners
2020	2,883	1,758	1,477	1,293	1.14
2030	2,839 ↘	1,732 ↘	1,490 ↗	1,301 ↗	1.15
2040	2,809 ↘	1,714 ↘	1,559 ↗	1,355 ↗	1.15
2050	2,835 ↗	1,729 ↗	1,530 ↘	1,310 ↘	1.17
2060	2,822 ↘	1,722 ↘	1,481 ↘	1,266 ↘	1.17
2070	2,864 ↗	1,747 ↗	1,459 ↘	1,234 ↘	1.18

Source: author's calculation based on defined assumptions of the pension insurance development scenario

In contrast to the number of workable and working-age population, the number of insured persons will gradually increase from the current 1,477,000 insured persons to 1,559,000 insured persons in 2040.

After 2040, due to the retirement of persons born before 1970, and the entry into the working contingent of a smaller population aged 15 to 64 in accordance with demographic assumptions, the number of employees and the number of insured persons will decrease. The trend of reducing the number of insured persons will continue until 2060 (to 1,481,000 insured persons), but also after that, but with a lower intensity of reduction. Similar trends expect for the future number of pensioners in the Croatian pension system, in accordance with the assumptions of the scenario of pension insurance development. After 2020, the number of retirees will increase significantly due to the fulfilment of the conditions for the old-age pension of more generations born in the fifties and sixties (in 2030, the number of retirees would be 1,301,000). This trend will continue until 2040, after which the number of new retirees will decrease, as fewer generations born in the 1970s will retire. The downward trend will continue until the end of the observed period (the expected number of retirees in 2070 would be 1,234,000).

Based on the above, it is possible to conclude that the number of pensioners will increase in the next twenty years, but with less intensity than in the previous period. Accordingly, if the economic trends assumed in the pension insurance development scenario realizes it in the coming period, the sustainability of the pension insurance system is not in question, although the ratio of insured persons to pensioners in the period from 2020 to 2070 will have slight growth trends despite growing economic activity.

Table 3 shows the future amount of the monthly pension in both insurance pillars in the period from 2020 to 2070.

Table 3: Amount of monthly pension (in HRK)

Year	The amount of pension from the first pillar	The amount of pension from the second pillar	In total
2020	1,321	531	1,852
2030	1,509 ↗	615 ↗	2,124
2040	2,127 ↗	862 ↗	2,989
2050	2,114 ↘	1,255 ↗	3,369
2060	2,111 ↘	1,731 ↗	3,842
2070	1,987 ↘	2,008 ↗	3,995

Source: author's calculation based on defined assumptions of the pension insurance development scenario

For insured persons insured within both pillars of pension insurance from the first part for each subsequent generation, there will be less and less dependence on the level of salaries of insured persons and solidarity and redistribution from higher insured persons to lower paid insured persons. In accordance with the presented calculation in the table, pensions from the first pillar will decrease after 2040, while in accordance with the projected growth of salaries and growth of the real return of pension funds, pensions from the second pillar will have a constant growth. However, the intensity of growth will not be great.

Table 4 shows the scenario of total paid annual contributions and paid annual contributions per insured person within the three pillars of insurance in the period from 2020 to 2070.

Table 4: Amount of total annual paid contributions within the three pillars of pension insurance (in millions of HRK)

Year	I pillar (per person per year in HRK)	I pillar (total annual payment in millions of HRK)	II pillar (annually per person in HRK)	II pillar (total annual payment in millions of HRK)	III pillar (per person per year in HRK)	III pillar (total annual payment in millions of HRK)
2020	16,210	20,353	5,403	7,981	2,702	616
2030	18,602	23,553 ↗	6,201	9,236 ↗	3,100	797 ↗
2040	26,240	34,780 ↗	8,747	13,639 ↗	4,373	1.489 ↗
2050	20,336	27,145 ↘	12,338	16,881 ↗	4,169	1.111 ↘
2060	17,875	21,158 ↘	15,404	20,766 ↗	4,702	1.591 ↗
2070	13,777	19,330 ↘	21,550	27,816 ↗	5,275	2.367 ↗

Source: author's calculation based on defined assumptions of the pension insurance development scenario

Based on defined demographic, administrative and economic assumptions within the scenario of pension insurance development, and especially due to the increase in the employment rate and growth of gross wages, it is possible to expect a growth trend of total paid contributions to the second and third insurance pillars. Although, the intensity of growth as well as within pensions is not that significant. Paid contributions to the first pillar of pension insurance will increase until 2040, after which it will record a downward trend due to the reduced number of insured persons.

Table 5 shows the scenario of pension expenditures and their share in GDP in the period from 2020 to 2070.

Table 5: Amount of pension expenditures and their share in GDP (in millions of HRK)

Year	Gross domestic product	Expenses for pensions for the I pillar of insurance	Share in GDP (%)	Expenses for pensions for the II pillar of insurance	Share in GDP (%)
2020	429,812	43,013	10.01	693	0.16
2030	688,144	64,995 ↗	9.45	3,999 ↗	0.58
2040	1,018,621	91,682 ↗	9.00	8,753 ↗	0.86
2050	1,507,807	129,327 ↗	8.58	16,345 ↗	1.08
2060	1,907,857	158,976 ↗	8.33	19,703 ↗	1.03
2070	2,231,923	182,429 ↗	8.17	22.,63 ↗	1.01

Source: author's calculation based on defined assumptions of the pension insurance development scenario

Future pension expenditures of the Croatian pension system will mostly depend on the number of pensioners and the share of the average pension in the average net salary, while the share of pension expenditures in gross domestic product will depend on the level of GDP growth relative to wage growth. Within the observed period, pension expenditures will have a constant growth trend in both pillars of insurance. In the conditions of real wage growth, and a decrease in the number of pensioners after 2040, the share of the average pension in the average salary within the first pillar of insurance will increase.

However, unlike the first pillar, within capitalized savings there will be a more intensive increase in pension expenditures, after 2050 conditioned by an increase in the number of pensioners within the second pillar.

Table 6 shows the future value of the assets of mandatory pension funds and the assets of the pension insurance company in Croatia.

Table 6: *Assets of mandatory pension funds and pension insurance company (in millions of HRK)*

Year	Gross domestic product	Pension fund assets	Share in GDP (%)	Assets of a pension insurance company	Share in GDP (%)
2020	429,812	97,614	22.71	2,511	0.58
2030	688,144	209,933 ↗	30.51	31,431 ↗	4.57
2040	1,018,621	317,520 ↗	31.17	97,757 ↗	9.60
2050	1,507,807	425,569 ↗	28.22	228,305 ↗	15.14
2060	1,907,857	499,275 ↗	26.17	339,179 ↗	17.78
2070	2,231,923	557,214 ↗	24.97	426,182 ↗	19.09

Source: author's calculation based on defined assumptions of the pension insurance development scenario

The assets of mandatory pension funds in Croatia will have a constant growth trend based on the increase in paid contributions, a real increase in salaries and based on expected real returns on investments of fund assets. The assets value of mandatory pension funds will have a higher growth intensity until 2040, after which the growth rate of the assets of these funds will be lower, because an increasing number of insured persons. Persons will be entitled to a pension and their pension savings will be transferred from pension funds to pension insurance company / companies (if there are more than one) that will pay pensions.
In the period from 2040 to 2060, the assets of the pension insurance company will grow significantly, and after 2060, the growth trend of the assets of this company will continue, but at a slower intensity than in the previous period.

Based on the presented scenario of the development of the pension insurance system in Croatia in the period from 2020 to 2070, based on set demographic, administrative and economic assumptions, it is possible to draw certain conclusions. The analysed variables of sustainability of the pension insurance system (future number of insured persons, number of pensioners, pension amount, pension income and expenses and pension fund assets) show mostly positive developments within the capitalized second and third pillar pension insurance, which can be expected. By ranking these indicators, it is possible to see that the employment rate and the real gross wage rate significantly affect the developments in this system, while the capitalized pension pillars additionally affect it by the real returns of pension funds. The employment rate and the growth of the real gross wage rate affect the contributions in all three pillars of insurance, while the increase in the yield of mandatory pension funds also affects the assets of the funds.
If they meet set demographic, administrative and economic assumptions, the growth of the number of insured persons, the growth of the expected amount of paid contributions, the growth of pensions and the growth of pension fund assets within the second pillar of insurance will surely result in the sustainability of capitalized savings. In addition, it will result in greater impact overall pension insurance system, which shows the negative movements of certain researched variables. In addition, the expected increase in the number

of insured persons and contributions paid within the third (voluntary pillar of insurance) will increase the long-term sustainability of this system and create additional security for future pensioners.

5. Conclusion

The stability and sustainability of the pension system is one of the fundamental problems in Croatia. Based on the analysed scenario of the development of the pension insurance system in Croatia in the period from 2020 to 2070, under the assumptions of demographic, administrative and economic indicators, it is possible to observe positive and negative trends of certain variables important for the sustainability of this system. Primarily, unfavourable demographic trends will significantly affect future trends in the pension system even in the event of an increase in economic activity. The decrease in the working population will affect the decrease in the number of insured persons after 2040, which will result in lower contributions and lower pensions than expected, especially within the first pillar of insurance. However, in addition to the above, it should note that there were certain limitations during the research. They relate primarily to various data (number of pensioners, amount of average pension, contributions to the first and second pension pillars) that are available through the official websites of the Croatian Pension Insurance Institute, the Central Register of Insured Persons and the Central Bureau of Statistics of the Republic of Croatia. Those websites significantly hampered individual calculations in the scenario of the pension system development.

In order to at least partially eliminate the negative trends of individual variables within the presented scenario of future development of pension insurance, it is necessary to upgrade them and develop a new model of financing the pension insurance system. When assuming that the growth of economic activity in the variables within the second and third pillars of pension insurance showed positive trends, it is necessary to further encourage them. In addition to economic ones, it is necessary to take into account the influence of non-economic factors (stakeholder attitudes) on the pension insurance system. About expressing their trust in the system and investing in voluntary pension funds, it is safe to say that they are not sufficient in Croatia.

The new savings models will make it possible to influence the additional collection of pension contributions, namely, the amount and length of issuance in pension funds, the successful management in pension funds and at the same time greater trust of the users of the entire pension insurance system. All of these are suggestions for future research that can significantly contribute to the development of the pension system in Croatia. In this way, the development of a new model of a sustainable pension insurance system should enable greater fairness in terms of invested funds in relation to the final amount of pension after the legally acquired retirement conditions and at the same time the balanced development of society as a whole.

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THE MEASUREMENT OF FINANCIAL EFFICIENCY IN TERMS OF DEBT IN MEAT SECTOR. THE CASE OF POLAND.

ABSTRACT

The issue of efficiency of food processing enterprises is ever-present because of the continuous process of improving the quality standards of raw materials, complying with the procedures in food production, introduction of modern production technology and, above all, due to the large number of actors who are competing for customers in the domestic and foreign food market.

In the coming years Polish food processing sector will be facing significant challenges with the inevitable slow and gradual decrease in the cost advantages of raw materials' prices, as well as ready to eat products. Enterprises, as they constitute the majority in manufacturing business, in the long run will need to determine the efficiency, and hence competitiveness of Polish food processing sector.

The aim of the paper is to review literature in terms of classification and systematization of the concept of financial efficiency in terms of debt in the meat sector in Poland. In the theoretical part of the study methods of descriptive, comparative, deductive and synthetic analysis are used. In the practical part of the study the indicator analysis and panel data model using data from the whole meat sector are applied. It is worth highlighting that the study results' are representative.

Keywords: *efficiency, effectivity, financial efficiency, debt, meat sector, Poland.*

1. Introduction

Food economy is one of the most important sectors of economy in every country because of its significance for production and employment, but above all, in connection with the supply of

food to the society. Food economy is a collection of many different economic systems that influence organizational structure, methods of operation and financial performance of the production chain actors. Entities in the food processing sector operate in an environment with high exposure to the risk of business activity (Zielińska-Chmielewska, A., Alihodzić, A., Smutka, L., 2020, p. 540)

Food processing enterprises strive for continuous and steady supply of raw materials to carry out production which would correspond to the changing needs and preferences of the consumer. One of the main obstacles for food processing enterprises is the difficulty of obtaining stable and predictable income which would guarantee the continuation of production and remaining a going concern. What is characteristic and typical for agriculture and agro-food industry, is the fact that prices of raw materials fluctuate all-year round but retail prices of finished products remain relatively rigid. All of the above strongly affect the efficiency of the agribusiness operators in the market. In Polish food processing enterprises occurs concentration and integration between entities in the production chains, which has accelerated after Poland's accession to the European Union. Existing foreign publications in this field based on decades-old experiments confirm the need for conducting multi-step quantitative and qualitative research, in which systematic identification and evaluation of the financial efficiency of food processing enterprises can be made. On the basis of theoretical analysis and empirical results of previous studies, one hypothesis (H_1) was formulated: financial efficiency in terms of debt differentiates the examined groups of meat industry enterprises.

Developing research on the efficiency of food processing enterprises is extremely needed and constitutes a useful tool for policy makers on the food market in terms of obtaining information about the validity of its operations, the need to make the necessary modifications, eliminating the potential risk of operation, and minimizing the risk of bankruptcy and liquidation (Zielińska-Chmielewska, A., Alihodzić, A., Smutka, L., 2019, p. 1087).

The paper consists of 5 sections: *Introduction*, which defines the problem, subject matter and puts forward the hypothesis of the research, *Discussion on the classification of efficiency measurement in the economic studies* defines efficiency referring to current knowledge based on the relevant results of recent research, presentation of *Methodology, empirical data and analysis*, *Results and discussion on the assessment of financial efficiency* focused on explaining its economic significance, and *Conclusions* supplemented by verification of the hypothesis, assessment of research results, attention to limitations of the research. In the last section of the article *References* are listed.

2. Classification of efficiency in the economic studies. Concept of financial efficiency, advantages vs. disadvantages of parametric approach

In this part of the article a literature review was carried out. In the first instance, a comparison of efficiency and effectivity concept, methods of measuring it, advantages and disadvantages of its use, were done. In the paper method of analysis and reasoning, and in particular methods of descriptive, comparative, deductive and synthetic analysis were applied. The results of the analyses are based on the results of authors own research and studies.

Economic efficiency is the primary valuation standard in economics (Wilkin, 1997, p. 25). It should be distinguished from the English-language word effectiveness, often translated into Polish as *skuteczność*, meaning that a desired effect was eventually achieved by more or less effective method. Effective operation does not mean that it was at the same time efficient. For

the process to be efficient and effective, goals must be properly planned, and the results have to have higher value than costs.

Table 1: Comparison of economic processes according to the criterion of efficiency and effectiveness

The economic process	Efficient	Inefficient
Effective	Planned economic objectives of the process are achieved, and the final results are of a higher value than expenditures set for the planned economic objectives	Planned economic objectives of the process are achieved, but the final results are of a lower value than incurred expenditures
Ineffective	Planned goals of the economic process are achieved, but a value of final results is lower than incurred expenditures	Planned economic objectives of the process are not attained, and a value of final results is lower than incurred expenditures

Source: own preparation based on: Nowosielski, 2008, The efficiency and effectiveness of business processes

In the systemic approach efficiency is the ability of a company to shape its environment, so that it becomes favorable, along with the ability to overcome any obstacles. From this perspective, businesses are open systems that try to optimize the processes of acquisition and use of scarce resources from the environment. In this way, they are able to gain or maintain a competitive position (http://www.gsu.edu/images/HR/HRI-high-performance07.pdf). Therefore, effectivity is the ability to overcome the uncertainty surrounding the company. The essence of effectivity is incurred expenditures, transformation processes and final results. Evaluation of effectiveness involves identifying the ability to obtain resources, and then determining the extent of their use.

Efficiency includes economic, technical and non-economic efficiency (Chavan, 2009). The economic efficiency can be viewed from two independent perspectives: financial and productivity-related (Carlaftis, 2004). Non-economic efficiency includes organizational, operational and dynamic efficiency (Huerta de Soto, 2009). Economic efficiency is the ratio of the obtained result to inputs (Charnes, Cooper, Rhodes, 1978). According to the principle of rational economy, it means that certain results should be achieved at the lowest expenditures (costs) possible, or the best possible result should be obtained with a given quantity of inputs (costs) (Clark, 1907). The higher the efficiency is, the greater result per unit of effort is. Efficiency is applied both in assessing the effects which are quantitative nature (as a ratio of the effects to expenditures) and qualitative (as the ability to achieve the desired effect). Methods commonly used for assessing overall efficiency are based on three approaches: relying on ratio, parameters and non-parameters. Since this article presents analysis and evaluation of financial efficiency by means of ratios.

Table 2: Presentation of advantages and disadvantages of financial methods

Advantages	Disadvantages
Simplicity of measurement and universality of application by sector, national and global economy.	No indication of the causes of the adverse events.
Wide comparability of results over time and space.	Static, meaning that the data presented relate to a given period, e.g. the end of a reporting year, which makes it difficult to take into account the different dimensions of the enterprise's activities.
Universality of the created indicators and their groups.	Difficulty in accessing full periodic time series.
Lack of rigid frames in indicator design.	The construction of the indicators is based on two, three, maximum four variables, which are the basis for the analyses. Thus, the strength and weight of their significance is incomparably high in relation to the value presented by individual financial data.
Identification and evaluation of the most important areas of business activity.	Distortions of comparability and limitations of economic data. The sources of distortions and/or limitations of comparability of indicators are: methodological[1], financial (price)[2], material (subject)[3] and organizational changes[4] (Waśniewski, Skoczylas, 2004; Zarzecki, 1998).
Obtain information on the need for changes in the areas of activity concerned.	The content of the financial statements, profit and loss accounts and cash flows is derived from the entity's accounting policies. Adequate accuracy and adequacy of data in the statements is not possible due to a number of circumstances and conditions, the interpretation of which gives the company the chance of a favorable classification.
Evaluation of the results obtained, enabling the establishment of an early warning system for the risk of business failure.	The financial statements shall be based on historical costs, not taking into account the impact and effects of inflation.
	The net profit expressed in the report is not an absolute value but a relative category depending on the accounting procedures adopted.
	The accounts reflect the financial accounting system adopted by the company without necessarily presenting its 'true' financial results.
	An integral part of accounting measurements is the estimated useful lives of, for example, depreciated fixed assets and, consequently, the depreciation amounts and provisions created. The estimation of measurement has a certain risk of error and is marked by subjectivity.

Source: own preparation based on: (Kowalczyk i Kusak, 2006, pp. 2-3; Gąsiorkiewicz, 2011, p. 52).

3. Methodology, empirical data and analysis

In-depth, long-term analyses carried out since 2012, supplemented by data from the Central Statistical Office of Poland enabled to create database of 695 meat enterprises located in Poland

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[1] The methodological disturbances are the result of changes in the information content of indicators, which means that they represent a different range of phenomena than before. Methodologically determined difficulties arise also as a result of statutory changes in the recording and settlement of costs, production, or losses, etc.

[2] Financial distortions result from changes in the prices of finished products, materials, depreciation rates, salaries, credit interest, taxes, exchange rates, etc.

[3] Material disturbances are the result of differences in the manufactured products due to the improvement of production, construction, technological processes, etc.

[4] Organizational disturbances result from changes in the scope of operation of the analyzed research entities, e.g. mergers, acquisitions, bankruptcy or liquidation.

in the period 2010-2019. Raw data for analysis came from Polish Monitors "B", and a specialist financial database of EMIS Intelligence, supplemented with financial statements from the National Court Registers. The financial data in number of 27 800 units from the meat sector were used in the research in order to evaluate financial efficiency in terms of debt.

The basic criterion for a research selection sample were:

a) subject of conducted activity according to PKD 2007[5] - classes 10.12 and 10.13,
b) location within the country,
c) keeping the financial statements for the years 2012 to 2019,
d) no bankruptcy or liquidation,
e) raw material processing volume (t/week), number of employees (full-time), volume of revenue (PLN/year).

The analyzed group of 695 operating enterprises in the meat sector were divided into four groups: slaughterhouses, where N = 52, meat processing enterprises, where N = 545 (subdivided into large meat processing enterprises, where N = 24, medium-sized, where N = 274, and small enterprises, where N = 247), poultry meat enterprises, where N = 53, meat trading and service enterprises, where N = 45. Small meat enterprises employ from 10 to 49 persons, process more than 7.5 to 20 tons of slaughter material per week and obtain sales revenue up to PLN 100 million per year. Medium-sized meat enterprises employ from 50 to 249 people, process 20 to 100 tons of slaughter material per week, and obtain sales revenue of PLN 101-499 million per year. Large meat enterprises employ over 250 people, process more than 100 tons of slaughter material per week, and obtain sales revenue exceeding 500 million PLN per year. The research was comprehensive (full), because it covered the entire population. It means that the number of all enterprises subjected to the research was equal to the number of enterprises in the population. The study of financial efficiency met the criterion of representativeness.

Table 3: Presentation of used methods, techniques and research tools

Research subject	Measurement method	Subject, territorial-temporal scope	Method of data acquisition	Tools and research techniques	Current application of methods
evaluation of financial efficiency	quantitative	database includes all entities operating in the meat sector in Poland	financial database for the purpose of research	indicator analysis methods, panel data modeling	A few analyses in Poland and in the world

Source: own preparation.

In the last stage of the research, the analysis of variance known as ANOVA was applied in panel data modeling in order to test for statistically significant relationships between total debt ratio values across all groups of examined enterprises. ANOVA is a statistical method used to examine observations that depend on one or more factors acting simultaneously. This method explains with what probability the extracted factors can cause differences between observed group averages. Compared to other simpler methods of data analysis, non-parametric ANOVA allows to test the comparison of variables that have more than two levels (groups), as well as the simultaneous influence of several factors at once (MANOVA) and the interaction effects between these factors (Zhang, 2013).

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[5] Meat processing enterprises were classified according to the volume of processing raw material, such as: tons/day, see also: Dz. U., 2004, nr 173, poz. 1807. Note that PKD stand for Polish Classification of Business Activities.

Panel data models are special models built from cross-sectional-temporal data: objects×variables×periods. They describe a fixed group of objects in more than one period. Thanks to information about objects and their simultaneous characteristics in particular periods, panel data models allow to reduce measurement error resulting from omission of important unobservable variables for these objects. These models take into account effects of two types of factors on the objects under analysis. First group are those, which in the same way influence phenomenon in all objects. The second group are those that specifically affect the individual units of study.

The presented conditions require the researchers to make a complete selection of data, perform correct calculations, prepare them carefully, present the results clearly, but most of all, apply appropriate indicators and methods of their calculation.

In the paper comparisons of financial indicators were based on several comparative databases coming from the previous period, so called, comparisons over time. In the study accounting indicators, which belong to the most common methods of measuring efficiency, were used. The accounting indicators are created on the basis of historical data from standardized financial statements, the reliability of which results from the independent auditor. The assessment of financial efficiency of enterprises is possible thanks to the interpretation of results. The selection of partial indicators was guided by the following premises:
- the indicators should determine the effectiveness as comprehensively as possible,
- include financial, economic and commercial dimensions,
- have a large decision-making and information capacity,
- take into account the interests of the producer, processor, entrepreneur,
- be characterized by a simple design.

Table 4 presents the characteristics of the debt indicators and its interpretation.

Table 4: Presentation of financial indicators in terms of debt

No.	Name of the ratio	Explanation of the debt ratio	Average values in the sector
1.	*Total Debt Ratio* = total liabilities / total assets	The total debt ratio shows the relationship between total liabilities and total assets and belongs to the group of indicators describing how the company's activities are financed. The optimal level of this ratio should be 0,5	0,51
2.	*Debt-Equity Ratio* = debt / assets total liabilities / equity	The capital ratio shows the relation between total liabilities and equity of the company, i.e. it describes the size of the share of foreign capital in the financing of the company's activity against equity. Optimal values of the ratio should be in the range from 1,0 to 3,0.	1,35

Source: based on: (Bień, 2011; Bragg, 2010; Gołębiowski, Tłaczała, 2009; Jaki, 2012, pp. 150-152).

4. Results and discussion on financial efficiency in terms of debt of meat sector

Table 5 presents the relative book values of debt ratios in all groups of examined enterprises in the meat sector in Poland between 2010-2019. Raw data for analysis came from Polish Monitors "B", and specialist financial database called EMIS Intelligence, supplemented with financial statements in the form of balance sheets, profit and loss accounts, cash flows of the surveyed entities from the National Court Registers in the years 2010-2015. To calculate the values of

Total Debt Ratio (TDR) and Debt-Equity Ratio (DER) 27 900 financial data from all categories of the analyzed enterprises of the meat sector were used.

Table 5: Presentation of debt ratios in all examined enterprises of the meat sector in Poland between 2010-2019

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average value for 2010-2019	Standard deviation	Coefficient of variation [%]
Slaughterhouses (N = 52)													
Debt margin (DM)	0,62	0,63	0,61	0,54	0,51	0,52	0,53	0,54	0,56	0,55	0,56	0,05	9,18
Debt to equity ratio (DER)	1,50	1,52	1,55	1,16	1,04	1,10	1,12	1,13	1,14	1,15	1,24	0,23	17,66
Meat enterprises (N = 545)													
Large meat enterprises (N = 24)													
Debt margin (DM)	0,54	0,55	0,56	0,54	0,53	0,57	0,54	0,55	0,56	0,57	0,55	0,01	2,52
Debt to equity ratio (DER)	1,31	1,32	1,33	1,17	1,11	1,32	1,26	1,28	1,30	1,31	1,27	0,10	7,55
Medium-sized meat enterprises (N = 274)													
Debt margin (DM)	0,57	0,54	0,57	0,51	0,54	0,57	0,55	0,54	0,55	0,55	0,55	0,02	4,07
Debt to equity ratio (DER)	1,34	1,32	1,33	1,06	1,16	1,35	1,26	1,27	1,26	1,29	1,26	0,12	9,59
Small meat enterprises (N = 247)													
Debt margin (DM)	0,25	0,26	0,27	0,33	0,33	0,56	0,34	0,36	0,38	0,33	0,34	0,11	31,79
Debt to equity ratio (DER)	0,46	0,36	0,37	0,50	0,48	0,51	0,44	0,46	0,49	0,51	0,46	0,06	13,45
Poultry meat enterprises (N = 45)													
Debt margin (DM)	0,55	0,56	0,57	0,58	0,57	0,56	0,56	0,57	0,58	0,56	0,56	0,01	1,73
Debt to equity ratio (DER)	1,31	1,32	1,33	1,39	1,30	1,29	1,32	1,32	1,29	1,28	1,31	0,04	2,69
Meat trading enterprises (N = 53)													
Debt margin (DM)	0,61	0,62	0,64	0,61	0,49	0,46	0,49	0,50	0,48	0,47	0,54	0,08	13,60
Debt to equity ratio (DER)	1,70	1,72	1,79	1,58	0,98	0,85	1,23	1,25	1,30	1,32	1,37	0,41	28,66
All examined meat enterprises (N =45)													
Debt margin (DM)	0,52	0,52	0,54	0,52	0,49	0,54	0,50	0,51	0,52	0,50	0,51	0,01	31,34
Debt to equity ratio (DER)	1,27	1,04	1,28	1,14	1,01	1,07	1,10	1,11	1,13	1,14	1,13	0,08	12,83

Source: own preparation.

Figure 1 shows that all four groups of examined enterprises in the meat sector (with the exception of small meat enterprises) had a stable level of total debt ratio (TDR) in the range of 53 to 57% in large meat enterprises, from 51 to 61% in slaughterhouses and medium-sized meat enterprises. In 2010-2019 the small meat processing enterprises were characterized by the lowest values of total debt ratios. It was due to the fact that the entrepreneurs operated in cash and had difficulties in minimizing the incurrence of liabilities. As indicated by studies on finance management of agricultural enterprises by such authors like: Franz-Dąbrowska (2011, p. 10; 2015, pp. 5-16), Bereżnicka (2011, p. 52), Bieniasz and Golas (2006, pp. 110-124), Manko, Sobczyński and Sas (2008, pp. 5-22), Stefko (2011, p. 148) Wasilewski and Galecka (2010, pp. 267-279), Zawadzka, Ardan and Szafraniec-Siluta (2011, p. 195) there is a wide variation in values of financial liquidity. Similar to Franz-Dąbrowska's (2011, p. 10) findings, in the research it was observed that the large meat enterprises were characterized by significantly higher values of current liquidity ratios and relatively low level of liabilities.

Figure 1: Total debt ratio (TDR) in all examined meat enterprises in comparison with the meat and poultry industry in Poland in 2010-2019
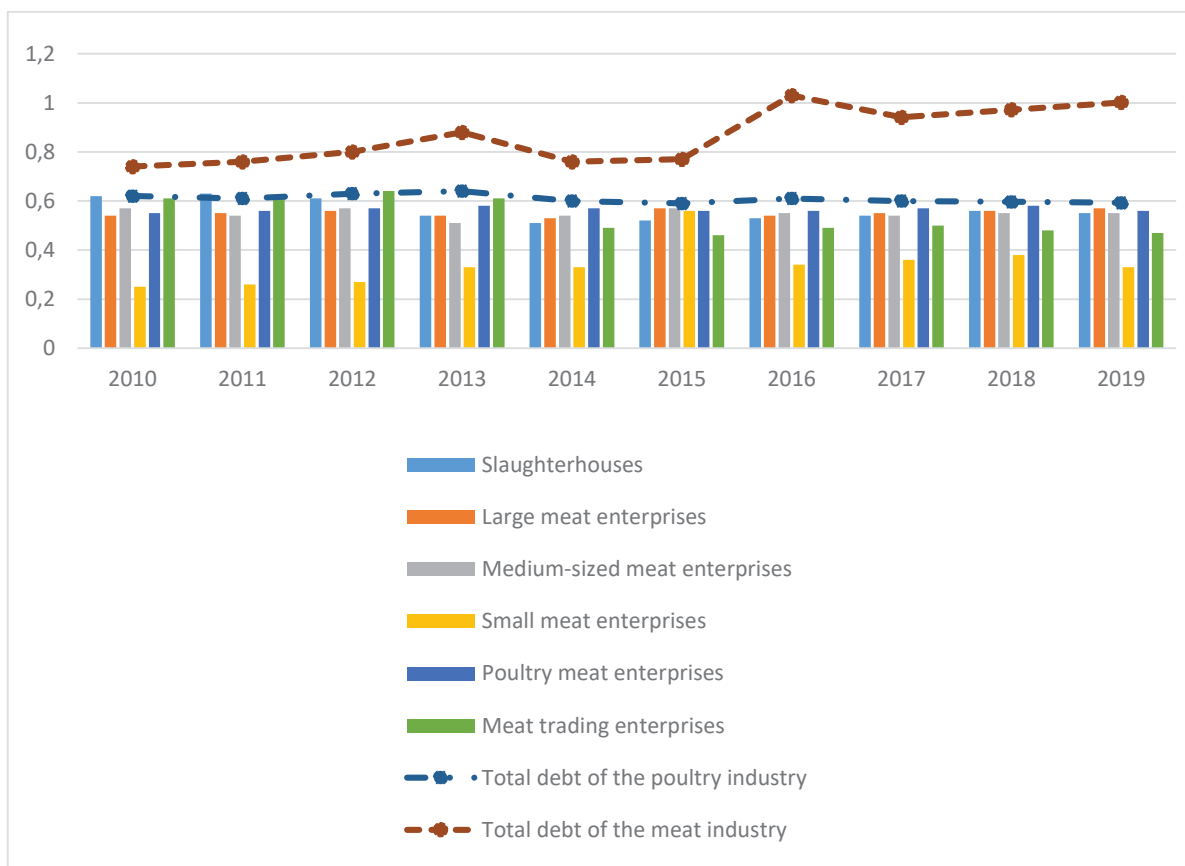
Source: own calculations and the calculations from the unpublished data from IEiGŻ-PIB and Polish Statistical Bureau (2010-2019).

Table 6 shows the policy measures in the area of debt ratios. Aggressive debt policies are characterized by a high (higher than 1,35) level of total debt ratio as well as a high level of debt to equity ratio. Moderate debt policies are characterized by a moderate, i.e. an average (at 1,35) level of total debt ratio and an average level of debt to equity ratio. The implementation of conservative debt policies are characterized by a low level (less than 1,35) of total debt ratio and a low level of debt to equity ratio.

Table 6: Policy determinants in the area of debt of examined enterprises

Specification	Type of action strategy to be implemented		
	Aggressive	Moderate	Conservative
Total debt ratio (TDR)	< 0,57	= 0,57	> 0,57
Debt to equity ratio (DER)	< 1,35	= 1,35	> 1,35

Source: own preparation. Note that: A – aggressive, M – moderate, C – conservative.

Table 7 shows dominant financial policies in the area of debt in all groups of examined enterprises in the meat sector in Poland between 2010-2019. To conclude, in the area of debt:

- moderate financial policies in terms of total debt ratio (TDR) and debt to equity ratio (DER) were pursued simultaneously by poultry and medium-sized meat companies,
- an aggressive financial policy, in terms of the degree of total debt ratio (TDR) and the degree of debt to equity ratio (DER), was pursued by small meat companies and meat trading companies,
- aggressive financial policy in terms of the degree of total debt ratio (TDR) and a moderate financial policy on the degree of debt to equity ratio (DER) was pursued by slaughterhouses and large meat companies.

Table 7: Dominant financial policies in the area of debt in all examined enterprises of the meat sector in Poland between 2010-2019

Specification	Slaughterhouses	Meat enterprises			Poultry meat enterprises	Meat trading enterprises
		large	medium-sized	small		
Dominant financial policy in terms of debt						
Total debt ratio (TDR)	A	A	M	A	M	A
Debt to equity ratio (DER)	M	M	M	A	M	A

Source: own preparation. Note that: A – aggressive, M – moderate, C – conservative

Table 8. Panel data estimation results for the variable total debt ratio (TDR) – generalized least squares method (GLSM)

Model 1: panel data estimation (GLSM) – 865 observations Time series length (in years): minimum 4, maximum 10 Robust HAC				
Variables	*Coefficient*	*Standard error*	*Z*	*Critical level of significance*
Const	.4205983	.0686175	6,13	< 0,000
Slaughterhouses	.1090925	.0828677	1,32	< 0,188
Meat enterprises	.0330047	.070921	0,47	< 0,642
Poultry meat enterprises	.1648893	.0840449	1,96	< 0,050
Test *Wald chi*-squared (2) = 8,61, *critical level of significance* = 0,0349				
Model's interpretation	The value of total debt ratio (DM) was significantly higher by 0.164 (*critical level of significance = 0.050*) in poultry meat enterprises than in other groups of enterprises			
Results	Belonging to the group of meat industry enterprises statistically significantly differentiated the obtained values of total debt ratio (DM)			
Hypothesis H_1	Financial efficiency in terms of debt differentiates groups of meat industry enterprises			

Decision on H_1	Reject H_1
Conclusion	Financial efficiency measured by the value of total debt ratio (TDR) differentiates the group of meat enterprises. The obtained estimation results do not support hypothesis H1, because the value of total debt ratio (TDR) significantly differentiates only poultry plants. The results of the model may complement H1 by fulfilling a cognitive function

Source: own preparation based on the research

The analyses of the financial efficiency of the four groups of enterprises in the meat sector (table 8, fig. 1) can be summed up:

- the implementation of the adopted research objective enabled the formulation of conclusions and recommendations for economic practice,
- one group of conclusions presents the analytical potential of the indicative method and its usefulness in research on the estimation of financial efficiency of agribusiness entities,
- another group of conclusions concerns the importance of the assessment of the financial efficiency of all analyzed groups of enterprises in the meat sector,
- the financial efficiency in terms of the analyzed debt ratios in all four groups of the enterprises is stable in the period between 2010-2019.

5. Conclusions

The analysis literature in the field of measuring the financial efficiency of agro-food processing enterprises lead to the conclusion that the concept of efficiency is diverse and multi-dimensional and can be classified in various ways. Methods commonly used for assessing overall efficiency are based on three approaches: ratio, parameters and non-parameters.

According to the conducted research, the hypothesis has been positively verified only in poultry meat enterprises. It has been proven that in the poultry meat enterprises the financial efficiency in terms of debt reached the optimal level of the total liabilities and total assets. In other three groups of the examined enterprises in the meat sector the optimal level was not achieved. The small meat enterprises had the biggest difficulties in maintaining the optimal level of total debt to liabilities.

The research shows that the total debt ratio is undervalued, especially when compared to other groups of ratios, i.e. profitability ratios. This is especially important when taking steps to make enterprises of meat sector more competitive on the national and international stage. Above-average levels of indebtedness among enterprises in meat sector are indicative of persistent liquidity problems. The obtained results will be used in further analyzes in order to develop a new concept for measuring and assessing the efficiency of food processing enterprises.

The results of the article can be considered as a new contribution as they intend to identify, clarify and assess the financial efficiency of chosen group of processing enterprises in agro-food sector. In addition, the results can be helpful in creating a strategy for companies and economic policy programs in agriculture, helping adjust the activities of related entities in the agro-food market, as well as determine the role of the state in terms of stabilization of the domestic meat market and gaining the significant competitive advantages. Governmental support for meat companies should consist of introducing market-based instruments and institutional solutions to secure the income of entire production chains. After such a detailed recognition of the issue of financial efficiency of Polish meat sector, the next stage will be the implementation of comparative studies of meat sectors of other EU countries.

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EVALUATION OF THE CORPORATE SOCIAL RESPONSIBILITY IMPLEMENTATION IN CROATIAN CONSTRUCTION SECTOR

ABSTRACT

Through Corporate Social Responsibility (CSR) companies generate profit, take care of the environment they operate in, and create a positive impact on the society. However, there is an opinion that the CSR concept does not always achieve the right balance between the economic interests, social requirements and environmental issues. In order to investigate whether the trends in Croatian construction sector are in line with the CSR concept, this research explores relevant economic, social and environmental trends at the national and county level. From the economic perspective, data shows that construction sector plays important role at the national level as it makes almost 5% of Croatian GDP. This is significant for the economy of Croatian counties also, especially in the capital City of Zagreb. As a social development indicator, the share of employees from construction sector in total number of employees reveals similar situation, where the share is the highest in the City of Zagreb and the Split-Dalmatia County. Presented environmental data shows that the largest amounts of construction waste were processed in the Zadar County, the City of Zagreb and in the County of Istria. These economic, social and environmental issues imply that the introduction of CSR in sector is welcomed at every geographical scale. Based on the conducted analysis of the stakeholders and presented trends, this research proposes the evaluation framework for the CSR implementation, with relevant indicators. In a broader context of sustainability, Sustainable Development Goals (SDG) can be used as an overarching evaluation framework to shape, steer, communicate and report environmental goals and business activities. Therefore, this paper also provides recommendations for more sustainability transition of Croatian construction sector. In addition, this article argues that the principles of the CSR could support to reaching the EU-27 target of 70% construction waste recovery, while strengthening profitability.

Keywords: *Corporate Social Responsibility, construction waste, waste management, Sustainable Development Goals, Croatian counties.*

1. Introduction

According to the United Nations, the Corporative Social Responsibility (CSR) encompasses all the company's activities in order to uphold the principles of sustainable development (UN, 2012, 26). On the other hand, European Commission also is encouraging CSR as "a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on voluntary basis" (EC, 2001, 13). It offers a

Green Paper on Corporate Social Responsibility as a voluntary framework for companies that wish to invest in sustainable development (EC, 2001, 14). The International Organization for Standardization (ISO) also defines CSR through its ISO 26 000 standard as voluntary norm for integration of social and ecological concerns into company's business (ISO, 2010), by taking into account the expectations and cooperation of all involved stakeholders.

Most published papers and studies emphasize how CSR activities are likely to be matrixed into variety of differentiation strategies (Carroll and Buchholtz, 2006, 27; Crane et al, 2008, 6; Tilt, 2016,3; Bahta et al, 2020, 6), which define the roles of stakeholders, their interrelationships and tasks. As Kotler (2003, 315) stated, "the differentiation is the act of designing a set of meaningful differences to distinguish the company's offerings from competitors' offerings". This definition implies that a company emphasizes one or several characteristics of their product or service, that are perceived by customers as most important in fulfilment of their needs and preferences (Li et al, 2019, 7). In the last decade, the CSR has been identified as a differentiating characteristic of the company that meets the sustainability transition targets. These targets are dedicated to resolve fundamental change in core societal systems, in particular those related to food, energy and construction, mobility and the built environment (EEA, 2019, 60).

As one of the most intensive industries, construction sector has a very important role in sustainability transition - from design of materials and buildings to education of construction workforce related to performing activities related to recycling. Engagement of all stakeholders along the value chain and the use of existing schemes, such as CSR, enables a more holistic approach for circularity in construction sector (EC, 2020, 16). Such an approach can guarantee the preservation and rebuilding of financial, human and social capital, including natural resources form environmental capital needed for production. It is aligned with global Agenda 2030 of sustainability and sustainable development goals - SGD's (UN, 2015, 14). The SDG No. 12.5 points out that prevention, reduction, recycling and reuse are the modes that will result with significant reduction of waste generation. It is, therefore, important to encourage companies to introduce sustainable consumption and production practices along with appropriate reporting mechanism, so that they can measure their performance. In that sense, large and transnational companies that expand their activities beyond the national economies are especially important (SDG No. 12.2). Furthermore, SDG No. 8 Agenda 2030 (UN, 2015, 14) promotes sustained, inclusive and sustainable economic growth, together with creativity and innovation dedicated to full and productive employment.

Construction sector generates environmental pressures such as exploitation of ores needed for building materials and construction waste generated. This type of waste is considered as a special category of waste that is generated during the construction of buildings, reconstruction, removal and maintenance of existing buildings, and waste generated from excavated material, which cannot be used for the construction of the building without prior recovery (EC, 2016, 18). In order to comply with the objectives of Waste Framework Directive (EC, 2008, 102) and the principles of circular economy (EC, 2020, 20)**,** Member States shall re-use, recycle and implement other material recovery practices, including backfilling operations. The plan was, by 2020, to increase the share of treated construction waste to a minimum of 70% by weight (EC, 2008, 109). To achieve that goal, stakeholders should apply the order of priority of the Waste management hierarchy (Figure 1) and other applicable tools, such as sustainable waste management practices (EC, 2008, 106).

Figure 1: Waste management hierarchy
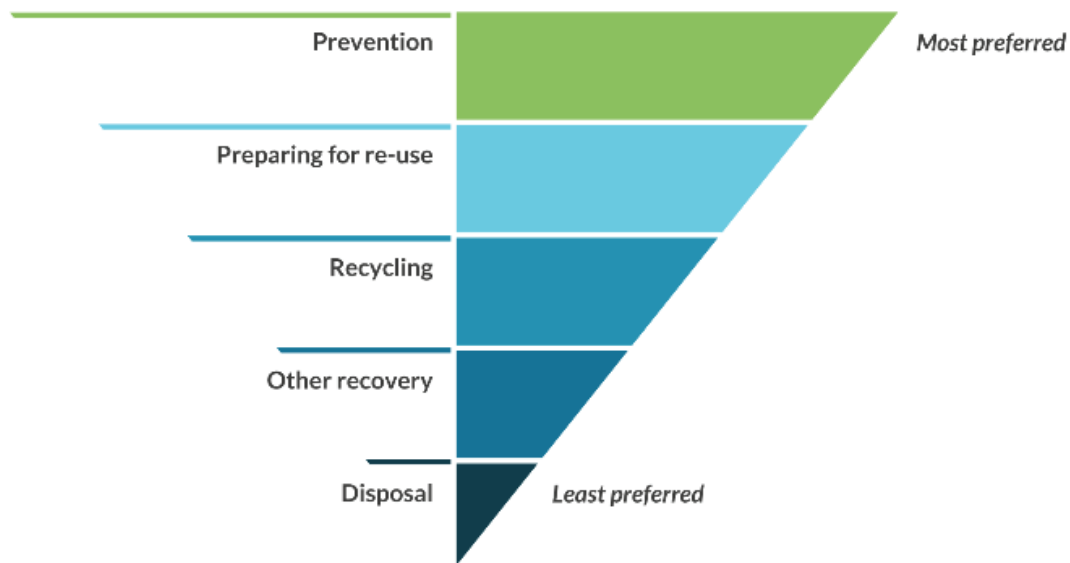
Source: 4RinEU, 2020

This paper identifies main stakeholders in construction sector needed for design of differentiation strategy according to CSR scheme. In addition, authors propose the evaluation framework with the list of relevant indicators according to the scope and role of identified major stakeholders. For each cornerstone of sustainability transition - economic, social and environmental, selected indicators are developed as to argument current state and trends. The goal is to provide evidence based evaluation of Croatian construction sector with the focus to specific SDGs related to CSR and construction waste management EU-27 target. The final aim is to explore the relevance of CSR implementation in Croatian construction industry**.**

2. Theoretical framework and methodology

In the very beginning of this research it was recognized that the evaluation framework for the analysis of CSR in the construction sector is needed. Therefore, the main stakeholders with the most significant impact on the sector are defined according to the available literature. Within strategic management, Frideman (1984, 5) defined stakeholders as "any group or individual who can affect or is affected by the achievement of the organization objectives". Specifically, stakeholders from the construction sector should involve their economic, social and environmental obligations and interests to reach a common business case agreement. The example of the common business case is the shift in growing awareness of sustainable construction, such as green building with circular building design (EC, 2020, 11). The suitable tool to reach this kind of performance could be the concept of CSR, that has recently evolved from the responsible business concept to the level of strategic decisions (Ulutaş et al, 2016, 2051). Therefore, as the priority of this research is the identification of the scope and role of the major stakeholders in construction industry (Figure 2).

Figure 2: Stakeholders in the construction sector
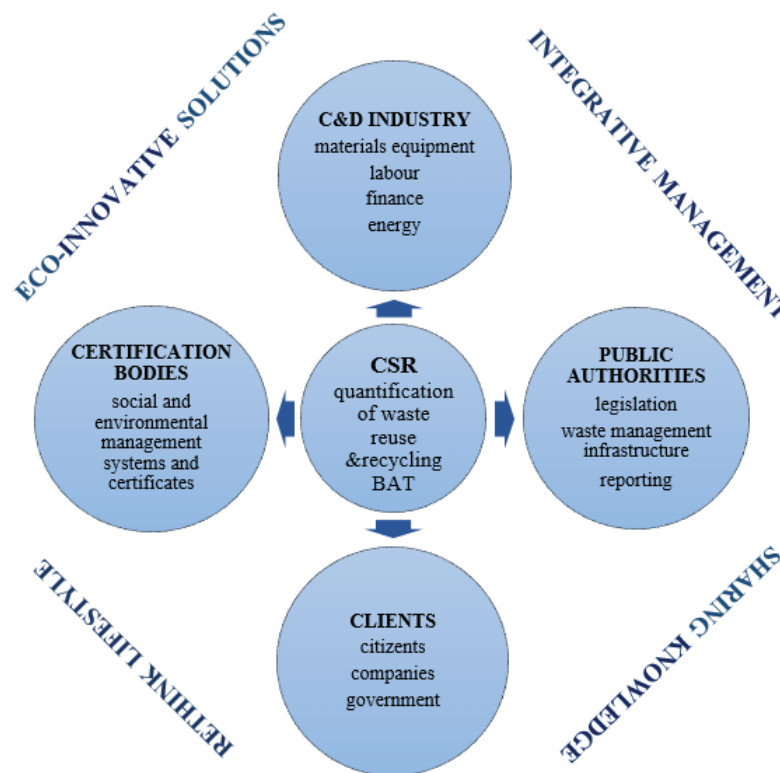
Source: authors according to EC 2016, pp 7

Authors distinguish that system is comprised of: (i) construction and demolition (C&D) industry (construction product manufacturers, renovation, logistic and transport companies, demolition contractors, recycling companies, waste treatment companies); (ii) public authorities at local, regional, national and EU levels; (iii) quality certification bodies (for buildings and infrastructure and for the CSR and environmental issues); (iv) clients of C&D industry. An integrated approach along the value chain is vital and it could be reached if CSR has central strategic position in the system. As stated in Principles of Buildings design (EC 2020, 21), "The transformation to a circular approach requires a systemic vision … with all the actors involved."

Based on this preliminary stakeholder analysis, a preview of the available indicators was made in accordance to the literature and the availability of the data required. The goal was to compose comprehensive but simple evaluation framework appropriate for measuring current state in Croatian construction sector and CSR implementation. The purpose of corresponding indicators is to provide relevant information that could be equally used by companies themselves, but also by decision makers and the public. Indicators are usually divided according to individual economic, social or environmental topics. The reason for this kind of indicator's selection was that all these components of modern society are important in the context of CSR in construction sector. Therefore, two indicators for each of the above mentioned topics are selected to give a measurable value to the evaluation framework developed in this study. Special emphasis is placed on environmental perspective, namely on waste management, due to the fact that waste is a resource equally important from the environmental, economic and social point of view.

Available literature and relevant data needed for indicators revealed that the indicators were mainly designed to communicate performance of the construction industry and public authorities, while data to measure the efficiency of clients and certification bodies are incomplete. Therefore, this research is focused on collecting only the currently available data needed to develop indicators that will be able to evaluate performance of construction industry and to measure the efficacy of public authorities in Croatia. The data was taken from databases and relevant reports, and presented through selected indicators in in Chapter 3.

3. Evaluation framework for CSR implementation in construction sector

In order to recognize whether patterns in the Croatian construction sector are consistent with the implementation and, finally, with possible strategic use of CSR, authors developed systemic evaluation framework for the CSR applicability (Table 1). This evaluation framework contains the proposal of the most relevant indicators, as the simplest and most comprehensive way of data presentation and evaluation. This approach assures uniformity of data processing, data comparability and evaluation of CSR applicability in the construction sector.

Table 1: Evaluation framework for the CSR applicability in the construction sector

Stakeholders	Indicators
Construction industry	The share of construction sector in GDP (KN)
	The share of employees in the construction sector in total number of employees
Public authorities	Data by reporting mechanism: generated and treated construction waste (t or %)
	Construction waste management infrastructure by the counties (locations)
Clients	Number of eco-innovations in the construction sector on 100,000 citizens
	Share of construction investments by the Green Public Procurement criteria
Certification bodies	Number of CRS certificated companies in construction sector on 100,000 citizens
	Number of environmental certified companies (ISO 14001, EMAS etc.) on 100,000 citizens

Source: authors according to EC 2020, 6; MESD 2017; MESD 2019)

3.1. Results of evaluation of CSR implementation in construction sector

To provide representative picture of CSR's implementation in the construction sector, selected indicators from the evaluation framework (Table 1) were developed. The first one presents the share of construction sector in GDP at the county level (Figure 3). At the county level, the largest share in GDP have the City of Zagreb (19%), Split-Dalmatia (10%), Primorje-Gorski Kotar (9%) and Istria Counties (8%). The smallest share is evident in Požega-Slavonia (1%), Virovitica-Podravina (1%) and Bjelovar-Bilogora (2%) counties (Figure 3). At the national level, this value ranged between 4% and 5% in recent years (CBS, 2020).

Figure 3: The share of construction sector in GDP of Croatian counties
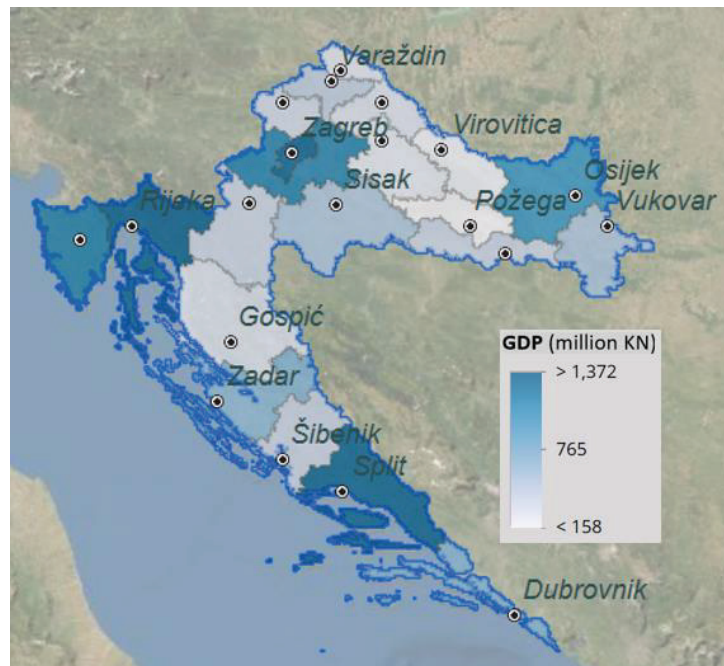
Source: MESD, 2017

Generally, the construction industry plays an important role in the economic growth and development, and consequently, in social development of the country. The share of construction sector employees in the total number of employees in Croatia is the second indicator that is proposed to give an insight to the social perspective. At the national level, this share amounts approximately to 7% (CBS, 2020). The higher share has City of Zagreb, with 30% or almost 21,000 construction sector employees (Figure 4).

Figure 4: Share of employees from construction sector by counties in total number of employees in Croatia
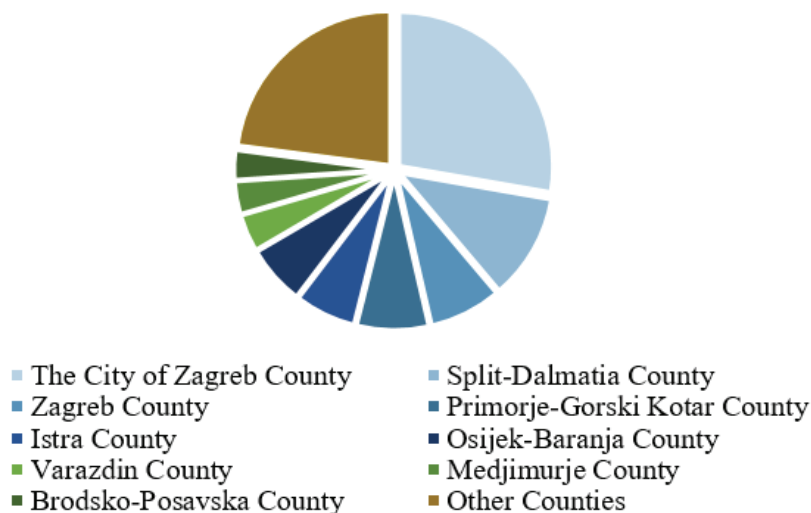
Source: CBS, 2020

Construction industry contributes to improvement of social well-being, but in parallel usually has a negative impact to the environment. It is estimated that the total amount of Croatian construction waste generated in 2019 was 1,365,066.0 t, which is an increase of 9.8% compared to 2018 (MESD, 2020, 21). According to the data reported in the Croatian Environmental

Pollution Register (MESD, 2019, 124), the treatment in 2019 was carried out at 151 locations and 1,076,662.0 t of construction waste was processed (18% more than in 2018). According to the same source, in the total treated and reported construction waste, recovery procedures (except for backfilling) was applied to 598,768.9 t (55.6%). Almost one third (29%; 12,168.9 t) of construction waste was treated by disposal procedure and 164,764.4 t (15%) was treated by backfilling processes (Figure 4). The largest amounts of waste were treated in the Zadar County by the disposal and backfilling procedures (25.2%). In the City of Zagreb 20.6% of construction waste was treated mostly by crushing treatment, dumping and metal recycling procedures, and in the Istria County 18.8% was treated on the crusher and by disposal (MESD, 2020, 22).

Figure 5: Construction waste management in Croatia by treatment in 2019
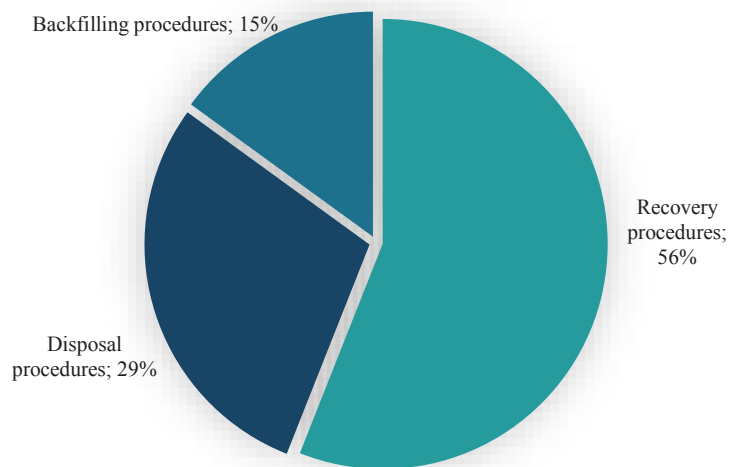
Source: MESD, 2020, 18

The Croatian recovery rate of construction waste is calculated according to the method prescribed by Decision 2011/753/EU, taking into account only certain types of construction waste (EC, 2011, 2). According to this method, the recovery rate of construction waste was 67.3% in 2019. If all types of construction waste were taken into account, the recovery rate would be around 55% (MESD, 2020, 22). If these values are compared to the EU's target of 70% construction waste that is treated by re-use, recycling and other material recovery practices (including backfilling), it could be concluded that progress in Croatian construction sector is needed. The CSR initiative responds to the economic, societal and environmental demands as voluntary tool with potential for sustainability transitions.

4. Discussion

Actual challenges are global and systemic. Therefore, a strategic approach towards sustainability transition should be made in all areas of human activities. To address both socio-economic and environmental dimensions of sustainability, many tools are applicable. Construction enterprises typically introduce CSR in their strategies and business as one way to maintain a positive corporate image. As Crane et al (2008, 11) describe, CSR concept has six characteristics: "(i) voluntary activities that go beyond those prescribed by law, (ii) internalizing or managing externalities (i.e. a reduction on pollution), (iii) multiple stakeholder orientation, (iv) alignment of social and economic responsibilities to maximize the profitability, (v) practices and evaluation of the values (vi) reporting of the CSR outcomes.". Dahlsrud (2008,

7) defines three core dimensions of CSR. The first one is economic development and maintaining profitability. The second is social dimension, which is about contributing to a better society and the third is environmental dimension that focuses on a cleaner environment.

There is a growing number of research, which consider implementation of CSR in construction sector. It is recognized that differentiation strategies could be conceived as consisting of product-level and company-level CSR (Li et al 2019, 6). In this research, the company-level differentiation strategy is considered to recognize the roles, interrelationships and tasks of stakeholders (Figure 2) as well as evaluation framework presented in Table 1. By defining the main stakeholders at the company level, this paper provides basis for a appropriate stakeholder's CSR management. This concept permits the organization to better understand their stakeholders, to manage their expectations and to seize new business opportunities.

On the other hand, the evaluation framework with relevant indicators helps in clarifying the starting point and possible directions of sustainable development. Therefore, in this study the key point was the evaluation of data accessibility required for indicator development, which revealed that data related to construction industry and public authorities are easily accessible, as opposed to data for indicators related to clients and certification bodies.

The majority of organizations in Croatian construction industry are small or medium sized companies. Therefore, it could be critical for them to have an effective stakeholder management based on differentiation strategies. In this regard, it is important to consider the possibility of introducing CSR that contributes to economic progress, better social cohesion and environmental efficiency. Unfortunately, a small number of Croatian companies in construction sector introduced the CSR, and a comprehensive and credible list of such companies is still missing.

Some authors stated (Khan, 2008, 282, Li et al, 2019, 3) that construction sector is considered to be one of the major sources of economic growth. It also has essential role in social development of a country as a mechanism of generating the employment and offering job opportunities to unskilled, semiskilled and skilled work force (Boadu et al, 2020, 5). On the other hand, it is one of the largest exploiter of natural resources, both renewable and non-renewable (Ametepey and Ansah 2015, 39). The construction activities have significant impact on biodiversity, land and water. For example, rapid urbanization needs a new infrastructure, which contributes to approximately 20% of global CO_2 emissions (Huang et al 2018, 1911), and produces large amount of waste (Yuan 2012, 3).

In Croatia, the share of construction sector in GDP indicates importance of construction industry to the economy of the capital City of Zagreb and some counties in the Adriatic region. This trend is mostly related to touristic activities and rapid urbanization. It is obvious that the construction industry at the national scale employs substantial number of workforce, which is approximately 5%. At the regional level, the higher share has the City of Zagreb, with share of 30% or almost 21,000 employees, so the construction industry has a large impact on the social trends, including migration of working force from neighboring countries. Construction sector significantly improves national employment rate, as provides jobs to large number of unskilled personnel that are hardly employed in another sectors of the national economy. From the environmental perspective, the share of the construction waste management by treatment indicates that there is a space for further improvement. The significance of the construction waste lies in the fact that it represents almost a quarter of the total waste produced in Croatia, which is estimated to approximately 5.3 million tons (MESD, 2019, 124). In 2019, the total construction waste quantity was 1.37 million t (MESD, 2020, 22). Of that amount only 1.07 million tons was treated (MESD 2019, 124), which is not enough to meet SDG's and EU target.

Presented data indicates that construction industry plays a significant role in socio-economic trends, especially in the capital City of Zagreb and some of the Adriatic counties. From the environmental perspective, data reveals that Croatia had to reach the EU-27 target to re-use, recycle and recover minimum of 70% of construction waste, by 2020. Regarding the previously mentioned global Agenda 2030 targets SDG 8, SDG 12.2 and SDG 12.5, and EU-target for construction waste management, it is obvious that there is a room for the socio-economic and environmental improvements in Croatian construction sector. Potential solution is to introduce the CSR concept in differentiation strategies of construction companies, which goes hand in hand with the concept of circular economy.

5. Conclusion and recommendations

This holistic approach to the sustainable development tends to rebuild financial, manufactured, human, social and natural capital. It is important to implement this paradigm in all economic sectors, especially in those that use environmental materials and whose performance has a significant impact on the environment and society.

In order to assess the implementation of CSR in construction sector, this research identifies four key stakeholders: construction industry, public authorities, clients and certification bodies, and establishes evaluation framework with relevant indicators (Table 1.). Nevertheless, this paper also stresses the issues of the scarcity of data related to clients and certification bodies. This limitation could be a trigger to organize data collection within the proposed framework in order to measure the success of CSR implementation in the construction sector for the future research.

Based on the available data, this assessment derived from the indicators, points out the necessity for a stronger commitment to the SDG's and EU-27 policy targets to achieve a holistic approach towards sustainable development in this sector. Since the policy targets have not been achieved it is proposed to design and to boost recycling targets and create green jobs through application of CSR in Croatian construction sector. This requires an evaluation framework and a willingness to collect relevant data, so the progress can be monitored at both the organizational and county level. Based on strategy level activities in the construction sector, the CSR can be basis for the further initiatives that could help achieve UN and EU policy objectives.

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IMPACT OF COVID-19 PANDEMIC ON BANKS' BALANCE SHEET – CASE OF CROATIAN BANKING SECTOR

ABSTRACT

COVID-19 outbreak has shown as an unprecedented challenge that has caused global uncertainty and left a massive impact on human health, modern society and global economy. Severely reduced economic activity had numerous repercussions for companies and households, but also for banking sectors around the globe causing a crisis with unclear consequences. Unlike a number of previous crisis arising from the financial sector itself, this one is truly exogenous and it may be considered as a first real test of the lessons learned after the global financial crisis in 2008. It has affected both banks' financial position and their performance. Banks' balance sheets are undergoing significant changes, both in terms of their size and structure, reflecting the challenging environment they operate in. This paper deals with the impact of COVID-19 pandemic on balance sheet of Croatian banking sector and aims to perceive the possible repercussions of such changes. For this purpose, a comparative analysis of sector's balance sheet and selected indicators before and during COVID-19 crisis was conducted. Croatian banks have entered this unique crisis with a fairly good capital position and liquidity buffers that, together with timely deployed monetary and regulatory measures, enabled banks' business activity during the "new normal" to certain extent. In the first months of the pandemic, while banks were facing increased risks, their balance sheets recorded growth, dynamics and structure of their lending activity as well as deposit liabilities were significantly changed and their capital adequacy ratios were reaching all-time highs. Even though no significant shortfalls are revealed by now, the final coronavirus effects will depend on future developments of multiple factors. Based on the conclusions of the conducted analysis, this paper gives an overall assessment of the Croatian banking sector resilience and underlines the future challenges in post-COVID-19 world.

Keywords*: Croatian banking sector, COVID-19 pandemic, balance sheet, lending activity, capital position.*

1. Introduction

In 2020, a year of unprecedented challenges, the world has experienced a significant decline in economic and social activity. Widespread lockdowns, bankruptcies, GDP drops, growth of unemployment rate as well as various other negative impacts were all caused by a small and at the time little-known virus named SARS-CoV-2 that has managed to spread around the globe in almost no-time. The crisis caused by COVID-19 is unique and profound and has affected almost all segments of modern life. The banking sector is not exempted. While the final effects are still hard to predict, this paper discusses the impact the virus has left on Croatian banking sector so far and aims to perceive the possible repercussions in the near future. Although a

significant impact on both financial position and performance has been noticed, this reasearch focuses on balance sheet and changes in its volume and structure. Balance sheet, as one of main financial reports, gives an overview of company's financial position and may be considered as a tool for assessing its stability and soundness.

Generally, in pre-COVID-19 times the majority of the banking systems worldwide was faced with several significant challenges such as low levels of interest rates, heavy regulatory burden, relatively high NPL rates in some countries (even as a legacy of 2008 crisis) and increased competition from new digital entrants; but were generally considered more stable than the at times preceding global financial crisis from 2008. These two crisis are often being compared, but there are several significant differences for banks between crisis 2008 and 2020, which is why its effects also differ. Firstly, there is a difference in the source of crisis - unlike most of the previous crisis that had left significant consequences on banking systems worldwide and whose source was the financial sector itself, this crisis is truly exogenous and therefore requires different policy response. This time banks are not the source of the crisis, but institutions with highly important role of supporting national economic recovery. Countercyclical roles of banks are often discussed and are indeed a very effective way of bearing with the crisis. But while they are called to play an important countercyclical role, banks also have to consider the future implications such actions might have on their financial performance and overall financial sector stability. Still, the very fact that this crisis is exogenous and not a consequence of financial system weakness is quite encouraging for banking systems worldwide. Moreover, banks' capital positions are significantly improved and banks nowadays hold capital buffers in excess of the regulatory minima, constraining their ability to lend, but positively affecting its stability. The liquidity situation is also indisputably strengthened – banks hold more liquid assets compared to the global financial crisis which should enable them to pull through periods of severe stress. The number of differences is far bigger and more complex, as well as the list of all weaknesses of the financial system prior to 2008 (weaknesses of today's system are probably going to be seen cleary soon), but these ones might be considered as the most noteworthy. Taking it all into account, regulatory requirements implemented after 2008 should have created more resilient and robust banking systems able to deal with future crisis and the coronacrisis might be considered as the first real test of the lessons learned after 2008. The question remaining is whether it is done enough. The answer to this question will certainly be affected by further developments related to the epidemiological situation, length of the crisis (one year after the outbreak there are no clear indications that the crisis end is near) as well as further policy response. During 2020 banks were experiencing some dramatic changes, but no dramatic outcomes such as bank runs or major bank bankruptcies were noticed.

As far is Croatian banking system is concerned, a significant impact in almost all business areas has been noticed. Banks' balance sheets recorded significant changes, both in terms of their size and structure. Regarding research methodology, desk-research method on available secondary data was conducted. Research data is quantitative and coming from official Croatian National Bank publications, primarily aggregate non-consolidated statistical report of credit institutions, preliminary unaudited and audited data on credit institutions as well as various indicators of credit institution operations. Those reports are regularly published on Croatian National Bank (hereinafter: CNB) webpages, and for the purpose of this research reports for year-end 2019, half year report for 2020 and year-end 2020 were analyzed. In order to explain the effects of coronacrisis, a comparative analysis of the system's balance sheet and selected indicators before and during COVID-19 period was conducted, with particular focus on overall growth of balance sheet, banks' lending activity by counterparty and loan type, change in deposit structure as well as liqudity and capital adequacy indicators. Although housing savings banks also belong to credit institutions category and are part of the previously mentioned statistics, they only account for approximately 1,22% of total credit institutions assets (CNB, 2020c). Therefore, it is

considered that credit institutions data is acceptable for banking system analysis, i.e. that this type of reasoning should not result in misleading conclusions and that the vast majority of volume and structure changes described in the mentioned reports refers to banks. Apart from that, there is a couple of other research limitations to be considered. Firstly, there is a difference in data used for the analysis – at the time of conducting this research data for 2020 was not yet audited, meaning that final data version might differ from the data used. Secondly, due to the fact that the paper is dealing with the situation that occured during the last year, analysis is conducted on a small dataset, i.e. for a short time period. That is why only the early effects of the pandemic can be noticed, whereas long-term data (that would enable more complex and detailed analysis) is still lacking. Furthermore, the research limitations are reflected in the inability to apply conclusions made in the last part of the paper on each and every banking institution, since the analysis was not conducted case by case, but rather on overall banking sector level. Another limitation is related to the lack of published preconducted scientific research on this topic, especially for Croatian banking sector.

The paper is structured as following: after the introduction a brief overview of the Croatian banking system in pre-COVID-19 period is given, as this period was used as basis of comparison for the analysis. Chapter 3 deals with COVID-19 outbreak and policy response, since the measures taken by policy makers had significant impact on banks' balance sheet. The early balance sheet effects are described in Chapter 4, after which further implications of the balance sheet changes are elaborated. The paper ends with conclusions and recommendations for future research.

2. Brief overview of Croatian banking system before COVID-19

In general, Croatian banking system may be characterized as stable – banks are adequately capitalized, with stable deposit base, no liquidity issues and solid profitability indicators (given the circumstances of low levels of interest rates and regulatory burden). Number of banks in the pre-COVID-19 system was 20, 11 of which were under foreign ownership. With respect to ownership structure of banks and their share in total banks assets, approximately 90% of them were under foreign and only 10% under domestic ownership (this share has remained almost unchanged during the last fifteen years). In the number of banks, however, a decreasing trend was recorded over the years – smaller regional banks were being pushed out of the market or taken over by bigger foreign banks, opening a number of questions with regard to interests of national economy in the future. Concentration indicators within sector were rather high, with asset share of the two (five) largest banks in the total assets of banks being 47,59% (80,54%) for year-end 2019 and Herfindahl – Hirschman index exceeding 1.650 (CNB, 2021c).

Total credit institutions assets at the end of 2019 amounted HRK 433,8bn, while profit for the year amounted HRK 5,8bn (CNB, 2020a). Solid profitability indicators recorded in the last few years came as a result of rising operating income as well as relatively lower value adjustment charges. Both Return on assets and Return on equity rates were recording satisfactory levels, ending 2019 with 1,37% and 9,82%, respectively (CNB, 2021c). Loans accounted for approximately 58% of total assets. The share of non-performing loans in total loans was still higher in comparison with other EU countries, but the times preceding COVID-19 outbreak were characterized by the improvement of the loan portfolio quality as a result of good macroeconomic environment and, even more importantly, sales of non-performing loans. Recorded levels of non-performing loans in the past few years were covered by impairment and provisions to a large extent and were not causing severe pressures on capital. A significant portion of total assets referred to currency and deposits as well as securities, indicating favourable liquidity position (liquidity buffers are mostly held in form of withdrawable central bank reserves, cash and central government instruments). Liquidity indicatiors were above

regulatory minima and system's capital position was considered favourable as all banks had total capital ratio higher than the regulatory requirement and overall system's capital ratio was among highest in European countries. Those capital levels are considered sufficient for covering total risk exposure (mainly credit, market and operational risk). Although the share of HRK loans has been recording an increasing trend lately, the proportion of loans in foreign currency is still relatively high, causing considerable exposure of the system to currency-induced credit risk. A sharp depreciation of the domestic currency would therefore result in significantly increased credit risk (luckily, such scenario is quite unlikely to happen). Also, due to the structure of loan portfolio with regard to interest rate types, the system is moderately exposed to interest rate-induced credit risk. Furthermore, banks are highly exposed to the central government which is a significant exposure concentration risk and one of the causes of moderate profitability indicators. Another source of concern in the last few years are increased volumes of general-purpose cash loans – both from credit risk and profitability perspective. Large volumes of such non-collateralized loans that generate significant portion of interest income (their share in total interest income significantly exceeds their share in total loans) are seen as a potential threat in case of credit risk materialization. As far as banks liabilities are concerned, deposit liabilities structure has been considerably changed under the influence of both long period of low interest rates as well as taxation of interest payment on savings, causing increased significance of transaction account deposits and furtherly pointing out the need for stable and adequate long-term funding.

However, all things considered, Croatian banking system is considered stable. This conclusion was confirmed by European Central Bank after comprehensive assessment conducted during 2019 on five Croatian banks that have recently been classified as significant or could potentially become significant and that account for approximately 80% of system's total assets. The exercise comprised an asset quality review (AQR) and stress-test. The AQR is a prudential rather than an accounting exercise, and provides the ECB with a point-in-time assessment of the carrying values of banks' assets on a particular date (30 June 2019 for the five Croatian banks). The AQR also determines whether there is a need to strengthen a bank's capital base. The AQR was complemented by a stress test exercise, which looked at how the banks' capital positions would evolve under a baseline scenario and an adverse scenario over the three-year period from mid-2019 to mid-2022. The assumptions used for the stress test scenarios could not take into account the current COVID-19 crisis, which only started to evolve in the first quarter of 2020. The comprehensive assessment shows that the five banks do not face any capital shortfalls as they did not fall below the relevant thresholds used in the AQR and the stress test - Common Equity Tier 1 ratio of 8% for the AQR and the stress test's baseline scenario, and a CET1 ratio of 5,5% for the stress test's adverse scenario (ECB, 2020). As a result, a close cooperation between European Central Bank and Croatian National Bank has been established, bringing Croatia one step closer to adopting euro as national currency. It is quite intriguing that Croatian banking system was confirmed as a system with stable capital position that should endure stress periods just a few months before COVID-19 outbreak. Now, in the times of the coronacrisis, Croatian banks have to prove its resilience.

3. COVID-19 outbreak and policy response

As indicated before, COVID-19 has caused a fairly unique crisis. It has severely reduced economic activity of many sectors or even stopped it, but has also increased the revenues of some others. Businesses working in areas such as tourism or transport are losing revenues, while the ones operating in digital areas such as e-commerce appear as COVID-19 winners. However, all sectors considered, economic activity has been seriously diminished, which had numeous repercussions not only for non-financial business entities and households, but also for the

financial sector. Decreased economic activity combined with high uncertainty levels resulted in increased risks for the global financial stability. Generally, banks are affected in such situations because firms that do not operate and households whose residents have lost jobs or are recieving far less income than usual might not be temporary able to repay its loans, which will result in lost revenue and lower profitability for banks. Not only that, if the repayment ability is permenently endangered, it will negatively affect banks' capital. Losses related to loans are surely the ones with biggest impact and the primary concern, but are certainly not the only ones. Even in case of increased loan demand during the „tough times" (not implying that the lending activity increases as well), there is usually a decrease in demand for other bank's services. Thus, lower economic activity also brings lower non-interest income for banks. Another source of possible negative impact are the prices of traded instruments – in case of decreased value, banks will record losses (which was the case in the Croatian banking sector in the first quarter of 2020, just after the COVID-19 outbreak).

Being aware of the crucial roles banks will have in overcoming this all-inclusive crisis, the EU governments, European Central Bank and as well as national banking authorities have introduced a various set of measures designed to blunt the impact of coronavirus shock and ensure the on-going bank lending to the wider economy, especially in the first half of 2020. Such steps were taken to avoid the procyclical credit crunch that was evident during the global financial crisis, encouraging banks to use the flexibility embedded in the global regulatory framework to deal with the temporary consequences of COVID-19 shock and thus stifle negative feedback loops that could amplify the impact of the crisis. Following a decade during which banks aggresively built their capital positions, standard-setting bodies have issued guidance to support national authorities in their policy response to the pandemic (IMF, 2020, 72).

An unprecedented coordinated policy response was recorded in Croatia, with a high number of timely deployed measures. According to jurisdiction, the measures can be classified as monetary, regulatory, fiscal or other. Some of them, mentioned in this paper, had or are expected to have the most significant impact on national banking system and are used as explanations for balance sheet developments. In the monetary area Croatian National Bank had to respond strongly since the EUR/HRK exchange rate reached 7.63 in mid-April, having depreciated by 2.5% from February (when Croatia was still corona-free). This prompted the CNB to intervene in the foreign exchange market by selling a total of EUR 2.7bn to the banks, thus stabilising the exchange rate of the kuna. Also, a currency swap line was agreed with the ECB that enables EUR 2bn worth of kuna to be swapped for the euro. The CNB replaced the kuna liquidity withdrawn in foreign exchange interventions by conducting structural and regular open market operations, fine tuning operations during which securities of the Republic of Croatia were purchased, and by reducing the reserve requirement rate from 12% to 9% (CNB, 2020e, 11). With expansionary monetary policy measures CNB managed to lower the financial tensions and has helped preserving financial stability.

Also, a set of regulatory reliefs was introduced in order to enhance banking activity. Given the circumstances of heavy regulatory burden in the past decade, any form of regulatory flexibility was welcomed. Flexibility in prudential treatment of non-performing loans (NPL) as well as in loan provisioning, temporary permit for liquidity coverage ratio (LCR) being below the regulatory minimum and lowering risk-weighted assets are just some of them. Given that the LCR serves to preserve the liquidity of credit institutions in stress situations, credit institutions were allowed to temporarily use their liquidity buffers to support and maintain the liquidity of the economic system of the Republic of Croatia (CNB, 2020d). Lowered risk weighted assets came as a consequence of earlier introduction of a number of capital relief measures under *Capital Requirements Regulations 2 (CRR 2)* and some transitional arrangements taken by the European Commission to mitigate the economic impact of the Coronavirus pandemic across

the European Union and has resulted in increased capital ratios. Another measure that had direct influence on capital levels is the decision of retaining the profit made by banks in 2019. Also, credit institutions had to appropriately adjust their variable remuneration payments and in January 2021 a Decision on a temporary restriction of distributions was issued by CNB. Moreover, banks' reporting to the CNB has been significantly intensified, enabling the CNB an up-to-date overview of the banking sector stability.

Most of the government-made measures were designed to support the real economy, but will also have an indirect impact on banking business. Deferral or write-off of certain tax liabilities for companies heavily hit by the pandemic, job preservation supports as well as approval of credit guarantees and extending the maximum guarantee rate should have favourable effect on national banking system. In case of increased default rates among clients whose loans are secured by a guarantee, this burden-sharing mechanism will decrease possibly significant bank losses.

One of the mostly discussed policy measures refers to credit moratoria. At the very beginning of the coronacrisis Croatian Government has agreed with banks to ensure a temporary suspension of repayment of obligations due, i.e. to introduce a minimum three-month moratorium for retail and corporate clients that were hit by the pandemic. Additionally, banks were allowed to use a more flexible approach when changing repayment terms for existing credit obligations. The introduced moratoria has a couple of downsides, the most significant of them being the lack of monitoring borrowers' actual financial health, possible credit crunch and NPL rise upon moratoria expiration. Due to this measure, there are no signs of asset quality deterioration yet, but NPL ratio is certainly expected to rise. All of introduced measures managed to preserve financial stability so far, but have also temporarily masked some of the problems that will inevitably arise in the near future. Furthermore, bankruptcy rate will most likely continue to grow, additionally affecting domestic banking system.

4. Early effects of COVID-19 on banks' balance sheet

In 2020 total credit institution assets grew by 7,28% (from HRK 433,8bn in December 2019 to HRK 465,4bn in December 2020), reaching its record-high. Total liabities increase has accelerated due to the increase of residents' total deposits, while the capital amount grew, but not to such extent. Reason for capital augmentation is mainly the increase of retained earnings since banks were encouraged not to pay out dividens, which was partly offset by sharp decrease in current year profit. Overview of the most significant balance sheet items during the observed period is given in Table 1. Main data source are CNB's Aggregate non-consolidated quarterly statistical reports.

Table 1: Selected items of aggregate non-consolidated credit institutions balance sheet

in HRK thousand	31.12.2019.*	30.6.2020.	31.12.2020.
Total Assets	**433.807.088**	**452.402.847**	**465.402.576**
of which: Currency and deposits	*100.269.232*	*102.264.043*	*118.772.962*
of which: Securities	*63.865.324*	*62.340.719*	*63.349.355*
of which: Loans	*250.402.230*	*267.953.926*	*264.756.591*
Total Liabilities	**373.712.673**	**391.675.940**	**403.176.597**
of which: Deposit liabilities	*335.011.975*	*349.473.561*	*363.224.396*
of which: Loans	*16.148.499*	*19.323.450*	*18.692.981*
Total Capital	**60.094.415**	**60.726.907**	**62.225.980**
of which: Share capital	*32.730.627*	*32.745.248*	*32.784.676*
of which: Current year profit	*5.810.241*	*1.688.516*	*2.710.545*
of which: Retained earnings	*16.784.133*	*20.621.970*	*22.217.822*

* audited data

Source: CNB, Aggregate non-consolidated statistical reports

Mentioned asset growth is not unique for Croatian banking system, since the similar trend can also be seen in banking systems of other European countries, even to a much bigger extent. It is mainly the result of increase in liquid assets (predominantly deposits with the Croatian National Bank) and loans granted. Total loans increased by approximately 5,7%, reaching HRK 264,8bn in December 2020. Although the share of loans in total assets grew throughout the year, at the end of 2020 it decreased by 0,83 percentage points when compared to the same period last year (as a consequence of significant increase in currencies and deposits, especially in the last quarter of 2020). However, the aggregate loan values mask some important differences between counterparty types.

Table 2: Total loan brakedown, by counterparty type

in HRK thousand and % of total loans		31.12.2019.*	30.6.2020.	31.12.2020.
Government units	Amount	41.814.737	48.152.948	49.400.294
	%	16,70%	17,97%	18,66%
Financial institutions	Amount	3.546.681	3.050.983	3.876.051
	%	1,42%	1,14%	1,46%
Non-financial corporations	Amount	73.499.723	77.403.851	77.071.252
	%	29,35%	28,89%	29,11%
Households	Amount	126.568.116	127.162.246	128.523.358
	%	50,55%	47,46%	48,54%
Other**	Amount	4.972.973	12.183.898	5.885.636
	%	1,99%	4,55%	2,22%
Total		**250.402.230**	**267.953.926**	**264.756.591**

* audited data

** loans to non-residents and non-profit institutions serving households

Source: CNB, Aggregate non-consolidated statistical reports

In absolute amounts, banks recorded an increase in loans to almost all counterparty types, but not to the same extent. Significant loan increase is mainly the result of increased government financing needs, which led to the further growth in the already high banking sector exposure to the government units. Share of loans to government units in total loans rose by 1,96 percentage points, reaching 18,66% of total loans. Such rise in government financing needs are no wonder, given the circumstances of overall decrease in economic activity and the set of government measures taken to reduce the negative impacts of the pandemic. A significant increase during the year was also recorded in loans to Other counterparty types, primarily to foreign financial institutions. However, this share was reduced in the last quarter of 2020 and brought down to the 2019 similar levels. In corporate lending a considerable growth was recorded in the first quarter of 2020 as companies were anticipating the crisis ahead and using available credit lines. However, this lending growth was stopped in second quarter, since the underwriting standards tightened.

Figure 1: Total loans to households in HRK thousand, brakedown by loan type
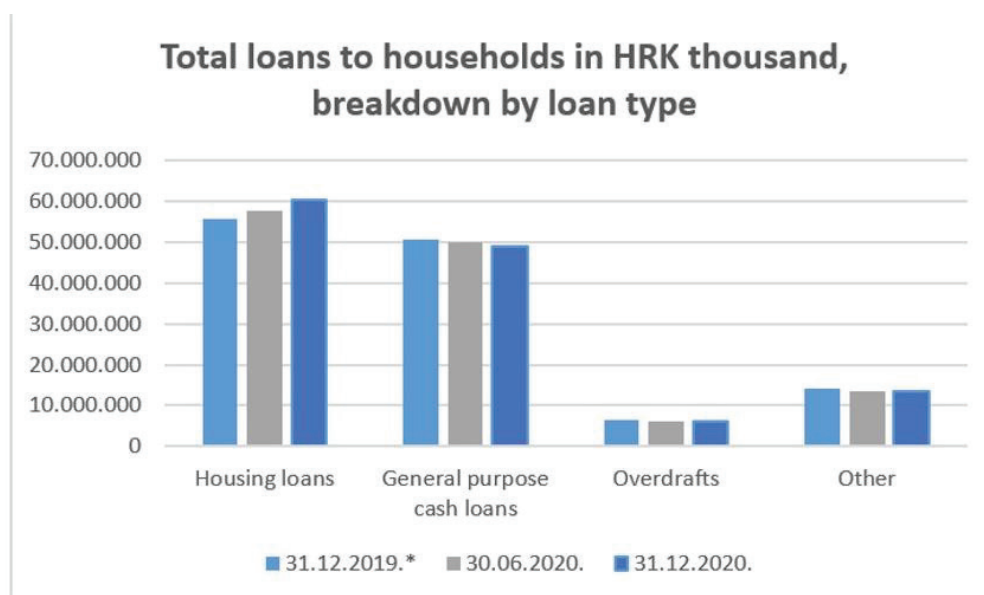
* audited data

Source: CNB, Aggregate non-consolidated statistical reports

Despite the total loan growth, there was almost no changes in share of non-performing loans – NPL ratio amounted 5,43% in December 2020, which is by 0,04 percentage points lower than the share recorded at the end of 2019 (CNB, 2021c). Such movement is mainly a consequence of previously mentioned measures introduced by national authorities, but a considerable increase in the materialization of credit risk is expected.

The second largest asset item - currency and deposits – rose remarkably (by 18,5%), predominantly in the last quarter of 2020. While the deposits with the CNB were declining throughout the year, deposits with foreign financial institutions were growing, additionally exposing domestic banks to foreign financial institutions. This exposure increase, both in form of deposits and granted loans, was encouraged by liquidity excess, low counterparty risk as well as low capital requirements for such exposures. However, the situation changed in the last quarter when an enormous increase of HRK 18,4bn was recorded in deposits with the CNB. At the same time, volume of securities in banks' balance sheets did not record significant changes. From asset structure changes in the first couple of quarters after the coronacrisis outbreak it might be assumed that one the most responsible tasks the banks were given – supporting the real sector's financing needs – is so far not being accomplished to the required extent. This task might get even more challenging if large-scale insolvencies in private sector arise. With such business activities banks are sacrificing part of their profits for the sake of preserving stability, which is highly noticeable when taking a look at their income statements and profitability indicators.

2020 was also a year of record-high resident deposit growth. Regardless of the previously mentioned loan guarantees introduced to stimulate lending activity, private sector's deposits have grown much faster than the loans. Total liabilities deposits in December 2020 amounted HRK 363,2bn i.e. grew by 8,42% compared to end of 2019. Again, the most significant increase was seen in the last quarter. Share of deposit liabilities in total liabilities and capital remained stable and accounted for approximately 77%-78% throughout the observed period. However, previously mentioned deposit liabilities growth refers almost exclusively to transaction account deposits, whereas time deposits recorded decline both in absolute and relative terms. This is why a significant change in the structure of the total deposit liabilities can be noticed (the share

of transaction accounts deposits in total deposit liabilities increased by almost 6,5 percentage points when compared to the pre-COVID-19 times, as shown on Figure 2). This developments are just a continuation of the aforementioned trend in deposit liabilities structure, that were previously encouraged by low interest rates and taxation of interest payment on savings. Nevertheless, the changes related to deposit liabilities cannot be declared as unexpected. COVID-19 outbreak was immediately followed by financial market instability and strong withdrawals of funds from investment funds, which may be assumed to have been partly transferred to residents' deposits in banks. Deposits also grew because households limited their spending, for both objective and precautionary reasons, because of the pandemic and containment measures, surrounded by heightened uncertainty, and increased their bank account balance (CNB, 2020e, 39). Loan liabilities also recorded considerable growth, but to a lot smaller extent, mainly as a consequence of increased volumes of loans from financial institutions.

Figure 2: Total deposit liabilities, brakedown by type
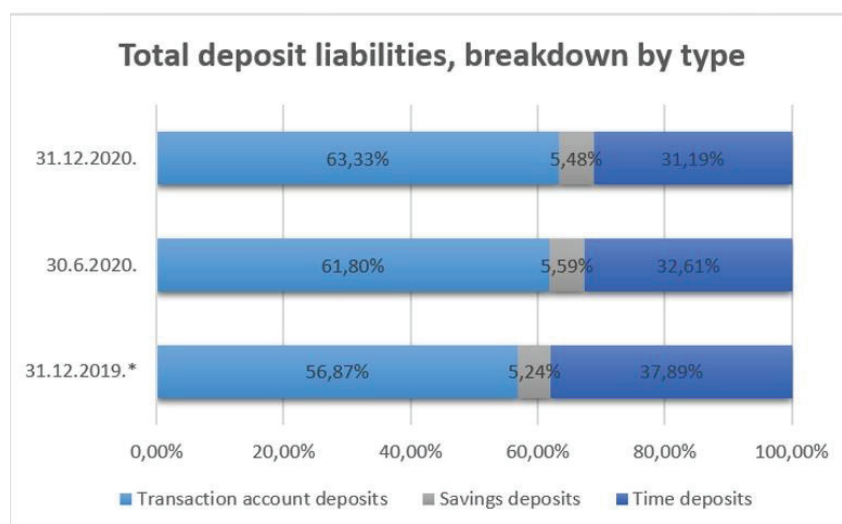
Source: CNB, Aggregate non-consolidated statistical reports

Total capital amount rise resulted from increase in retained earnings. Retaining the profit made in 2019 was one of the CNB supervisory measures with ultimate goal of maintaining stability in domestic financial market. Current year profit in 2020 amounted HRK 2,71bn, which is only approximately 47% of the last-year's profit. Changes in amounts of other capital items did not have significant influence on total capital amount.

5. Further implications of balance sheet changes

The newly introduced set of meaures had a significant impact on banks' balance sheets, which has left a number of consequences on banking business. The most important implications of balance sheet changes are described in the text below.
One of the most significant implicantions refers to highly-increased liquidity. Banks were accumulating their liquidity buffers and preparing for weaker cash-flows in the near future but by now a liquidity surplus has been recorded, not a deficit. This kind of developments is encouraging, taken into account that one of most common causes of bank fails recorded is

liquidity crisis. According to CNB data, total liquidity coverage ratio[1] amounted 173,71% at year-end 2019 (which is far above the regulatory minimum of 100%) and has reached 181,94% by the end of 2020, indicating that short-term liquidity of the system is not compromised since banks hold more than a sufficient reserve of high-quality liquid assets to survive a period of significant liquidity stress lasting 30 calendar days. Not a single bank recorded LCR below 100% in 2020 although it was permitted by the supervisor.

Previously mentioned decrease in risk weighted assets (RWA) came as a result of revised prudential framework as well as targeted "quick fix" amendments to EU banking rules prescribed in the *Capital Requirements Regulation,* such as the preferential treatment of exposures to national governments and central banks of EU member states denominated in a currency of another member state or introduction of reduced risk weights for exposures to small and medium enterprises (SME) or infrastructure project entities (IPE). The supporting factors for such exposures refer to a capital reduction factor in the amount of capital that banks need to hold for prudential reasons in respect of loans they grant, allowing favourable treatment of certain exposures to SMEs and infrastructure with a view to incentivise banks to prudently increase lending to those entities. In the context of the Coronavirus pandemic, it is essential that banks continue lending to SMEs and supporting infrastructure investments (European Commission, 2020). A new risk weight was also introduced for certain loan types available to pensioners or employees (loans backed by the borrower's pension or salary). All of the mentioned measures were effective from June 2020 and designed to stimulate credit flow to both public and private sector of the EU member states. But for now, their impact can mostly be seen in decreased risk weighted assets i.e. capital ratio denominator, which led to increased capital ratios. A significant impact on total risk exposure amount[2] of national credit institutions is noticeable after the introduction of the aforementioned measures, which is why total capital ratio[3] started to grow considerably in second quarter of 2020 and amounted 24,91% by the year end, reaching its record-high levels. According to Croatian Banking Association, Croatian banks' capital adequacy ratio before the coronacrisis was one of the highest among European countries reporting to the IMF within the Financial Soundness Indicators database.

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[1] Liquidity Coverage Ratio (LCR) is calculated as a stock of high-quality liquid assets divided by total net cash outflows over the next 30 calendar days.

[2] Total risk exposure amount consists of risk weighted exposure amounts for credit, counterparty credit and dilution risks and free deliveries, total risk exposure amount for position, foreign exchange and commodities risks, total risk exposure amount for operational risk, total risk exposure amount for credit valuation adjustment and other risk exposure amounts.

[3] Total capital ratio is calculated as total risk exposure amount divided by total own funds (i.e. Tier1 + Tier2 capital)

Figure 3: Own funds and risk exposure of credit institutions
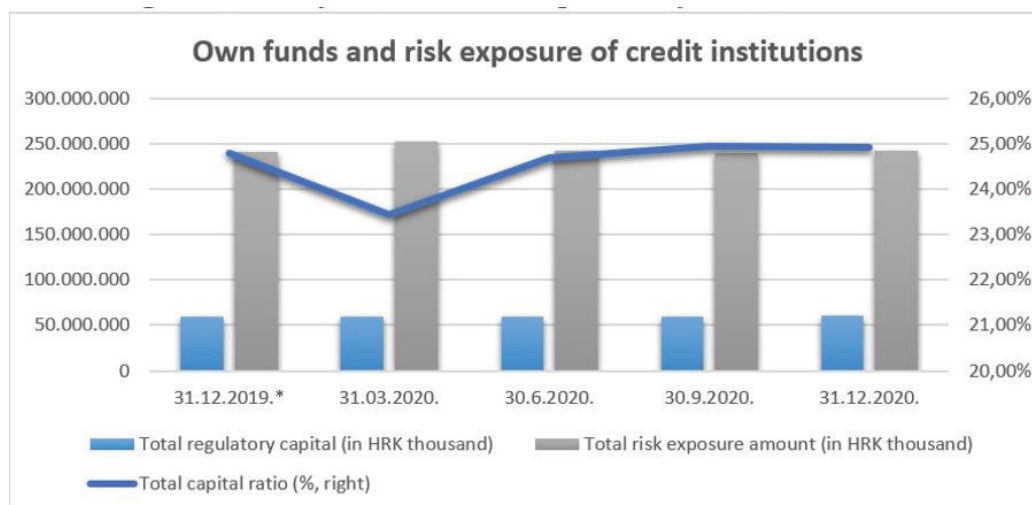
Source: CNB, Own funds and risk exposure of credit institutions

One of the most concerning COVID-19 impacts refers to further revenue pressures and low profitability for the banking sector already threatened by long periods of low interest rates. As previously indicated, this crisis is special in many ways - some sectors are severely affected, while others record an increase in activities and employment. A sort of duality can also be observed within the banking sector. The continuation of credit growth and the growth of the total capital ratio, which reached a historical maximum of almost 25%, are reminiscent of pre-crisis times. On the other hand, the sharp decline in net income and profits is reminiscent of the strength of the COVID-19 recession, whose impact on banks will be fully manifested in the upcoming period (Croatian Banking Assocciation, 2020). The changes in the asset structure generated in the 2020 support this forecast – high volumes of liquid assets and safe, but low profitable lending in form of loans to government and housing loans to households will definitely deepen the revenue pressures. The increase in state financing needs in 2020 has strengthened the connection between the state and the banking sector, causing possible issues not only from the profitability perspective. According to some research, banks' exposure to the central government and the level of public debt are related and there is a growing risk of the sovereign bank "doom loop". Such a strong connection between banks and government is typical for some of the central and eastern European countries, and it might pose a threat in case government would be forced to bail out a bank that holds a large piece of government debt which raises the question of sovereign debt sustainability over the medium term. Luckily, the current state of national banking system does not show such instabilities that would require bailing out, but the issue of the connection between banking sector and government debt should certainly be kept in mind. One of the most concerning segments in the domestic system are non-collateralized general-purpose cash loans that recorded decline both in absolute and relative terms and that present a threat from the two perspectives: firstly, in pre-COVID-19 times they accounted for approximately one third of total interest income which is why the recorded decline might considerably endanger banks' profitability; and secondly, unfavourable macroeconomic situation resulting in decline of disposable income of households largely increased the probability of the materialization of risks accumulated during the period of high growth in cash loans. In the previous period these risks were also augmented by the fact that some of these loans were granted under relatively lenient criteria and without information from the Croatian Registry of Credit Obligations (HROK) (CNB, 2020e, 45). This will inevitably result in NPL increase, which was recognized by the banks already at the very beginning of the

pandemic when they started preparing for a „spike" in non-performing loans, which resulted in heavily increased provisions and diminished profitability indicators. Another probable source of significant NPL rise among non-financial corporations are sectors heavily hit by the pandemic. Part of those bad loans will be covered by state guarantees, but most of the problems will still have to be resolved by banks. All together, the COVID-19 crisis makes evident that low interest rates are here to stay for much longer than was expected before the crisis. This will lead to further pressure on banks' profitability and, in turn, cutting costs. In any case, banks will again suffer a surge of NPLs due to the crisis which, together with persistent low profitability, will impair their ability to generate capital, constraining the capacity to provide loans to the real sector (Carletti et al., 2020, 16).

This also raises the question whether this situation might cause an asset quality crisis. The NPL level in domestic banking system was above the EU average even before the crisis. After the expiration of the moratorium and other measures, i.e. when the significantly increased credit risk materializes these levels will be far higher. In the previous period, banks were selling their bad loans to the NPL investors whose presence, both in Croatia and EU, has been largely increased. This year, however, the amount of NPL sold has been severely decreased. So, whether the coronacrisis will turn into an asset quality crisis will depend on various factors, among others, the recovery of the NPL investors' market.

In medium and long run a number of changes can be expected. Previously mentioned profitability pressures (especially in smaller banks) will possibly promote consolidation in the banking sector since it would allow banks to reduce costs and diversify income sources. Even the regulators would favor further consolidation if it would result in strengthened stability of the system (high-value mergers and acquisitions are already happening in some of the biggest European countries since it is widely considered that leaner banking sector is favourable for eurozone's financial system). In that scenario, the current downward trend in the number of banks operating in domestic banking system would be continued, while the already high concentration indicators would continue to grow. While the final effects of COVID-19 are still hard to predict, some of the authors are already proposing a whole new bank business model for the post-COVID-19 world stressing out digitalisation and technology-driven changes in financial services, threat of FinTech competitors in some segments of the business, increase in operational risk (cyber risk in particular) and promotion of banking consolidation. The COVID-19 epidemic has indeed led to an impressive acceleration of the digitalization process in the banking industry. For example, the industry has started operating almost entirely remotely quickly – online banking, remote working, e-commerce and electronic payments are on the rise and these trends are here to stay, particularly if social (physical) distancing has to remain in place in the medium term. This massive and sudden increase in digitalization channels entails a significant increase in operational risk – cyber risk in particular – that will require banks to make appropriate adjustments to their risk management functions. The banks that can react quickly will be better able to use and exploit the benefits of more advanced technology relative to before the crisis, but they will face the threat of digitally able Fintech and BigTech competitors in some segments of the business. The rapid shift towards a more digital world as a result of the confinement policies in response to Covid-19 is a reminder that the speed of change may take the sector (and everyone) by surprise (Carletti et al., 2020, 19).

Also, the policy support is still needed. Financial stability risks are in check so far, but action is needed to address financial vulnerabilities exposed by the crisis. Policymakers face an intertemporal policy trade-off between continuing to support the recovery until sustainable growth takes hold and addressing financial vulnerabilities that were evident before the pandemic or have emerged since it began. These include rising corporate debt, fragilities in the nonbank financial institutions sector, increasing sovereign debt etc. Employing

macroprudential policies to tackle these vulnerabilities is crucial to avoid putting growth at risk in the medium term (IMF, 2021, 7).

6. Conclusion

Significant decline in social and economic activity arised as a consequence of COVID-19 pandemic has arrived unexpectedly and affected both public and private sector. Domestic banking system, that was operating under considerable pressure caused mainly by long periods of extremely low interest rates and heavy regulatory burden before the coronacrisis, is now additionally pressured and called to play its countercyclical role to help national economiy recover from negative impacts of the pandemic. To support it, national authorities have introduced a set of various measures designed to overcome this "all-inclusive crisis", such as conducting structural and regular open market operations as well as fine tuning operations, introducing credit moratoria, credit guarantees, using flexible approach in prudential treatment of NPLs and loan provisioning and lowering risk-weighted assets. The measures taken were to preserve banking sector's liquidity and stimulate credit flow to both public and private sector. Liquidity has not been an issue by now, but the credit flow to private sector is not reaching the desired levels. Also, the measures are temporarily covering some of the problems that will enevitably arise upon their expiration.

By now, banks balance sheets recorded noticeable asset growth driven by increase in liquid assets and lending activity. A significant portion of new loans was directed to government units thus strengthening the interconnectedness between the banking sector and government, which increases systemic risks for the financial system. Part of the funds was also directed to the household segment, but almost exclusively in the form of low-profit housing loans additionally stimulated by housing loan subsidies implemented by the Croatian Government, whereas general purpose cash loans, one of the main sources of interest income, recorded decline both in absolute and relative terms. There is a serious shortage of credit given to non-financial corporations, which negatively affects private sector's ability to cope with the crisis, but preserves banks' financial stability to some extent. Due to the implemented moratoria, there were no signs of asset quality deterioration in the first couple of months after the crisis outbreak, but NPLs are certainly expected to rise. In 2020 a record-high resident deposit growth was recorded as a consequence of increased volumes of transaction account deposits. If such trend continues in the long run, the need for stable and adequate long-term funding will be emphasized; but as for now, domestic system' banks have a strong client base, solid capitalization levels and rely on stable sources of funding. Capital levels experienced certain oscillations at the very beginning of the crisis, but remained stable, whereas capital ratios are reaching historical maximums under the influence of both regulatory changes and supervisory measures. Changes recorded in banks portfolio structure will certainly be reflected on system's profitability, that was already under pressure before the crisis. Short-term effect of the coronacrisis can be summarized into lower regulatory pressure and a number of measures introduced by national authorities that resulted in strong rise in lending activity to government units and a sharp decline in profitability.

Since there is a lot of uncertainty with regard to further developments of epidemiological situation, final effects of the crisis are still difficult to predict. An economic recovery is expected in 2021, but the intensity of recovery is still uncertain. However, NPLs are expected to rise and cause asset quality deterioration, and the changed portfolio structure coupled with interest rates that are expected to maintain its low levels will continue to threaten system's profitability, forcing banks to find new ways to deal with it. Still, Croatian banking system is considered relatively stable and despite its several weak points, has significant liquidity buffers and

favourable capital position, that should be sufficient to overcome a crisis arising as consequence of an external shock, and not resulting from an inherent system's weakness.

Future research should extend the theoretical framework (assuming that more scientific papers on this topic will be available) as well as take longer time-series into account. Further aspects that can be considered are: (a) difference in the coronacrisis effects depending on bank size and ownership structure and (b) difference in coronacrisis consequences on Croatian banking sector and banking sectors of other comparable countries. These aspects remain open for future research.

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2. ENTREPRENEURSHIP

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ANALYSIS OF ENTREPRENEURIAL INFRASTRUCTURE IN THE AREA OF THE ZAGREB URBAN AGGLOMERATION WITH A REVIEW OF SERVICES DURING THE COVID-19 PANDEMIC

ABSTRACT

The subject of the paper is the analysis of the development of the entrepreneurial infrastructure network in the urban agglomeration of Zagreb, the meaning and connection of this development with the level of development and competitiveness, and research of the perception of entrepreneurs about their satisfaction with working in zones and using the services of entrepreneurial support institutions, based on experience, especially during the COVID-19 pandemic.

In the last two decades, a total of around HRK 169.3 million (EUR 22.5 million) has been invested in the Zagreb County and part of the neighboring Krapina-Zagorje County, which is part of the Zagreb urban agglomeration, and the result is the activation of 34 entrepreneurial zones financed from public resources and the generation of about 8,600 jobs. Further intensive investments in zones are underway, especially in the western part of the agglomeration. Despite some progress in the development of entrepreneurial zones and entrepreneurial support institutions as a whole, there are still significant constraints and room for improvement of development policy, but also for further research in the coming period.

The content structure includes seven points, in which, after the introduction, the theoretical framework and previous research, the connection of entrepreneurial infrastructure development with the level of development and competitiveness of the area, the state and development of the infrastructure network and the results of the SWOT analysis survey are given. In the end, conclusions and numerous suggestions for improvement are given, in order for this largest Croatian urban agglomeration to become a place with a well-developed entrepreneurial environment and an example of good practice.

The paper uses scientific methods such as: analysis method (desk-research and SWOT analysis), survey research method, synthesis method and comparative method.

Keywords: *entrepreneurial infrastructure, entrepreneurial support institutions, urban agglomeration Zagreb, COVID-19.*

1. Introduction

Starting from the importance of entrepreneurship as a driver of economic development and wealth of the people and developed entrepreneurial ecosystem, and thus entrepreneurial infrastructure as a part of this system, the paper provides an analysis of the entrepreneurial infrastructure network, primarily entrepreneurial zones in the area of the city of Zagreb and its spatial environment, together with the assessment of the quality of services of entrepreneurial support institutions. In addition, a review is given of the role of zones and support of local government units and advisory services of support institutions to entrepreneurs during the COVID-19 pandemic.

The aim of this paper is to investigate the characteristics of the development of entrepreneurial infrastructure in the selected area, the relationship with the level of development and competitiveness, assess their development and accessibility to entrepreneurs, but also the quality of services of entrepreneurial support institutions and propose measures for their improvement. The purpose of this paper is to confirm the importance and encourage investment in the construction and development of entrepreneurial infrastructure at the regional and local level, for the purpose of attracting investors, entrepreneurship growth, employment growth and overall economic and social development.

This paper focuses on the state of the entrepreneurial infrastructure network of the Zagreb urban agglomeration, with a comparative analysis of developments in the scope area and the perception of satisfaction of entrepreneurs based on experience, especially during the COVID pandemic.

This example also raises the research question why some regions (counties), cities and municipalities provide better support for the development of entrepreneurial infrastructure than others.

The answers to these and other open research questions were sought on the one hand by analyzing the available empirical data, and on the other hand by conducting an online survey among entrepreneurs – users of entrepreneurial zones, and by using secondary sources.

2. Theoretical bases and previous research

Entrepreneurship is a key driver of a healthy economy, its rejuvenation, social change and technological development. The correlation of key economic variables between economic growth and the level of entrepreneurial activity has long been confirmed by the work of many researchers (Audretsch et al., 2002; Carlsson, 1992). This applies equally to the level of individual activities, regions as well as to the national level.

Numerous scientists have written about entrepreneurship as a fundamental factor of economic development, such as: Drucker, P. (1992), Getz, D., Carlsen, J. (2005), Lordkipandize, M., Brezet, H., Backman, M. (2005), Baletić, Z. (1990), Gorupić, D., Gorupić, D. Jr. (1990), Kuvačić, N. (2001), Škrtić, M., Mikić, M. (2011), Bartoluci, M., Budimski, V. (2010), Bilas, V., Franc S., Sadiković, A. (2010), Bartoluci, M. (2013), Kolaković, M. (2006) and many others. Most authors emphasize the role of entrepreneurship in development, especially in the development of small and medium-sized enterprises in various sectors of economic activity.

According to Grgić, entrepreneurship is an important driver of economic growth in the sector, industry and the economy as a whole. Although entrepreneurial activities vary from country to country, their role in shaping the economic environment is unquestionable (Grgić M., Bilas F., Franc S., 2010).

As an important conclusion of previous research, it is pointed out that economic development requires a friendly entrepreneurial environment, i.e. an appropriate entrepreneurial ecosystem that represents support for entrepreneurial activities.

American academic Porter, known for his theory of economics and business strategies, says: "Nations choose prosperity if they create such policies, laws, and institutions that support productivity growth" (Porter, 1990, 13). When talking about competitive advantages and competitive strategies, he notes that competitive advantage is created and maintained through a highly localized process, and differences in national values, culture, economic structures, institutions, and history contribute to competitive success (Porter, M.E., 1990, 73).

In Croatia, the entrepreneurial infrastructure began to develop more intensively only in 2000, and there is very little scientific research on this topic. Some scientific research dates back to 2010 (Alpeza et al., 2012; Šmaguc, Vuković, 2018), and relates primarily to the analysis of the development of entrepreneurial zones or entrepreneurial support institutions and their impact on economic development or competitiveness of individual counties and regions and questioning efficiency of investments in zones that are gradually being built and equipped, mainly with public funds, in accordance with the financial possibilities and the political will of local authorities.

The GEM survey[1] has been conducted in Croatia since 2002, concluding in its GEM Croatia Report for 2018, among other things: "The entrepreneurial environment in Croatia still has a more restrictive than stimulating effect on entrepreneurial activity." According to experts, only two components (availability and quality of physical infrastructure - telecommunications and transport, and the dynamics of the domestic market) have a stimulating effect on entrepreneurial activity (Singer et.al, 2019, 107). Based on such research at the national level, it is possible to design evidence-based policies, in order to improve the business context by removing the identified constraints.

However, it should be noted that in this study, physical infrastructure in Croatia is the best rated component of the entrepreneurial environment (score above 5) and its availability and quality have a supportive effect on entrepreneurial activity, although in the period 2016-2018 these scores fell (from 6.21 to 5.61) and are below the EU average (Singer et al., 2019, 90).

Due to all of the above, further research on this topic is very much needed at the Croatian level as well as a comparative analysis at the regional and local levels.

3. The connection between the development of entrepreneurial infrastructure and the level of development and competitiveness

In the area of the Zagreb urban agglomeration, i.e. the Zagreb city region, this correlation has been absolutely confirmed in all previous research dealing with the socio-economic development of the Zagreb area (Šimunović, Filipić, 1995; Žuljić, 1999, Wertheimer - Baletić et al., 1990, Rajic, 2020). Although the measurement and more detailed analysis of this interdependence goes beyond the dimensions of this paper, here are the cumulative results of secondary comparative research of the level of development of counties and local units within this agglomeration, which change dynamically over time, as well as development itself.

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[1] GEM - Global Entrepreneurship Monitor is the world's largest survey on entrepreneurship in which Croatia has participated since 2002, conducted by CEPOR - Center for SME and Entrepreneurship Development Policy in cooperation with a research team from the Faculty of Economics in Osijek, J.J. Strossmayer in Osijek

The results of the ranking of Croatian macro-regions and counties with regard to the level of development in 1971 and 1991 according to the multi-criteria method PROMETHEE (Šimunović, Filipić, 1995), confirm that Zagreb County, in both these years, was at the bottom of the ranking (21st) of counties, Krapina-Zagorje County was in 17th place, and the City of Zagreb, as a constant, in first place.

Almost thirty years later, the level of development of the surrounding counties, i.e. local self-government units that are part of the agglomeration, has been raised to a much higher level. The level of development of regional and local units in Croatia is monitored and publicly announced by the ministry for regional development, in accordance with the Decree on the level of development (OG 131/2017). The last such procedure was carried out for 2018 and confirms the significant progress of the Zagreb County as well as individual local units in its composition on the ranking list according to the development index.

The Development Index is a composite index calculated as an adjusted average of standardized values of six (6) macroeconomic indicators to measure the degree of development of counties thus classified into four (4) groups and local self-government units into eight (8) groups. According to this methodology, the development index for the period 2014-2016 for the City of Zagreb as the most developed regional and regional unit was 117,758, for Zagreb County 105,890 and for Krapina-Zagorje County 98,976 (Table 1). Thus, in recent years, Zagreb County, together with the City of Zagreb and three other Adriatic counties, belongs to the group of the most developed Croatian counties (group 4), while Krapina-Zagorje County has not significantly improved its development and belongs to group 2. At the same time, some local units in Zagreb County, according to the value of the development index, are also in the group of the most developed (group 8). This applies to satellite cities around Zagreb, such as: Sv. Nedjelja, Zaprešić, Samobor, Ivanić Grad, Oroslavlje, Bistra (Ministry of Regional Development and European Union Funds, 2018).

Enterprise and business infrastructure also affect the competitiveness of regions and cities, i.e. their ability to use competitiveness factors to maintain or increase their own competitive position. According to the methodology of the World Economic Forum (WEF) and the Institute for Management Development (IDM), the regional competitiveness index survey has been conducted in Croatia since 2007, and relies heavily on indicators of basic and business infrastructure, investment, entrepreneurial dynamics, entrepreneurship development and other economic indicators as pillars of competitiveness in the field of business sector and environment.

When it comes to the indicator of the regional competitiveness index according to the survey Regional Competitiveness Index of Croatia 2013 by counties, the results of the values of indicators of the business environment and business sector of the City of Zagreb with rank in relation to other counties in Croatia (21 in total) are stated here. Although the City of Zagreb as the county has the highest (1) final rank of competitiveness (Singer et.al., 2014, 32), it is important to recognize not only Zagreb's potentials, but also the limitations of the local business environment and business sector in order to make recommendations for future development. It should be said that the final (sum of statistical and survey indicators) environmental quality rank for Zagreb according to this research was 2, and the business sector quality rank was 3 (Ibidem, 42). According to the same previous research, the final ranking of Zagreb's competitiveness for 2007 was also 1, and 2 for 2010.

Table 1: Development index of counties and their groups with indicators for evaluation and classification, 2018

	County	Group	Index (%)	Income p/c	Revenue p/c	Unemployment rate	General change in population	Aging index	Level of education
1	City of Zagreb	4	117,758	44.733,21	6.232,49	0,1007	103,10	118,9	0,3935
2	Istarska	4	108,970	35.191,17	5.535,63	0,0654	101,17	136,8	0,2250
3	Dubrovačko-neretvanska	4	108,580	30.904,76	4.848,62	0,1323	101,07	109,4	0,2618
4	Zagreb County	4	105,890	32.579,23	3.222,84	0,1079	100,54	100,1	0,1678
5	Primorsko-goranska	4	105,278	35.367,41	5.229,00	0,1141	96,91	155,3	0,2747
6	Zadarska	3	104,654	26.630,15	3.908,88	0,1200	102,30	117,4	0,2085
7	Splitsko-dalmatinska	3	103,930	28.190,12	3.476,57	0,1923	99,75	102,3	0,2472
8	Varaždinska	3	101,713	28.714,71	2.387,25	0,0974	95,45	107,3	0,1628
9	Međimurska	3	100,502	24.835,25	2.077,08	0,1164	97,99	91,8	0,1367
10	Krapinsko-zagorska	2	98,976	28.783,48	2.092,17	0,1135	93,73	112,6	0,1266
11	Koprivničko-križevačka	2	98,493	24.587,95	2.703,28	0,1370	93,24	110,5	0,1483
12	Šibensko-kninska	2	97,041	27.315,29	3.283,90	0,1622	91,58	146,1	0,1944
13	Osječko-baranjska	2	96,009	26.216,25	2.271,75	0,2369	91,90	106,3	0,1749
14	Karlovačka	2	95,191	29.715,33	2.547,26	0,1728	88,93	149,0	0,1836
15	Požeško-slavonska	2	93,947	22.925,23	1.550,25	0,1814	87,42	99,2	0,1429
16	Brodsko-posavska	1	93,449	22.105,97	1.550,91	0,2143	90,09	96,5	0,1342
17	Bjelovarsko-bilogorska	1	92,576	23.529,44	1.912,61	0,2246	89,02	114,9	0,1310
18	Ličko-senjska	1	92,387	27.401,26	3.392,29	0,1696	86,29	166,0	0,1596
19	Vukovarsko-srijemska	1	91,992	22.256,51	1.627,30	0,2431	88,41	98,3	0,1320
20	Sisačko-moslavačka	1	91,701	27.197,16	2.502,17	0,2461	85,20	131,1	0,1481
21	Virovitičko-podravska	1	90,666	21.297,29	1.872,32	0,2613	88,54	103,3	0,1145

Source: Ministry of Regional Development and European Union Funds, Development Index
https://razvoj.gov.hr/o-ministarstvu/regionalni-razvoj/indeks-razvijenosti/112

In addition to positive statistical indicators in the field of demography, health and culture, as well as relatively favorable indicators of education, the research warns that indicators of the business environment and business sector in Zagreb should be paid attention to, as they are not satisfactory.

Namely, according to statistical indicators for basic infrastructure and the public sector, as well as business infrastructure, the City of Zagreb, according to individual indicators, ranks only 7th to last (21st) among counties. This especially refers to the indicator of the number of business zones per capita, as well as the price of water and drainage (rank 21), the average surtax rate in

the county / city (21), the prices of apartments in the city center (rank 18) and the price of utility fees for business space, I. zone, rank 17 (Ibidem, 44).

In terms of evaluating statistical indicators of the business sector according to this research, the results of Zagreb's rank are more favorable in indicators of level and dynamics of economic results, in indicators of investment and entrepreneurial dynamics as well as indicators of entrepreneurship development, due to the level of development from the previous period.

Table 2: Competitiveness rank of the City of Zagreb and Zagreb County, 2013

| County | Competitiveness rank | Of which | |
		Statistical rank	Survey (perceptual) rank
City of Zagreb	1	1	5
Zagreb County	7	6	7

Source: Regional Competitiveness Index of Croatia 2013, National Council

In the City of Zagreb, indicators of social factors, education and the level of economic results are regularly significantly better than the Croatian average, while part of the indicators of basic infrastructure and public sector and business infrastructure, according to the Regional Competitiveness Index 2013, lag behind the average. At the same time, Zagreb County had a regional overall competitiveness rank of 7, of which statistically 6 and survey 7, but environmental quality rank 4, and business sector quality rank 5. In some statistical indicators, this county, precisely because of the activation of numerous business zones ranks 5th in entrepreneurship development, 2nd in business infrastructure and 6th in investment and entrepreneurial dynamics (Ibidem, 47), out of 21 counties.

The level of development of individual regions and cities can of course be measured by other indicators of economic development such as: gross domestic product per capita, share of employees in total population, share of population with tertiary education, structural relations in economic activities, number of active entrepreneurs per 1000 inhabitants and other important indicators. A comparative analysis of these indicators goes beyond the dimensions of this paper. The correlation between the degree of competitiveness and the degree of development of counties (Singer et al., 2014, 24) confirms the importance of further research on the impact of entrepreneurial zones. The results of such research can be the basis for shaping the development policy of counties or regions as well as cities and municipalities.

4. The state of the entrepreneurial infrastructure network - comparative analysis according to spatial units

Croatia has a fairly well-developed network of entrepreneurial infrastructure, most of which are entrepreneurial zones, which have been developing intensively in the last twenty years. This confirms the fact that SME development policy has focused on the traditional development model with the aim of increasing the number of new business entities. This is the policy of a small economy, and the policy of a long-term sustainable concept of entrepreneurship development, i.e. focusing on innovative and fast-growing companies is implemented to a much lesser extent.

Various surveys of entrepreneurial zones in Croatia prove their positive impact on employment, attracting investors, regional and urban competitiveness, filling the budgets of local governments, economic and social development and stopping emigration. In the long run, the effects of zones are reflected in the improvement of efficiency (productivity) and superior

competitiveness due to the synergistic effects of resource sharing, specialization and the transfer of knowledge, skills and technology. Investments in entrepreneurial zones also have a multiplier effect as they lead to an increase in private investment in the business sector in the medium and long term (Jurlina Alibegović, D. et al., 2018, 6).

The Law on the Improvement of Entrepreneurial Infrastructure, passed in Croatia in 2013, also established the Unified Register of Entrepreneurial Infrastructure as a systematized electronic database of entrepreneurial zones and entrepreneurial support institutions maintained by the competent ministry.

Economic infrastructure relevant for both Croatia and the Zagreb Urban Agglomeration includes entrepreneurial zones and the following entrepreneurial support institutions: entrepreneurial centres, entrepreneurial incubators, incubators for new technologies, entrepreneurial accelerators, regional and local development agencies, and to a much lesser extent, science and technology parks, centres of competence or development agencies of certain activities. It should be said that Croatia has a fairly well-developed network of entrepreneurial infrastructure, most of which are entrepreneurial zones. This confirms that the SME development policy has focused on the traditional model of development by increasing the number of new business entities. This is a traditional approach policy and a small economy policy, and, to a much lesser extent, a policy of a long-term sustainable concept of entrepreneurship development, i.e. a policy focused on innovative and fast-growing companies.

In 2014 the Republic of Croatia State Audit Office drafted the first Report on the effectiveness of the establishment and investment in the equipment and development of entrepreneurial zones (collectively for all counties), and individual reports by counties. As stated in this report, at the end of 2013 in the territory of the Republic of Croatia, according to the existing spatial planning documentation, there were already 1,308 entrepreneurial zones (planned zones), established by almost all local self-government units (515 or 93% of 556 total) and three counties. Entrepreneurial activity took place in 451 entrepreneurial zones, i.e. in 34.5% of the planned ones. They employed 69,303 people. (Republic of Croatia State Audit Office, Zagreb, October 2014, 3, 9)

According to the data available in the Unified Register of Entrepreneurial Infrastructure, competent ministry, in mid-April 2021 in the Republic of Croatia (Unified Register of Entrepreneurial Infrastructure, Ministry of Economy and Sustainable Development, accessed 15 April 2021), 484 subjects of entrepreneurial support institutions and entrepreneurial zones were registered in its integrated electronic database of subjects of entrepreneurial infrastructure as service providers for the small and medium enterprises sector, the majority, of which 285 or 58.9% of them, were entrepreneurial zones. They were followed by local development agencies (51), entrepreneurial centres (49), entrepreneurial incubators (42), incubators for new technologies (12) and entrepreneurial accelerators (10). The fewest among them were science and technology parks (1), business parks (1) and development agencies for specific activities (6) and centres of competence (8).

These are the highest quality zones and entrepreneurial support institutions verified by the competent ministry, which meet all the conditions prescribed by law, i.e. meet the standard requirements for attracting investors. The number of registered and active entities of entrepreneurial support institutions is significantly higher

In the area of the Zagreb Urban Agglomeration (ZUA), which spans over approximately 3000 square kilometres and includes the administrative and political area of the City of Zagreb and surroundings, popularly called "Zagreb ring" which surrounding the city, all local self-government units (11 cities and 19 municipalities) have established entrepreneurial zones (one or more), City of Zagreb and Stupnik municipality being the exception. In addition to entrepreneurial zones, various components of entrepreneurial support institutions operate in the areas of these local self-government units and the City of Zagreb.

The City of Zagreb did not envisage the construction of entrepreneurial zones in its development strategy and spatial planning documentation, but the fact is that it has a larger number of entrepreneurial support institutions than any other city or county in Croatia. There are twenty-eight (28) of them in total: two (2) of which are development agencies, seven (7) entrepreneurial centre nine (9) entrepreneurial incubators, five (5) entrepreneurial accelerators, three (3) entrepreneurial incubators for new technologies and two (2) centres of competence (Unified Register of Entrepreneurial Infrastructure, accessed 15 April 2021).

As Zagreb does not have any entrepreneurial zones, entrepreneurs in search of them move outside the city, to the city surroundings (Sv. Nedelja, Samobor, Rugvica, Sv. Ivan Zelina, Zabok, etc.) or to the outer area of the agglomeration.

The publicly available data in the Unified Register of Entrepreneurial Infrastructure on 15 April 2021 lists 15 entrepreneurial zones of the Zagreb Urban Agglomeration that have completed the verification procedure at the competent ministry, nine (9) of which are in the neighbouring Zagreb County, within the ZUA, and six (6) are in Krapina-Zagorje County. According to the data, the number of business zones in the areas of Zagreb and Krapina Zagorje counties that are in operation is significantly higher than the number suggested in the register of the ministry due to a larger number of active zones compared to the number of verified ones.

An active entrepreneurial zone is a zone in which at least one entrepreneur with one employee operates. Spatial plans envisage eighty-one (81) entrepreneurial zones in the agglomeration. In 2021, in the area of the agglomeration are active thirty-three (34) entrepreneurial zones, i.e. forty-seven (47) planned zones are not operational yet, and in the City of Zagreb there are none. The entrepreneurial zones that are in operation are located in the area of ten cities and twelve municipalities of the agglomeration surrounding the city.

In 2021, in the area of Zagreb County[2], the nearby area surrounding Zagreb, thirty-one (31) zones were active, in the development of which the county itself invested around 50 million kuna from 2001 to 2021. If state, city, and municipal support funds and direct private investment by entrepreneurs are added to that, the amount of investment is significantly higher[3].

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[2] the whole area of Zagreb County does not belong to the ZUA, although as a whole it is attractive to Zagreb and other entrepreneurs.

[3] According to the estimates of the Zagreb and Krapina-Zagorje counties, in the entrepreneurial zones of local units that are part of the urban agglomeration of Zagreb in the period 2000-2020, a total of public funds in the amount of about 169.3 million kuna or 22.5 million euros were invested.

Table 3: Entrepreneurial zones by cities and municipalities of the urban agglomeration Zagreb, April 2021

Name	City/ Municipality	Entrepreneurial zones				
		Unified register 4/2021	Planned	Active 4/2021	Number of entrepreneurs	Number of employees
Zagreb	City	0	0	0		
Brckovljani	Municipality	-	11	2	10	110
Brdovec	Municipality	-	5	3	5	50
Dugo Selo	City	-	1	2	5	581
Jakovlje	Municipality	1	3	1	1	65
Jastrebarsko	City	-	1	1	25	521
Klinča Sela	Municipality	-	4	-	-	-
Pisarovina	Municipality	-	1	1	3	64
Pokupsko	Municipality	-	2	1	-	-
Pušća	Municipality	-	1	-	-	-
Rugvica	Municipality	3	4	3	3	998
Samobor	City	-	1	1	18	960
Sveti Ivan Zelina	City	-	10	1	7	343
Sveta Nedelja	City	4	4	4	42	1668
Marija Gorica	Municipality	-	1	-	0	0
Velika Gorica	City	1	3	1	4	51
Orle	Municipality	-	2	-	-	-
Zaprešić	City	-	8	3	1	300
Kravarsko	Municipality	-	1	-	-	-
Bistra	Municipality	-	2	2	5	13
Luka	Municipality	-	1	1	1	70
Dubravica	Municipality	-	2	-	-	-
Stupnik	Municipality	-	0	0	-	-
Gornja Stubica	Municipality	1	1	1	18	418
Marija Bistrica	Municipality	1	2	1	2	35
Veliko Trgovišće	Municipality	1	1	1	6	149
Zabok	City	1	1	1	90	1809
Donja Stubica	City	-	5	2	8	258
Stubičke Toplice	Municipality	2	2	2	-	-
Oroslavje	City	-	1	5	160	210
TOTAL		**15**	**81**	**34**	**414**	**8 673**

Source: Ministry of Economy and Sustainable Development of the Republic of Croatia, a http://reg.mingo.hr/pi/public/ accessed 15 April, 2021; Regionalna razvojna agencija Zagrebačke županije, Analiza poduzetničkih zona na području Zagrebačke županije, Zagreb, 2020, 1-118; Zagorje Development Agency, 2021

The number of entrepreneurs and their investments in entrepreneurial zones is continuously growing, especially in the zones that are located along well-built roads. The most promising entrepreneurial zones are located in the area of the agglomeration, west of Zagreb towards the border with Slovenia. In these zones, as in the zones of the wider Zagreb agglomeration area, most entrepreneurs and employees are from Zagreb itself.

The Austrian aeronautical company FACC Solutions is currently investing in the Jakovlje business zone (29 km west of Zagreb), i.e. constructing a factory that will produce parts for the

world's most famous aircrafts and their engines: Airbus, Boeing, Bombardier. The investment is worth 33 million euros. According to its business plan, the FACC company plans to employ 600 people in the first phase.

In addition to entrepreneurial zones, there are also entrepreneurial support institutions in this area, namely: three county development agencies, one local development agency in Velika Gorica, 11 entrepreneurial centers (7 in the City of Zagreb, 3 in Zagreb and 1 in Krapina-Zagorje County) and many other types entrepreneurial support institutions.

5. Results of the conducted survey

For the purpose of this research, an online survey was carried out of a structured sample of 105 entrepreneurs operating in the entrepreneurial zones of the research area. The questionnaire consisted of 16 questions. Given the short deadline and the corona crisis, the questions were answered by 22 entrepreneurs or 20,9%, mostly from senior management, who also offered a number of proposals for improving the work of entrepreneurs in the entrepreneurial zone.

The objectives of the survey were: to survey the opinion of entrepreneurs on satisfaction of functioning in the zones, the perception of the support of the local community (city/municipality) and entrepreneurial support institutions and attitude towards entrepreneurs at the time of the pandemic.

Survey questions with summary of answers:

Q1: Evaluate the general satisfaction with accommodation and functioning in the entrepreneurial zone? A: As many as 72.8% of entrepreneurs answered that they were very satisfied (grade 4) or extremely satisfied (grade 5).

Q2: How satisfied are you with your location in the zone? A: 77.3% of entrepreneurs answer that they are very or extremely satisfied (grades 4 or 5)

Q3: How satisfied are you with the cost of public utility charges and fees? A: The majority (54,5 %) answered with a medium grade (3), almost a third with grade 4 and just 9,1 % with grade 5.

Q4: How satisfied are you with the cost of renting the space? A: 68,2% of respondents answered that they were very or extremely satisfied.

Q5: How satisfied are you with the quality of utility services provision? A: The answers were very divided - 36, 4% assigned grade 3, 40,9% gave a grade 4, and only 13.6% with a grade of 5.

Q6: How satisfied are you with the transport infrastructure? A: The majority (95,5%) are satisfied (3), very (4) or extremely satisfied.

Q7: How satisfied are you with the communication infrastructure? A: Also, the majority of 95.5% are more or less satisfied (grade 3, 4 or 5) with this infrastructure in the zone.

Q8: How do you rate your cooperation with the local entrepreneurship center? A: Here the answers are very divided. Unexpectedly a high share of respondents is completely dissatisfied (27.3%) and partially satisfied (4.5%), while only a third is satisfied.

Q9: How do you rate the cooperation with the county or local development agency? A: The grades are also unsatisfactory. 47.4% rated this cooperation with grades 1 and 2, 21,1% with grade 3 and only about one third of entrepreneurs are more satisfied.

Q10: How do you rate the cooperation with the representatives of the municipality or city? A: The grades are a bit better here. 50% responded with a rating of medium level of satisfaction (3), 36.4% were very or very satisfied, while a very small proportion were dissatisfied.

Q11: How much did your income decrease during the pandemic? A: It is interesting that as many as 72.7% of entrepreneurs answered 0-20%, 22.7% say that their incomes decreased by 21- 40%, and only 4.6% had a reduction of income by more than 41%.

Q12: How satisfied are you with the advisory services of entrepreneurial support institutions to help overcome the COVID-19 pandemic? A: Half of the respondents are not satisfied at all, 27.3% are moderately satisfied, while only a small part of them are more satisfied with this support.

Q13: How satisfied are you with the financial support of institutions at the local level (reduction or postponement of payment of rent obligations, utility contribution, utility services) during the corona crisis? A: The majority (40.9%) are not satisfied with this support, while about 27% rate it with a grade (3).

Q14: When asked about the most *positive* factors of accommodation and functioning in the entrepreneurial zone, the most frequent answers are: location, good traffic connection of the location, lower operating costs, communal infrastructure, exemption of entrepreneurs from paying utility contributions and surtax on income tax by some cities and municipalities.

Q15: As *problems* of doing business in entrepreneurial zones, entrepreneurs point out: weak financial
support of state and local institutions, high taxes and contributions on salaries, low-grade professional assistance of local and state entrepreneurial and other support institutions, both in times of corona crisis and otherwise, weak support for start-up entrepreneurs, high communal contribution in certain zones, unfinished construction of zones, etc.

Some of the proposals from the surveyed entrepreneurs are: entrepreneurs in the zones should be completely exempted from paying utility fees and utility contributions during the corona crisis, incentives should be introduced for the initial years of arrival in the zone, for employing more than 100 employees and the like.

The survey raises a number of questions and suggestions for improving entrepreneurial infrastructure both by improving the functioning of entrepreneurial support institutions and by improving city and local policy towards entrepreneurs in terms of reducing land prices in zones, completing their equipping and landscaping and further relief through utility prices and utility fees for entrepreneurs in certain zones. Regarding the relatively smaller decline in income of entrepreneurs in the zones during the COVID-19 pandemic compared to the average decline in the Croatian economy, it can be concluded that at the time of this crisis doing business in entrepreneurial zones located away from city noise was an advantage.

State aid or advisory expertise from support institutions in Croatia during the corona crisis was not sufficient to overcome the economic consequences. The same was confirmed by this survey.

Entrepreneurs in the zones were mainly provided with information and advice by support institutions on how to use state COVID grants. However, they lacked advice and assistance from support institutions in terms of professional assistance and strategic decision making in difficult conditions.

Only some large and market-renowned consulting firms have organized webinars and other forms of online consultations related to liquidity assurance advice and adaptation of business models to crisis conditions.

6. SWOT analysis of the entrepreneurial infrastructure

Based on previously analyzed data, results of secondary research and collected information on the development of entrepreneurial infrastructure, the results of the survey research and the development problems and needs, this analysis of strengths, weaknesses, opportunities and threats was made.

The SWOT analysis shows that the development of entrepreneurial infrastructure in the researched area, despite many strengths, has a number of weaknesses in the elimination of which significant efforts and activities should be invested all stakeholders at local and regional level.
Only with the gradual elimination of these weaknesses will it be easier in the coming period to take advantage of the opportunities provided for better and more efficient development of entrepreneurial infrastructure.

Table 4: SWOT analysis of strengths, weaknesses, opportunities and threats of the entrepreneurial infrastructure in the area of the ZUA, 2021

STRENGTHS	WEAKNESSES
- favourable geographical position and quality transport infrastructure - tradition and experience in crafts, entrepreneurship and industry - relatively fast adaptability of craftsmen, small and medium enterprises to market demands - increase in the number of business entities, especially micro businesses and small businesses (before the COVID-19 crisis) - the concentration of educational and support institutions, as well as institutions involved in science and research - relatively high innovation potential in the city - developed ICT sector - concentration of cultural and creative industries - the possibility of using different support programs	- insufficient support for the development of entrepreneurial infrastructure on the local level, primarily from the City of Zagreb - weak organization, coordination and harmonization of work between individual entrepreneurial support institutions at the local level - dissatisfaction of entrepreneurs with the quality of advisory services of entrepreneurial support institutions - insufficient interconnection of economy and science - insufficient interconnection and networking of entrepreneurs in clusters - lack of organized management of zone development - a large number of small and incompletely arranged zones - difficulty monitoring the zone development and review due to the lack of data on their development - undeveloped scientific and technological infrastructure - Insufficient professional competence of entrepreneurial support institutions - insufficient or inaccessible programs for lifelong education of employees in entrepreneurs - too much administration in support institutions and public administration burdens the business

OPPORTUNITIES	THREATS
- using the competitive advantages of the ZUA, primarily its traffic-geographical position, human resources and its proximity to the City of Zagreb - planning and investing in the development of entrepreneurial zones in suburban settlements, which administratively and politically fall within the scope of the City of Zagreb (69 settlements) - strengthening cooperation between public, private and scientific research sectors - improving the staffing in entrepreneurial support institutions - using various support programs for investments in entrepreneurial infrastructure - greater investments in entrepreneurial zones, as well as the capacities of entrepreneurial support institutions, including the purposeful use of EU funds - networking of entrepreneurs and suppliers at the market - better and continuous cooperation between entrepreneurs and science, education, public administration, entrepreneurial support institutions and other stakeholders in the entrepreneurial ecosystem	- lagging behind others in the application of new technologies - insufficient financial support to entrepreneurs during the COVID-19 pandemic - the consequences of the pandemic on the economy in general - insufficient connectivity of infrastructure that supports the development of innovation - impossibility to use the tourist potential of the urban agglomeration area (the city and its surroundings) due to the COVID-19 pandemic - high contributions, taxes and surcharges on wages

Source: Made by the authors based on available, previously given data and the results of the survey

7. Conclusion and suggestions for improvement

This paper, as well as previous research, confirms the hypothesis of the interdependence of economic development with the level of development and competitiveness at the regional and local level.

As entrepreneurship in the market economy is the fundamental driving force of economic development, an important conclusion is that entrepreneurial environment has a stimulating effect on entrepreneurial activity. In such an entrepreneurial environment, the economy grows, and so does its own productivity, success and competitiveness, as well as the positive impact on the level of development and competitiveness of the area in which operations are taking place.

In order for the entrepreneurial environment to be stimulating for entrepreneurial activities, the research shows how important it is to take care of harmonization and development of all elements of basic infrastructure and public sector, as well as business, primarily entrepreneurial infrastructure. It is certainly important to have a transparent and efficient local government with good communication and cooperation with entrepreneurs, as well as to build entrepreneurial support institutions.

The importance of such development orientation and investment in entrepreneurial infrastructure in the area of the Zagreb urban agglomeration is best confirmed by the example of Zagreb County, which has climbed from the last (21st) place on the ranking list of counties according to the development level in 1991, to the 4th place in the county rank in 2018, and is a part of the group of the four most developed counties.

As a positive result of twenty years of investment in entrepreneurial infrastructure, numerous entrepreneurial zones have been built in the area of Zagreb agglomeration, specifically Zagreb County, which attract entrepreneurs mainly from the City of Zagreb, but also from abroad in production, service, warehousing, distribution, logistics, trade and other activities. Until then, in the area of Zagreb, the focus was to strengthen various entrepreneurial support institutions. The comparative analysis has shown a significantly better support to the entrepreneurial infrastructure development by the Zagreb County.

The survey confirmed that entrepreneurs are generally satisfied with the location conditions in the zones, transport and communal infrastructure and cooperation with local government, but to a lesser extent with the quality of service provision by professional entrepreneurial support institutions. It is recommended to work on eliminating the identified problems, strengthening the capacity of institutions and administration and to make greater use of opportunities to work on investment projects into zones, institutions and other support to entrepreneurship in the coming planning period.

The City of Zagreb should also invest more in science and technology parks and incubators for new technologies, and encourage networking of entrepreneurs. With all the advantages of entrepreneurial zones in Croatia and the Zagreb urban agglomeration, this research shows that there are still significant needs and opportunities to improve the state and policy of economic development.

Here, the survey research has shown, among other things, that the COVID-19 pandemic has caused significant problems and is impacting the development of entrepreneurship as well as entrepreneurial zones, which is reflected in declining revenues and declining indicators of business efficiency and performance. It is expected that the new health care measures for the population in Croatia by the end of 2021 will enable a new normal life and the continued development and recovery of the economy.

Regarding further research on the entrepreneurial infrastructure of cities and urban agglomerations, including the Zagreb agglomeration, a comparative analysis of development should be made with examples of good practice with other similar cities and urban agglomerations in the European Union. Also, research on strengthening the innovation capacity of the urban economy through better cooperation of scientific and research institutions with entrepreneurs and public administration should be encouraged, as well as research related to strengthening the quality of professional infrastructure services, improving the quality of city administration and introducing innovative financial solutions to support entrepreneurs.

In addition, a single database on entrepreneurial infrastructure at regional and local level needs to be established, which would facilitate further research and direct development policy-making.

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IMPACT OF COVID-19 PERCEPTION ON STUDENTS´ ENTREPRENEURIAL INTENTION IN BOSNIA AND HERZEGOVINA

ABSTRACT

Although the COVID-19 pandemic represents crisis primary caused due to health reasons, it led to the largest economic crisis since the Great depression. Almost the whole world economy has been in deep recession from the second quarter of 2020 onwards causing the uncertain future. During the crisis, the sectors which demanded continuous contact with the customers were particularly vulnerable. On the other hand, as a consequence of restrictions or even prohibitions of B2B and B2C contacts, the crisis influenced on creation of the new business models and innovative solutions focused on possibilities and maintaining of the company business operations. The economic consequences of the pandemic in Bosnia and Herzegovina are reflected in the increase in unemployment and the decline in economic activity at all levels. The government's response to the pandemic was bad and late. In the context of entrepreneurship, the crisis presents a risk, but also an opportunity for those who can recognize and take the advantages. Thus, the empirical part of this work includes the investigation on how perceptions of the Covid-19 pandemic crisis influenced on entrepreneurial intentions of the students from Bosnia and Herzegovina. Research on the perceptions of the Covid-19 pandemic was related to perceptions of the pandemic influence on the economy and society in Bosnia and Herzegovina, as well as on perceptions of the pandemic influence on an individual person. Research was conducted mostly with the students at University of Zenica and at Higher education institution "International business-information academy" Tuzla in December 2020 when the influences and consequences of pandemic still have been present. Apart from perceptions of crisis caused by the Covid-19 pandemic, the regression model includes elements of Theory of planned behavior. Research suggests that there is no impact of the perception of Covid-19 crisis on Entrepreneurial intention.

Keywords: *Entrepreneurial Intention, Entrepreneurship, Covid-19, Covid-19 Perception.*

1. Introduction

The Covid-19 pandemic, from the primary health crisis in 2020, led to a global economic crisis. The recession in which the world economy finds itself represents one of the greatest economic crises in recent history. The reasons for that can be found primarily in the difficult movement of goods and people and the expressed pessimism that resulted in a decrease in demand and investment. The global recession caused by the Covid-19 pandemic has led to a decline in GDP per capita in approximately 30% of emerging market and developing economies to such an

extent that it has taken them back a decade. Global output by 2025 is expected to be 5% lower than 2019 levels (World Bank, 2021).

In Bosnia and Herzegovina, the pandemic caused not only health but also great economic consequences. The Spring Lockdown had a strong impact on the decline in economic activity and rising unemployment. The decline in real GDP in the second quarter of 2020 was 9.3% compared to the same quarter in 2019 (Agency for Statistics of Bosnia and Herzegovina, 2020). After the gradual lifting of restrictions, the expected economic recovery did not occur, so in the third quarter the real decline in GDP was 6.3% compared to the same period in 2019 (Agency for Statistics of Bosnia and Herzegovina, 2021). In the first eight months of 2020, exports from Bosnia and Herzegovina were 14.1% lower than in the same period in 2019, while imports were 17% lower than in the same period last year. The coverage of imports by exports was 60.9% (Agency for Statistics of Bosnia and Herzegovina, 2020). At the same time, the perception of the public in Bosnia and Herzegovina shows that different people believe that different levels of government did not respond adequately to the crisis, especially to its economic segment. A survey conducted in May 2020, which included 385 business owners or managers, shows that 91.2% of respondents believe that the government's economic measures were not good, and 83.9% of respondents believe that the measures were adopted too late (Bećirović et al., 2020). The crisis has led to consumer pessimism and pessimism among entrepreneurs due to uncertainty or poor government reactions reflected in declining consumption and investment. Thus, in Bosnia and Herzegovina in the third quarter, the decline in household consumption was 3.1%, while the decline in gross investment was 13% compared to 2019 (Agency for Statistics of Bosnia and Herzegovina, 2021). The survey, which included 1,308 respondents in Bosnia and Herzegovina, showed that 57.7% of respondents believe that a pandemic poses a threat to their workplace, 73.2% of them believe that a pandemic poses a significant financial threat to their family, while 71.2% of respondents believe that the pandemic is a major threat to the long-term business of their company (Čavalić et. al., 2020). Even before the recent crisis, the problem of unemployment was particularly pronounced. The economic crisis caused by the pandemic also caused a significant drop in employment. Compared to November 2019, in November 2020, 11,895 fewer employed persons were registered (Agency for Statistics of Bosnia and Herzegovina, 2021). Youth unemployment is a particular problem. According to the survey of unemployment rate, 38.6% of young people (15-24 years) are unemployed (Agency for Statistics of Bosnia and Herzegovina, 2020).

Entrepreneurship development is extremely important in transition countries, especially from the aspect of job creation. For countries in transition, the development of entrepreneurship is important for the reason that, in addition to solving the problem of unemployment, it also helps to solve other social problems (Dilanchiev, 2014). In a study conducted by Rajh et al. (2016) it has been shown that entrepreneurial intentions among young people in Bosnia and Herzegovina are higher than in other surrounding countries.

Given the dimensions and complexity of the crisis caused by the pandemic, how does this reflect on the development of entrepreneurship, especially on potential entrepreneurs? Is the crisis a chance, as can often be heard or said, or is it an effect that has a negative effect on the intention of people to orient themselves towards entrepreneurship?

Based on the above, the aim of this research is to show how the perception of the recent economic crisis, but also health crisis, caused by the Covid-19 pandemic has affected the entrepreneurial intention of the student population in Bosnia and Herzegovina. As a starting model in the analysis of this impact, a model based on the Theory of planned behavior was

used, which includes three factors of entrepreneurial intention. The research hypothesis was: *The perception of the Covid-19 pandemic negatively affects the entrepreneurial intentions of respondents*.

In Bosnia and Herzegovina, several surveys have been conducted that deal with entrepreneurial intentions related to the student population. They are focused on the analysis of the impact of the environment, demographic variables, and entrepreneurial education (Palalić et al., 2017), formal, informal and regulatory support (Turulja et al., 2020), networking and business environment (Palalić et al., 2016) on entrepreneurial intentions. Some variables are included in these studies that may be related to some of the elements of Theory of planned behavior, but not entirely as a holistic model. This research is one of the few at the level of Bosnia and Herzegovina that is based on the Theory of planned behavior and seeks to fill the gap that exists in the research of entrepreneurial intentions in Bosnia and Herzegovina.

2. Entrepreneurial Intention

Exploring entrepreneurial intentions requires an interdisciplinary approach. It represents a link between psychology and entrepreneurship research, that is, it represents a link between behavior prediction models, which originated in the field of psychology, and contemporary entrepreneurial research (Jeger et. al., 2014).

The Theory of planned behavior is the most used theoretical framework when it comes to researching entrepreneurial intentions. A central factor in the Theory of planned behavior is the intention of the individual to perform a particular behavior. Intentions include motivational factors that influence certain behaviors. These are indicators of how much people are willing to put in the effort to perform some behavior. In general, the more pronounced the intention to commit a behavior, the more likely it is to commit it. In doing so, it must be clear that behavioral intention can be expressed in behavior only if the behavior in question is under the control of the will, i.e., if the person can decide for himself whether to commit or not to commit that behavior. According to the Theory of planned behavior, the formation of intention is influenced by three factors: attitudes towards behavior, subjective norm, and perceived behavioral control (Ajzen, 1991). If we focus on entrepreneurial intentions, and starting from the Theory of planned behavior, entrepreneurial intentions indicate the effort a person is willing to make to carry out such entrepreneurial behavior (Liñán and Chen, 2009).

Figure 1 shows a theoretical model that represents the starting point in our analysis. This model is based on the Theory of planned behavior, including the three previously mentioned factors that influence the formation of the intention of a particular behavior. In addition, the perception of the Covid-19 pandemic is included in the model. The starting point for the development of such model is the model presented by Liñán and Chen (2009).

Figure 1: Entrepreneurial Intention Model
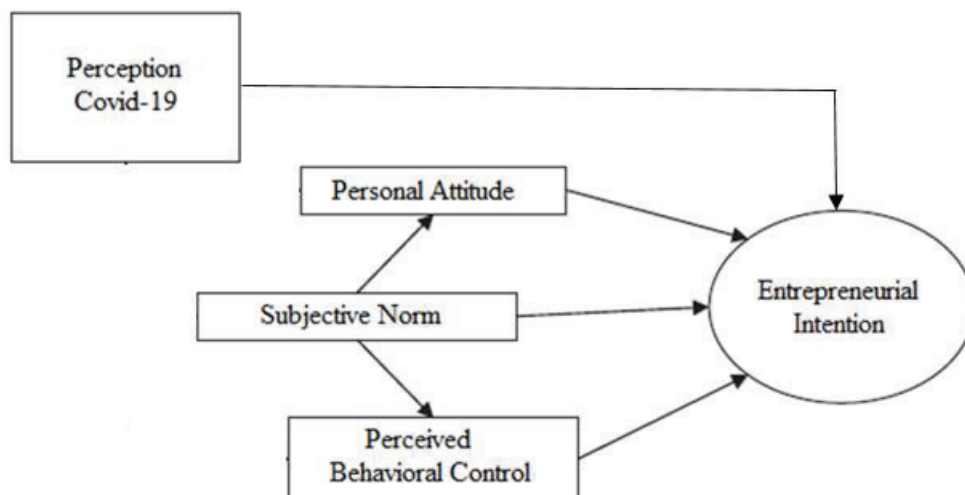
Source: Authors creation according to Liñán and Chen (2009)

As we can see from the model (Figure 1), the three aforementioned factors are:

- The first factor in the model is the attitude towards behavior (*Personal Attitude*). It refers to the degree to which a person has a positive or negative assessment that he is an entrepreneur.
- Second factor in the model is the *Subjective Norm* - it refers to the perceived social pressure to implement or not implement entrepreneurial behavior.
- The third factor in the model is *Perceived Behavioral Control* - this refers to the perceived ease of performing the behavior and the perceived control over the outcome of it. That is, the perception of the ease or difficulty of becoming an entrepreneur (Liñán and Chen, 2009, 596; Autio et al., 2001).

Starting from the aim of this research, the perception of Covid-19 was included as a factor in the theoretical model to analyze the impact of the pandemic perception on entrepreneurial intention. It consists of two types of perception, that is perception of the level of personal threat that the pandemic represents and perception of the response of the competent institutions to the pandemic.

3. Methodology and sample

The research was conducted and based on collected data (primary data). A survey questionnaire was used as a data collection tool. The research was conducted on a suitable sample using the CAWI method. A total of 255 respondents responded to the questionnaire, and the questionnaire was created in such a way that there were no missing answers (all answer fields were required in order to submit the survey). The sample consisted mostly of students from the University of Zenica and the IPI Academy College in Tuzla.

Table 1 shows the structure of the respondents according to the observed socio-demographic characteristics.

Table 1: Sample characteristics

Gender	Male	Female	
	46.3%	53.7%	
Study program	**Economics and Business**	**Technical**	**Other**
	28.6%	52.5%	18.9%
Entrepreneurial experience of parents	**Yes**	**No**	
	35.7%	64.3%	
Age	**Mean**		
	23.17		

Source: Authors

An originally created questionnaire was used to measure the perception of the Covid-19 pandemic. The assessment of the level of personal threat from a pandemic in health and economic terms was measured through seven items, using a five-point Likert scale (from very small to very large), while the perception of responses and measures of pandemic institutions was measured through three items, using a five-point Likert scale (from total disagreement to total agreement). Items used to capture the perceptions of the Covid-19 pandemic are included in the Appendix.

A measurement instrument developed by Liñán and Chen (2009) was used to measure Core Entrepreneurial Intention model elements. A five-point Likert scale (from total disagreement to total agreement) was used. The composite variables Personal Attitude, Perceived Behavioral Control, and Entrepreneurial Intentions were calculated as the arithmetic means of the values of the corresponding items. The composite variable Subjective Norm was calculated in such a way that items (SN11, SN22, SN33) were recoded into the bipolar scale (-2 to 2) and multiplied by the corresponding variables (SN1, SN2, SN3), and the arithmetic mean was calculated for each corresponding items according to the recommendations of Basu and Virik (2008).

The reliability of the measurement scales used was measured by calculating the Cronbach's Alpha coefficient. Table 2 gives the values of the Cronbach's alpha coefficients for the model constructs.

Table 2: Cronbach's Alpha analysis of measurement scales

	Perception Covid-19 personal	Perception Covid-19 institutional	Personal Attitude	Perceived Behavioral Control	Subjective Norm	Entrepreneurial Intention
Cronbach's Alpha	0.626	0.710	0.878	0.861	0.702	0.946

Source: Authors

From Table 2, all measurement scales, except Perception Covid-19 personal, have good internal consistency, and show a good level of reliability. Cronbach's Alpha coefficient values are above 0.70. For the Perception Covid-19 personal measurement scale, the Cronbach's Alpha value is 0.626 and is considered a mediocre level of reliability.

Data analysis was performed using descriptive statistical analysis, and correlation analysis and hierarchical regression analysis were used to examine the impact of the pandemic perception on students' entrepreneurial intentions, i.e., to test the set hypothesis.

3. Research results

The analysis of the research results begins with a descriptive statistical analysis, which is shown in Table 3. The mean values and standard deviations of the respondents' responses for all items that are part of the observed latent variables are given.

Table 3: Descriptive statistical analysis

Construct	N	Mean	Std. Deviation	Number of items
Perception Covid-19 personal	255	3.52	1.10	7
Perception Covid-19 institutional	255	2.58	1.07	3
Entrepreneurial Intention	255	3.62	1.08	6
Personal Attitude	255	4.15	0.94	5
Subjective Norm	255	4.33	0.83	3
Subjective Norm Influence	255	3.67	1.04	3
Perceived Behavioral Control	255	3.38	0.97	6

Source: Authors

When it comes to the perception of the level of personal threat from the Covid-19 pandemic, the highest mean value refers to the assessment of the level of general economic threat (4.59). On the other hand, the least perceived threat refers to a personal health threat (2.64). When it comes to the perception of the institutional response to the pandemic, the respondents' answers show that the perception is such that the measures and the response of the institutions were poor. The most negative perception refers to the authorities' response to the health segment of the crisis. If we look at the factors of the Theory of planned behavior model, the mean values of respondents' responses for items related to the Personal Attitude factor show that respondents have a positive attitude about becoming entrepreneurs. They also believe that they would have a high level of support from their environment in such a decision. When it comes to the factor Perceived Behavioral Control, mean responses of respondents are lower than the factors Personal Attitude and Subjective Norm. Regarding the entrepreneurial intention variable, we can see that respondents show a more positive than negative attitude towards entrepreneurial intention.

Table 4 shows the correlation analysis between the observed variables from our theoretical model. The relationship between the observed variables was investigated using the Pearson correlation coefficient. Compared to Entrepreneurial Intention, significant correlation coefficients are shown by Personal Attitude and Perceived Behavioral Control. Also, there is a significant correlation between these variables. The values of the correlation coefficients suggest a large correlation of these variables with Entrepreneurial Intention (Cohen, 1988). At the same time, the Subjective Norm factor did not show the existence of statistically significant correlations toward Entrepreneurial Intention, nor to other factors of the Theory of planned behavior model. For the perception variables of the Covid-19 pandemic (Perception Covid-19 personal and Perception Covid-19 institutional), it was not determined that there are significant correlation coefficients in relation to Entrepreneurial Intention, as well as in relation to other factors of the Theory of planned behavior model. Between Perception Covid-19 personal and

Perception Covid-19 institutional, the existence of a significant correlation coefficient was determined, which is negative and indicates a small correlation.

Table 4: Correlations among variables

Variables	1	2	3	4	5	6
Entrepreneurial Intention	1					
Personal Attitude	**0.747****	1				
Subjective Norm	0.038	,108	1			
Perceived Behavioral Control	**0.619****	**0.523****	0.087	1		
Perception Covid-19 personal	0.000	0.043	0.111	0.042	1	
Perception Covid-19 institutional	-0.022	0.023	0.093	0.011	**-0.126***	1

** $p<0.01$; * $p<0.05$
Source: Authors

In Table 5, the results of Hierarchical regression analysis are presented. Entrepreneurial Intention was taken as a dependent variable in the model. The analysis was conducted in such a way that three models were set up. Model 1 contains socio-demographic variables (Gender, Age, Study program and Entrepreneurial experience of parents). Model 2, in addition to the control variables from Model 1, also includes factors from our theoretical model based on Theory of planned behavior (Personal Attitude, Subjective Norm and Perceived Behavioral Control). In model 3, in addition to the variables from model 2, the variables Perception Covid-19 personal and Perception Covid-19 institutional were included to determine their special influence on the dependent variable, in accordance with the set research hypothesis.

F values indicate that the model is statistically significant in all three cases. In the first model, which contains only sociodemographic variables, the value of R-square is 0.037, which means that it explains only 3.7% of the variance of the dependent variable. In this model, the only statistically significant variable was the Entrepreneurial experience of parents. After entering the basic variables Theory of planned behavior, in model 2 the level of explanation of variance by the model is 64.1%. This means that these variables explain an additional 60.3% of the Entrepreneurial Intention variance. This change is significant as seen in the table in row F Change. Significant variables in model 2 are Personal Attitude and Perceived Behavioral Control, with Personal Attitude having a higher standardized beta coefficient (0.57) compared to Perceived Behavioral Control (0.32). The variable Entrepreneurial experience of parents was no longer significant in this model. After the introduction of the variables Perception Covid-19 personal and Perception Covid-19, the level of explanation of variance by the model is 64.3%. The change in R-square was not significant. As in model 2, in model 3 the only significant variables are Personal Attitude and Perceived Behavioral Control, with their values of the standardized beta coefficient being the same as in the case of model 2.

Table 5: Hierarchical regression analysis

Variables	Model 1 (control)	Model 2	Model 3
Gender	0.09	0.06	0.06
Age	-0.06	-0.01	-0.01
Study program	0.02	0.03	0.03
Entrepreneurial experience of parents	0.15*	0.05	0.05
Perceived Behavioral Control		0.32**	0.32**
Subjective Norm		-0.04	-0.04

Variables	Model 1 (control)	Model 2	Model 3
Personal Attitude		0.57**	0.57**
Perception Covid-19 personal			-0.01
Perception Covid-19 institutional			-0.04
R-square	0.037	0.641	0.643
Adjusted R-square	0.022	0.631	0.630
F-value	2.424*	63.06**	48.96**
R Square Change	0.037	0.603	0.001
F Change	2.42*	138.59**	0.49

** $p < 0.01$; * $p < 0.05$. Beta coefficients are standardized.
Source: Authors

Thus, the introduction of Perception Covid-19 personal and Perception Covid-19 variables did not increase explanations of the variance of the dependent variable, nor do these variables make a unique contribution.

4. Discussion and Conclusion

The results of the conducted correlation analysis and hierarchical regression suggest the rejection of the hypothesis because no evidence was found that the perception of the Covid-19 pandemic has a negative impact on the entrepreneurial intentions of students included in this study. That is, in order not to be misinterpreted, it has been shown that the perception of the Covid-19 pandemic does not affect the entrepreneurial intentions of students in general. These results contrast with a study of a sample of 934 Latin American students, which showed that the perception of the Covid-19 pandemic reduces the intention of students to start their own business (Hernández-Sánchez et al., 2020, 14). This can be partly explained by the time frame of the research. Our research was conducted at a time when the pandemic has been present in our lives for ten months, and it is possible that for this reason it has already become accustomed to being normal. On the other hand, the mentioned research from Latin America was conducted in the spring of 2020, when there was a great deal of uncertainty, and in most countries, Lockdown was on the rise. On the other hand, the results of other research dealing with entrepreneurial intentions during economic crises show that economic crises can have a negative impact on the intention to start their own business (Sarri et. al., 2018), but also that the perception of economic crisis does not affect to entrepreneurial intention which again confirms the results of our research (Landini et. al., 2015).

The results of hierarchical regression show that in model 2 the predictive power of the model was significantly increased by including the factor Theory of planned behavior. This confirms that the elements of this theory are good predictors of entrepreneurial intention. In doing so, the Personal Attitude variable showed greater predictive power compared to Perceived Behavioral Control, while Subjective Norms were not significant in this study. Regardless of the quality of the Theory of planned behavior model, this result is not entirely unexpected. The results of research in which the influence of the Subjective Norm on entrepreneurial intentions has not been confirmed are also found in research of Liñán and Chen (2009), Jeger et. al. (2014) and Autio, et. al. (2001).

The already complex economic situation in Bosnia and Herzegovina has become even more difficult because of the Covid-19 pandemic in Bosnia and Herzegovina. This is particularly reflected in rising unemployment and declining economic activity. The government's response was inadequate and did not provide security, further complicating the economic situation. At

the same time, according to the Doing Business Report of the World Bank, Bosnia and Herzegovina is ranked 90th in the world in terms of ease of doing business behind all countries covered by the study (World Bank, 2020, 14). Despite that, our research showed that there is a positive personal attitude in the student population about becoming entrepreneurs. This personal attitude most strongly influences their entrepreneurial intentions. The perception of the Covid-19 pandemic also did not have a negative impact on students' entrepreneurial intentions.

Starting from the results of this research and the fact that there is an anti-entrepreneurial climate and numerous economic problems in Bosnia and Herzegovina, space opens up for future research that should show whether a positive personal attitude that most strongly determines entrepreneurial intention is the result of insufficient knowledge of what it means to be an entrepreneur or is it associated with certain environmental factors that are extremely negatively perceived as "working for another". It is also interesting to investigate whether entrepreneurial intentions are translated into concrete entrepreneurial ventures and whether in the case of a specific entrepreneurial venture the anti-entrepreneurial environment has a stronger effect in a negative sense than when it comes to entrepreneurial intentions.

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Appendix 1: Perception Covid-19 personal

Rate the threat level due to the Covid-19 pandemic from 1 (very small) to 5 (very large).

	1	2	3	4	5
How much of a health threat does the corona virus pose to you personally?	□	□	□	□	□
How much of a threat does the corona virus pose to your family (in the health sense)?	□	□	□	□	□
How much of a financial threat does a pandemic pose to your family?	□	□	□	□	□
How much of a threat does a pandemic pose to the quality of your education?	□	□	□	□	□
How much of a threat does a pandemic pose to your employment opportunities?	□	□	□	□	□
What economic threat does the pandemic pose to Bosnia and Herzegovina?	□	□	□	□	□
How much threat does a pandemic pose to your lifestyle and way of life?	□	□	□	□	□

Source: Authors

Appendix 2: Perception Covid-19 institutional

State your level of agreement with the following statements from 1 (absolutely disagree) to 5 (absolutely agree).

	1	2	3	4	5
I believe that strict quarantine measures were justified, regardless of the economic consequences.	□	□	□	□	□
I think that the Government in Bosnia and Herzegovina are coping well with the situation related to the pandemic in terms of health.	□	□	□	□	□
I believe that the economic assistance measures adopted by the Entity Governments in Bosnia and Herzegovina are good and in line with their budgetary possibilities.	□	□	□	□	□

Source: Authors

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THE IMPORTANCE OF BUILDING THE INNOVATIVE CAPACITY IN THE PROCESS OF INTERNATIONALISATION OF GROWING ENTERPRISES

ABSTRACT

As a small market, Croatia is directed to enter the international market, which implies the importance of internationalisation, where growing enterprises are of particular importance.
In this context, fast-growing enterprises are extremely important for economic growth as carriers of competitiveness, new value creation and new employment.
The expansion of the growing enterprises business beyond the borders of the domicile state enables the strengthening of their market positions and their competitiveness, but is conditioned by the development of high-performance products and services, which requires continuous investments in technological development and strengthening of innovative capacity. Therefore, the aim of this paper is to point out the importance of developing the innovative capacity of growing enterprises as unavoidable determinant in the process of internationalisation and sustainability in global competitiveness. The paper is based on the analysis of the secondary data of Global Entrepreneurship Monitor survey, the Croatian Bureau of Statistics, as sources etc. The definition of a growing enterprise used by the Global Entrepreneurship Monitor is used in the paper, i. e. it is a business venture older than 42 months that shows above-average innovation measured by the share of new products in total revenue, innovation in using new technologies, export orientation and employment of 5 or more employees over a period of 5 years.
The survey results indicate the existence of significant obstacles in the process of internationalisation of business entities and lagging of Croatia in building the innovative capacity compared to the developed EU countries. The limited resources of many enterprises in financing innovation, as well as the non-recognition of the importance of the innovation potential by public policy makers, are set as significant determinants in building the innovative capacity of the society. Empowering growing and innovative enterprises, which are focused on expanding their business to the international market, is possible by establishing the State Venture Capital Fund, tax incentives and developing a stimulating entrepreneurial environment.

Keywords: *growing enterprises, internationalisation, innovative capacity.*

1. Introduction

Globalisation processes and the accelerated development of interconnected new technologies and new ways of communication, led to the interdependence of the world economy and the

expansion of network activities, which influenced the shaping of the process of internationalisation of business entities. For Croatia, as a small national economy, intensifying the internationalisation process is of particular importance for strengthening international competitiveness of the economy. In other words, a higher level of internationalisation enables the strengthening of market positions and strengthening of the competitiveness of growing enterprises, which can have a positive impact on their further growth and development. On the other hand, the prevailing orientation to the domestic market as well as the lower level of internationalisation of growing enterprises can lead to a decrease in their competitiveness, which can have a negative impact on the business performance and ultimately slow down economic growth.

In this paper, the definition of a growing enterprise of Global Entrepreneurship Monitor (GEM) is used - a business venture has the growing characteristic if it shows above-average innovation level measured by the perception of a representative sample of adult residents about product novelty, technology innovation, and the employment intentions (5 or more employees over a period of 5 years). In doing so, the European Union uses the OECD (2009) definition according to which the fast-growing enterprises are those that have an annual growth of more than 20% in a 3-year period, where this growth can be measured by the number of employees or turnover, or enterprises that have an annual growth rate of 10% or more in a 3-year period, with 10 employees at the beginning of the period. The GEM survey makes it possible to distinguish the level and intensity of internationaliation and innovation between "new" enterprises (i. e. enterprises with business ventures old from 3 to 42 months) and "adult" enterprises (i. e. enterprises with business ventures older than 42 months).

The dynamics and intensity of the internationalisation process in Croatia are indicated by the data on the structure of customers inside and outside the country of new and "adult" enterprises. For example, in the group of new enterprises in 2018, 59.8% had no customers outside the country or there were up to 25% of these customers, while 40.2% of the enterprises had more than 25% of customers abroad. In the group of adult enterprises in 2018, there were more - 65.7% that had no customers outside the country or there were up to 25% of these customers, and smaller number of the enterprises - 34.3% had more than 25% of customers abroad, according to Singer et. al. (2019). These data indicate that our enterprises are more focused on the domestic market than on the international market, which is caused by various reasons and are determined by a number of factors (size of the enterprise and type of business - a micro enterprise engaged in petty trade has no reason to opt for some form of internationalisation, high costs of the process of internationalisation, unstimulating entrepreneurial environment, etc.). However, growing enterprises focused on expanding their business and accessing new and larger markets, can seek their path to foreign markets and gaining competitive advantages in the global market, only through the process of internationalisation, which must be necessarily accompanied with a stimulating entrepreneurial environment and constant strengthening of innovative capacity.

2. The Role and Importance of Innovation in the Process of Internationalisation of Growing Enterprises

There is a general consensus among the authors in the economic literature on the importance of innovation in business entities and its impact on the creation of competitive advantage and economic growth. In this context, the notion of innovation activity means the ability to do something in a new or different way compared to the existing one, while achieving greater

efficiency and more effective product functionality for the end user. Linking innovation to entrepreneurial activity, Drucker (1992) sees the meaning of innovation in the pursuit of changes, as they provide an opportunity for something new and different, which requires a systematic analysis of the favourable opportunities that can arise through these changes.

Innovation of growing enterprises, particularly of small and medium-sized enterprises, is one of the most important factors of their growth, as evidenced by examples of rapid growth of enterprises, such as Starbuck or Apple Computers. This importance is even more pronounced if the enterprise builds its growth on exports and access to new and larger markets. Love and Roper (2015) have similar opinion, who find a positive link between the enterprise growth and innovation, but conclude that this link does not lead to significant business success without internationalisation and exports. In other words, export-oriented enterprises have the preconditions that the level of their innovation will be higher compared to enterprises that are not focused to the international market, Cao and Hansen (2006) claim, which allows them to gain a competitive advantage and generate potentially higher revenues. However, in order to maintain this competitive advantage in the long run, growing enterprises shall constantly focus on improving existing and / or creating new products and services, which is conditioned by the constant improvement of innovative capacity. The importance of innovative activity of enterprises in the process of internationalisation is particularly pronounced in the conditions of growing global competitiveness, accelerated technological development and business digitalization, shortening the product life cycle and increasingly diverse demand requirements. In this context, the notion of innovation takes on a new dimension and innovation is not only the introduction of new products or services, but it also refers to new processes and organizational structures, new business models, and new knowledge in all segments of economic and social development.

According to the more recent innovation paradigm, innovation is an endogenous category determined by the social context and represents essentially a social process conditioned by historical heritage, socio-cultural particularities, and the institutional environment as considered by Furman et. al. (2002). Thus, the conditionality of innovation activity becomes much broader and presupposes the connection of the innovation process of business entities with the innovation system at the regional and national level. This notion of innovation effect requires the need for a systematic approach to the concept of innovation management, with the National Innovation System being set as the most important concept.

In that sense, the notion of the National Innovation System means the networking of the institutions and organizations between the public and private sectors that interact to encourage the development of innovation to make full use of the society's innovative capacity, which indicates the importance of a stimulating entrepreneurial environment. Aralica (2012) says that technological development is an important determinant of building the innovative capacity of growing enterprises which due to accelerated progress affects the design and character of innovations that become increasingly intangible, which requires the need for the innovation process within the enterprise is open and the ability to use knowledge in the environment. Thus, new concepts of innovation have emerged, such as open innovation and knowledge-based social innovations aimed at creating new social structures. In this context, research of Šarlija and Stanić (2017) so far has shown that human capital directly affects innovation, which ultimately reflects the business performance and economic growth. The openness of the innovation process requires the existence of appropriate infrastructural support in terms of connection of various organizations, research and educational institutions participating in the innovation

process and their interaction with growing enterprises, which should be able to use this knowledge and availability of different types of technologies.

3. Methodological Approach

The secondary data obtained by the survey of the entrepreneurial capacity of the countries included in the Global Entrepreneurship Monitor were used in this paper for the empirical discussion on the internationalisation of business ventures and their innovative capacity. Croatia has been participating in the research since 2002, and this paper uses data from the survey conducted in 2018 (due to the COVID-19 pandemic, the survey results for 2019/20 will be published in 2021). The data used to show the innovative capacity relate to data on the creation of new products, the use of new technologies, the efficiency of research transfer and the success in innovation development, as well as the quality of the entrepreneurial environment. The GEM survey enables a differentiated analysis of new and growing enterprises as well as analysis of elements of the entrepreneurial environment that influence the shaping of entrepreneurial behavior. The paper also uses data of the Croatian Bureau of Statistics as well as data from other surveys that indicate the development of innovative capacity of individual countries - European Innovation Scoreboard, according to Bilas, Bošnjak, Novak (2019). A relatively small number of recent studies on the process of internationalisation and building the innovative capacity focused on growing enterprises have been set as a limitation in this survey.

4. The Overview of the Status of Innovative Capacity Building - the Example of Croatia

A number of authors who have dealt with the issue of the innovative capacity building, for example Švarc, Perković and Lažnjak (2011), believe that the innovation policy has not significantly contributed to the initiation of innovation and development of the knowledge-based economy, while others, such as Aralica (2012) point to inconsistency and barriers to the use of innovation potential. There are several reasons for this and they are not only financial in nature, and one of the most important is that innovation policy is not recognized as an important development policy, followed by a lack of understanding of governing structures in shaping mechanisms of building the innovative capacity and putting innovation in the function of economic growth. This is confirmed by the findings in the strategic document of the smart specialisation of Croatia for the period from 2016 to 2020, adopted by the Government of the Republic of Croatia (2016), which states, among other things:

1. The innovation performance over the last decades at the national level has been weak and failed to meet expectations, and the innovation system has operated below its potential as measured by the innovation inputs, outputs or contributions to the economic growth.
2. In terms of the innovation performance, Croatia is significantly below the EU average and lags behind comparable countries such as Slovenia, Slovakia and Estonia.
3. There are three factors that impede innovation: tax regime, lack of the first and second round of investment, and business environment.
4. High value-added products and services based on the know-how remain a negligible part of export, and the skills and technological capabilities have remained stagnant which affects the overall economic development.

Bilas, Bošnjak and Novak (2019) made a comparative analysis of the innovative capacity of individual countries applying different methodologies (Global Innovation Index, Bloomberg

Innovation Index and European Innovation Scoreboard) and concluded that Croatia has poor innovation performance according to all methodologies.

The authors state that according to the European Innovation Scoreboard, in 2018 Croatia was ranked 26th out of 28 European Union countries (behind Croatia were only Bulgaria and Romania), and Croatia was placed in the group of "moderate innovators", which indicates that the innovative capacity is one of the most significant limitations of building competitiveness. The state of innovation in Croatia is also indicated by the data from the GEM survey for 2018 regarding the creation of new products and the use of new technologies. In the category of adult enterprises, there were only 12.1% of the enterprises that had a product that was new to everyone or someone and with weak competition (since no one offers such a product or it is offered by a very small number of enterprises). Although Croatia is better in terms of technological equipment of its enterprises compared to the enterprises in the European Union, Croatia lags behind in terms of product innovation.

In this sense, the GEM survey data indicate that in Croatia 30% of new enterprises invest in the latest technology, but these enterprises realise only 13.8% of the products that are new to everyone, while in the European Union 13.6% of new enterprises invest in the latest technologies and realise 15.7% of the products that are new to everyone. At the same time, in Croatia, 28.3% of adult enterprises invest in the latest technology and these enterprises realise only 7.5% of products that are new to everyone, while at the level of the European Union 7.9% of adult enterprises use the latest technologies and realise 10.7 % of products that are new to everyone. The lag behind in the product innovation points to the issue of efficiency and structure of technological investments, as well as the quality and efficiency of innovation systems within the enterprise itself. This state of innovation in Croatia corresponds to the indicators of investment in research and development at the national level. Research and development in Croatia are characterised by very modest allocations from GDP for this purpose, and research and development are concentrated mainly in public institutions and are very often not based on the economy needs.

How much Croatia lags behind in the research and development can be seen from the comparison with the European Union: the European Union's goal by 2020 was 3% of investment in the research and development, and Croatia's goal is only 1.4%, and in 2018 only 0.97% of the investments realised, according to the Croatian Bureau of Statistics (2019). Also, 52.0% of the investments are made from the public sector, and 48.0% from the business sector in Croatia, while in the European Union about 2/3 of investments relate to the business sector. This points to a lack of recognition of the importance of the research and development component for building of growing enterprises by the public administration holders, as well as the lack of coordination in connecting the public sector, educational institutions and the business sector. According to the GEM survey, the average scores for the research and development transfer in 2018 are:

Table 1: Average scores for the category of entrepreneurial environment - research and development

Statement	Score
Knowledge of new technology, scientific achievements and other knowledge is efficiently transferred from university and research centres to new and growing enterprises.	2.66
New and growing enterprises have the same access to new technology and research as large enterprises.	2.86
New and growing enterprises can afford new technology	2.71

Statement	Score
There is adequate financial support from the Government to enable small and growing enterprises to acquire new technology.	3.00
Scientific and technological infrastructure effectively supports the creation of world-class technology-intensive business ventures in at least one area.	3.21
There is adequate support available to engineers and scientists to facilitate the commercialisation of their ideas through new and growing enterprises.	2.79

Source: Singer, S., Šarlija, N., Pfeifer, S., Oberman Peterka, S. (2019): What makes Croatia a (non) entrepreneurial country? Gem Croatia 2018, Cepor, Zagreb Values 1 to 9 (1- the worst, 9-the best)

The scores from the table above point to the issue of access to new technologies, the connection between research institutions and the business sector, as well as the issue of the entrepreneurial environment in the process of building the innovative capacity. In the structure of expenditures of the business sector for research and development, large enterprises are dominating, that invested about 61.1% of total expenditures for the research and development, while 38.9% of expenditures relate to the research and development of small and medium enterprises according to the Croatian Bureau of Statistics (2019) which can consequently affect the intensity of innovation and the number of patent applications. In this context, in 2017, Croatia had 2.3 patents registered per million inhabitants with the European Patent Office, which, along with Romania, is the lowest number of patents of all the observed EU countries according to Nikolić (2018). Patents are important because they indicate the success of the commercialisation of innovations, i. e. the link between inventions, innovations and markets, and if a country has few patents, then it may mean that there are few innovations and few products / services of new values in the market, which ultimately limits the global competitiveness of the national economy and slows down the economic growth. Funding sources are an unavoidable component in the process of internationalisation and building the innovative capacity of growing enterprises. In this context, Croatia has a poorly developed venture capital market, while in the process of lending to enterprises by commercial banks there are also difficulties, and one of them is the inadequate relationship between the loan amount required by the enterprise and collateral needed for business activities. Inadequate financing conditions and the absence of various types and forms of financial instruments point to the need to strengthen venture capital funds and introduce tax incentives for business angels.

Considering the issues of the innovative capacity building according to the size of the enterprise, the share of innovative enterprise grows with their size. According to the survey of the Croatian Bureau of Statistics (2020), in the period from 2016 to 2018, 74.6% of large enterprises, 56.5% of medium-sized enterprises and 45.8% of small enterprises were innovative. Innovative enterprises are defined as enterprises that have introduced product innovation (physical product or service) or process innovation in the observed period. This structure is partly understandable given that small and medium-sized enterprises have limited opportunities in financing the innovation process compared to large enterprises.

The possibilities of building the growing enterprises are determined by numerous factors, primarily the owners' commitment to further growth, types of products or services, market conditions, etc., but these opportunities are strongly determined by the quality of the entrepreneurial environment. According to the GEM survey for 2018, in terms of the total value of the business environment - NECI index (National Entrepreneurship Context Index - NECI) of 3.83, Croatia is the last of the 18 European Union countries included in the survey, where the average score was 5.12 which indicates the problematic quality of the business environment

at the national level (value of NECI 1-very bad business environment, value of NECI 10-very good business environment). The survey results indicate that the entrepreneurial environment in Croatia acts more as a limiting rather than stimulating factor in the development of entrepreneurship and the building of the growing enterprises, and the Government policies, entrepreneurial education and cultural and social rules are particularly critical components. However, the innovative capacity of an enterprise is determined by a number of other factors, including the connection of innovation activities of companies with innovation activities at the national level, as well as directing innovative activities towards strategic niches. This points to the need to establish mechanisms for stronger connections between the business and scientific research sectors and the networking of participants in the innovation process in order to make full use of the innovative capacity of society. This requires an effective innovation policy that includes not only adequate investment in research and development, but primarily involves directing innovation activities within the socio-economic structure, which requires a long-term vision that is lacking in Croatia.

5. Conclusion

The presented results indicate that Croatian enterprises have significant difficulties in the process of internationalisation, which should be a strong warning for an urgent and comprehensive action in building the innovative capacity of the enterprises. As a small market, Croatia is forced to seek access to foreign markets, where the intensification of the internationalisation process and strengthening the competitiveness of growing enterprises require the development of products and services that can be sustainably competitive in international markets, which requires building their innovative capacity. In this context, the indicators of previous surveys indicate that Croatia lags far behind in terms of the innovation success in relation to the countries of the European Union, which corresponds to the indicators of low investment in the research and development. In addition to a theoretical presentation of the importance of innovation in the process of internationalisation and analysis of the situation in Croatia, the contribution of this research is in proposing recommendations for strengthening the innovative capacity of the society, as a prerequisite for building sustainable competitiveness. In this sense, improving the process of building the innovative capacity of the society requires a public consensus on the priority of investment in research and development, and the development of an entrepreneurial environment in which cooperation between business and research will be stimulated (i. e. tax policy). The need to improve public policies implies the need to restructure public administration, and this requires interventions in the education sector by preparing people for jobs that require critical thinking and a pragmatic approach, creativity in finding solutions to problems and proactivity. Implementing the recommendation of the European Commission on the application of the concept of entrepreneurial competencies EntreComp: The Entrepreneurship Competence Framework, according to European Commission (2016), to the education system as a whole would ensure the strengthening of the innovative and proactive capacity of the entire society. In order to strengthen growing and innovative enterprises, it is necessary to ensure the access of such enterprises to financial sources outside the traditional banks, i. e. by establishing the State Venture Capital Fund.
Opportunities to increase the innovative capacity of the society are also found in improving horizontal and vertical coordination in harmonising public policies, strategies and programs related to entrepreneurship and innovation, designing mechanisms for a higher use of innovation potential at the regional level and stronger organisational networking of all stakeholders in the innovation process. The key tool for operationalising this process is the

Triple Helix model of cooperation, in the operationalisation of which it is important to define precisely the goals, relationships between participants, their competencies and mechanisms of cooperation. In the context of the need to implement a structural change, the main recommendation for policy makers is: to launch a public-private dialogue on a broader social basis to create a platform for shaping structural changes and a long-term vision of economic development, which includes respecting of policy makers for innovation potential; respect for entrepreneurship as part of the value system of the society. Thus, it is desirable to create a consensus of key stakeholders on the content of structural changes and important development issues, which is especially important for overcoming the development difficulties caused by the pandemic as quickly as possible.

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THE IMPORTANCE OF THE INTERACTION OF ENTREPRENEURIAL ENVIRONMENT AND BUSINESS CONDITIONS IN THE PROCESS OF BUILDING GROWING BUSINESS VENTURES

ABSTRACT

The process of business ventures development is influenced by a number of factors and unpredictable trends, but the dynamics and intensity of this development are largely determined by a stimulating or limiting entrepreneurial environment. Therefore, the aim of this paper is to point out the importance of building a stimulating entrepreneurial environment that in interaction with business conditions can generate the growth of business ventures. The paper applies general methods of scientific research such as methods of analysis and synthesis and generalization and specialization, and the following primary and secondary sources were used as data sources: Global Entrepreneurship Monitor, the Croatian Bureau of Statistics, and others.

The results of research on the development level of the entrepreneurial environment in Croatia indicate that this environment has a more limiting than stimulating effect on the development of economic growth, which is manifested through a small number of growing business ventures and entrepreneurial motivation significantly determined by starting business ventures out of necessity rather than out of business opportunity. Most of the factors that create the entrepreneurial environment are set as long-term obstacles in economic development, namely: the functioning of public policies towards entrepreneurship, sources of funding, entrepreneurial education, transfer of research results to business sector, socio-cultural values, etc. The level of quality of the entrepreneurial environment is determined by the quality of each subject but only those environmental factors that are stimulating and interact with stimulating entrepreneurial conditions, can generate a stimulating entrepreneurial climate that will enable more dynamic building of growing business ventures.

Keywords*: growing business ventures, entrepreneurial environment, interaction.*

1. Introduction

Economic growth and development are conditioned by the growth of business ventures, which requires the commitment of owners to expand their business, the existence of competitive products or services that are financially sustainable in the long run, as well as the existence of a number of other interrelated resources and conditions that encourage such growth (regulatory framework, financial capital, market openness, etc.). In this context, fast-growing business venture are of particular importance for economic growth as carriers of competitiveness, new value creation and new employment. In doing so, the European Union uses the OECD definition

according to which fast-growing business ventures are those that have an annual growth of more than 20% in a 3-year period, where this growth can be measured by number of employees or turnover, or those business ventures that have an annual growth rate of 10% or more in a 3-year period, with 10 employees at the beginning of the period, according to Singer, Šarlija, Oberman Peterka (2019). The growth of business ventures depends on the motivation of owners, the design of the entrepreneurial environment and the quality of their interaction. Therefore, it is of critical importance to know the owner's motivation, the extent of creating a stimulating entrepreneurial environment and what is the interaction of individual components within the entrepreneurial environment and what is the interaction of the environment with the entrepreneur. The analysis confirmed the existence of long-term obstacles in the building of growing business ventures, which largely stem from the insufficient quality of certain components of the business environment at the Croatian level, which indicates the need for more dynamic and intensive implementation of structural changes.

2. The importance of encouraging entrepreneurial environment in the process of building growing business ventures

Implementation of entrepreneurial activities and the dynamics of development of growing business ventures development is largely determined by the encouraging entrepreneurial environment and business conditions. Given that macroeconomic business conditions are significantly determined by policy makers and social institutions, they significantly influence the shaping of the entrepreneurial environment and determine whether this environment will be more stimulating or more limiting for development. Environmental factors related to the functioning of institutions and institutional support for development are particularly important. In economic literature, the term "institution" is associated with the term "institutional economy" which can be defined as an effort to direct and control economic activities in a given country, as opposed to a "laissez faire"[1] approach based on free market as a regulator of economic and social trends. South Korean economist Ha-Joon Chang (2014) holds that the free market essentially does not exist, and the market seems free only because we unconditionally accept its limitations so that we are no longer aware of them at all. Furthermore, he believes that it is not possible to objectively define how much a market can be free and that the State is always involved in it. Considering the scope of the role of the State and its institutions in economic and social development, it can be said that it is determined by social order and essentially depends on the relationship between economic and political power. Considering the relationship between institutions and economic growth, a number of authors agree that the institutional structure is important for economic growth as claimed by Campos (2000), Acemoglu, Johnson, Robinson (2004), while others, such as Glaeser et al. (2004) believe that economic growth can be triggered without major institutional changes, but good institutions are necessary to maintain long-term growth rates, as claimed by Rodrik (2004). The results of previous surveys indicate that certain elements of the institutional environment (legal system, macroeconomic business conditions, tax system, corruption, access to finances, economic policies, etc.) often represent significant obstacles to the building of business ventures.

The key to the successful functioning of the legal system is the establishment of the rule of law, which guarantees all citizens equality before the law and economic freedom, thus making the rule of law a factor in the protection of all members of society against excessive power the

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[1] The term "laissez-faire" means a French term referring to the absencce of state influence in the economy

excessive power of those who rule and allows everyone the same conditions of participation in market competition. The rule of law is one of the unavoidable institutional components of public governance as claimed by Campos (2000), and its importance is reflected in the implementation of constraints that are particularly inherent in institutions. The studies by Mauro (1995) indicate that countries with high levels of corruption have lower gross domestic product growth rates (hereinafter GDP). On the other hand, a high level of the rule of law reduces business uncertainty, which is particularly important for building of growing business ventures, and encourages investments. The financial market is extremely important in shaping the entrepreneurial environment. A developed financial market has a positive effect on the dynamics of economic growth and development of business ventures, while an underdeveloped financial market makes it more difficult for business ventures to access capital, and limits their development. In addition to traditional forms of lending by commercial banks, the developed financial market presupposes the activity of investors: venture capital funds, business angels, etc., where the existence of venture capital is considered crucial for economic growth and innovation in countries worldwide Cumming (2003). There is no unique view in the literature on the conceptual definition of *private equity* and *venture capital*. It is considered that *private equity* is a form of equity investment in private business ventures that are not listed on the capital market, while *venture capital* is a type of *private equity*, i.e. investing equity in *start-up* business venture. Unlike *venture capital*, which focuses on financing companies in the early stage of development, *private equity* capital refers to investing in business ventures that are in later stages of development and investing in business ventures that achieve lower business results. With these types of investors, venture capital does not burden the cash flow and does not create costs for the business venture, unlike the use of bank capital.

Unlike *private equity* and *venture* capital, business angels are informal individual investors who use their business experience to advise young enterprises and provide them with business contacts and offer equity in exchange for a share in their ownership.

In the process of building of growing business ventures, changes in the environment and the need to adequately respond to them are the reason for strengthening the importance of human resources and the use of knowledge and skills of people to keep business ventures in the market. In the economic literature, there is a general consensus among most authors that countries richer in knowledge assets and national intellectual capital progress faster and achieve higher levels of growth. The notion of intellectual capital in the economic literature is defined in different ways, but it is essentially about the ability to turn invisible assets like knowledge into products that bring new value. Numerous authors have contributed to the development of the theory of intellectual capital, but the general popularization of the concept of intellectual capital was mostly contributed by Edvinsson (2003), who sees the relationship between intellectual and human capital through the formula:

"Human capital x structural capital = intellectual capital"

from which it can be concluded that intellectual capital is superior to human capital, assuming its broader content. Most economic theorists agree that intellectual capital is one of the key determinants of economic growth wherein educational institutions contribute to understanding the connection between entrepreneurial environment activities and various environment elements. However, the level of education alone is not sufficient to achieve competitiveness and growth, in conditions of unsatisfactory level of the rule of law, widespread corruption and insufficiently efficient State, even the best educated workforce will not be sufficient to achieve competitiveness Rose-Ackerman holds (1999). In considering certain elements of the structure

of the entrepreneurial environment and their impact of building of the growing business ventures, cultural and social rules are of special importance. Research of Landes (2003) on the connection between cultural values and economic and social development suggests that this component of the entrepreneurial environment is a key factor that distinguishes rich countries from poor ones. At the national level, public policies towards entrepreneurship, through which a regulatory framework is created, as well as programs to encourage the development of entrepreneurship, which define the priorities and conditions of support, are especially important for building of growing business ventures. In this sense, public administration and institutions that operationally implement public policies can be stimulating, but also limiting factors in the process of building of growing business ventures.

3. Methodological approach

In this paper, the results of previous research on entrepreneurship and growing business ventures were used for empirical discussion with focus on Croatia. Data from the Global Entrepreneurship Monitor survey were mostly used to show the motivation and quality of the entrepreneurial environment.

4. The relationship between the entrepreneurial environment and business conditions - the example of Croatia

Various surves take into account different elements of the business environment using different methodology for evaluation of these elements (Global Entrepreneurship Monitor, World Bank-Doing Business, World Economic Forum).

The analysis of the structure of the entrepreneurial environment in this paper is based on the survey of Global Entrepreneurship Monitor (hereinafter GEM), which takes into account a number of different components from the social, economic, cultural and other aspects, and is suitable for analyzing elements of the entrepreneurial environment for new and growing business ventures as well as for analysing the entrepreneurial behaviour. According to the GEM survey for 2018, according to the total value of the NECI[2] (the National Entrepreneurship Context Index index of 3.83, Croatia is the last of the 18 European Union countries included in the survey, where the average score was 5.12, which indicates the problematic quality of the business environment at the national level.

By individual omponents of the entrepreneurial environment, the average ratings in 2018 at the Croatian level are.

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[2] The components of the business environment according to the NECI index are: Government policies towards entrepreneurship-regulatory framework, Government policies towards entrepreneurship-priorities and support, Government programs for entrepreneurship, access to money funds, market openness-without barriers to entry, market openness-dynamic change, transfer of research and development, commercial and professional infrastructure, access to physical infrastructure, cultural and social rules, entrepreneurship education - primary and secondary education, entrepreneurship education - tertiary education.

Table 1: The score per individual components of the entrepreneurial environment in 2018

Components of the Entrepreneurial Environment	Score
Access to money	3.97
Government policies - priorities, support	2.82
Government Policies - Taxes and Regulations	2.10
Government Programs	3.29
Entrepreneurial education-primary and secondary	2.45
Entrepreneurial education-tertiary	3.71
Research and Development Transfer	2.97
Professional and commercial infrastructure	3.76
Market openness-dynamics of change	5.13
Market openness - barriers to entry	3.01
Physical infrastructure	5.61
Cultural and social norms	2.74

Source: Singer, S., Šarlija, N., Pfeifer, S., Oberman Peterka, S. (2019): What makes Croatia a (non) entrepreneurial country, Gem Croatia 2018, Cepor, Zagreb, Values 1 to 9 (1-the worst, 9-the best)

The table shows that the best ratings were obtained for the components of physical infrastructure, while the worst ones were given to Government policies in terms of priorities and support, as well as taxes and legislation.

If, according to the same survey, we look at the ratings given for individual subcomponents of the business environment in new and growing business ventures in 2018, then the highest scores are given to physical infrastructure (6.82) for the claim that a new or growing business venture can open a telephone line or obtain Internet access in about a week, a score of 6.0 for the claim that it is not too expensive for a new or growing business venture to get a good access to a communications network). However, scores for Government policies in the area of taxes and regulations, as well as Government programs for new and growing companies, are extremely low (below 2.5).

In this context, new and growing business ventures find it difficult to cope with bureaucracy and regulatory requirements, the level of tax liabilities is still high, tax policy is inconsistent and unpredictable, there is discrimination in public procurement and it is difficult to reach all required permits and certificates in a short time.

Low scores for claims related to Government policies indicate a continuous and long-term problem of the functioning of public policies, institutions and public administration in Croatia. Brčić and Vuković claim (2008) that public administration in our country has the characteristics of a state administration that functions strictly centralized, with the dominance of bureaucratic rules and suppressed creativity and high dependence of organizational values about the political environment, where reliability and legality of performing tasks are more important than expertise and work results. Such features of public administration are a challenge for the process of its restructuring. There is no clear division of responsibilities between holders of public functions at the central, regional and local levels of government, so that their responsibilities overlap in the implementation of public policies. According to findings of Petak (2008), in the process of public administration in our country there is a problem of coordination at all levels, both horizontal coordination related to the harmonization of activities among ministries and vertical coordination related to the coordination of activities of the Government and regional government and local self-government.

In Croatia, the offer of financial instruments and the structure of funding sources is a major obstacle to the more dynamic development of business ventures. The *venture* capital market is

poorly developed and there are also difficulties in lending to business ventures by commercial banks, and one of them is the inadequate relationship between the amount of credit that the that the business venture asks for and the collateral needed to carry out business activities. Inadequate financing conditions and the absence of various types and forms of financial instruments point to the need to strengthen the *venture* capital funds and to introduce tax incentives for business angels. According to GEM survey indicators, Croatia has a good score for market dynamism, which is important for creating entrepreneurial opportunities, but the score for market openness related to the existence of barriers that have a limiting effect on investment and internationalization processes are lower. This is supported by the indicators for 2018, when for the openness of the market related to the existence of barriers, the score for Croatia was 3.01, while for the same category the score for European Union countries included in the GEM survey was 4.58, according to Singer et.al. (2019).

Research and development in Croatia are characterized by very modest allocations from GDP for this purpose, and research and development are concentrated mainly in public institutions and are very often not based on the needs of the economy. In Croatia, 51.6% of investments are made from the public sector, and 48.4% from the business sector, while in the European Union about 2/3 of investments relate to the business sector according to the Croatian Bureau of Statistics (2020). This points to the lack of recognition of the importance of th research and development component for growing business ventures by public administration holders, as well as the lack of coordination in connecting the public sector, educational institutions and the business sector.

Out of 54 countries included in the GEM survey for 2018, Croatia was rated the worst for the component of cultural and social rules and in particular the responsibility of the individuals to manage their own life is lacking. The missing structure of the cultural and social environment in Croatia correlates with the level of confidence in the institutions of society. According to surveys of Rimac and Štulhofer (2004) in Croatia, trust in almost all institutions of society has been lost, which is not unusual given the court proceedings and evidence of corruption and betrayed expectations in solving the problem of unemployment and economic growth.

Scores for the contribution of education in the creation of entrepreneurial competencies in Croatia are also low, especially for tertiary education and the claim that primary and secondary education pays adequate attention to entrepreneurship.

In order to transform entrepreneurial intentions into a decision to develop a business venture, it is necessary to have favourable influences on making such a decision: from personal beliefs in own abilities to a stimulating entrepreneurial environment (legal system, financial system, education system, etc.). In this context, the results of the GEM survey for 2018 indicate a gap between high perception of personal abilities to start a business venture and low perception of business opportunities (indicating the question of the reality of such self-confidence) as well as the gap between below-average recognition of opportunities and above-average expression of intentions on starting a business venture (which points to the question of the source of motivation). Differences in motivation for entrepreneurial activity are monitored in the GEM survey through two indicators from which the motivational index is derived (TEA opportunity versus TEA necessity)[3]. The motivation coefficient above 1 means that there are more of those who entered the entrepreneurial activity by their own free will because they saw a business opportunity, which indicates that the entrepreneurial environment is stimulating. The motivation coefficient below 1 means that prevail those who entered the entrepreneurial activity

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[3] TEA - Total Entrepreneurial Activity is the percentage of people with a business venture not older than 3.5 years, and was initiated either because of a perceived opportunity or out of necessity (there is no other option to ensure their own existence).

out of necessity (such as job loss, long-term unemployment, etc.). According to the GEM survey, in 2018 Croatia had a motivation index of 1.9, which was the lowest index compared to the average index achieved in the countries of the European Union - Singer et.al. (2019). The GEM survey results for Croatia in 2018 also indicate that entrepreneurs with business ventures older than 42 months had a share in the use of the latest technologies of 28.3%, while at the same time their share in creating products that are new to all customers is only 7.5 %, which is below the European Union average. The lag in product innovation points to the question of the efficiency and structure of technological investments, but also the quality of the innovation system within the business venture itself. An analytical review of the quality of the entrepreneurial environment in Croatia indicates the lack of many elements of the environment: from public policies towards entrepreneurship and entrepreneurship development programs to the lack of financial instruments to encourage entrepreneurship and the inadequacy of education to build entrepreneurial competencies. Given that in the process of shaping the entrepreneurial climate, the elements of the environment are intertwined and that each individual sector can hardly adequately respond to increasingly complex challenges of society, there is a need to improve public-private dialogue in society and improve cooperation among sectors. The Triple Helix concept, according to Etzkowitz and Leydesdorff (2000), which connects three key stakeholders in society: educational and scientific institutions, the business community and the public sector and thus becomes a platform for knowledge commercialization, research and development, and encouraging entrepreneurship and innovation, can be used as a starting point in improving this cross-sectoral cooperation. In designing this concept in our conditions, it is necessary to take into account already existing models of cooperation such as Economic- Social Councils at the state and regional level, because in their operationalization numerous and diverse barriers can occur: different perceptions of stakeholders on the role of the public-private dialogue, particular interests of stakeholders, lack of informing participants about certain development issues, etc.

Therefore, it is important in the implementation of the Triple Helix concept into economic and social trends, to define variables that describe the relationships between key actors and mechanisms of cooperation. By designing the Triple Helix concept in a way that removes traditional and bureaucratic barriers, this concept can improve coordination in the process of shaping development measures and help implement the structural changes that are set in our circumstances as a condition for more dynamic economic growth.

5. Conclusion

Based on the research on the importance of the interaction of business environment and business conditions in the process of building growing business ventures, the following has been learned: The development/building of business ventures is influenced by numerous and diverse factors as well as unforeseen trends in the environment (which are not only economic in nature), where the dynamics of this development is significantly determined by stimulating or limiting factors of the entrepreneurial environment. Indicators of recent research on the development of the entrepreneurial environment in Croatia indicate that this environment has a more limiting than stimulating effect on the development of business ventures as well as on the overall economic and social development. The level of quality of most factors of the entrepreneurial environment is significantly below the average quality of these factors in European Union countries, which is manifested through a small number of growing business ventures and entrepreneurial motivation which is significantly determined by starting business ventures out of necessity rather than business opportunity.

 In the observed research period of the quality of the entrepreneurial environment (2018), the largest number of factors are identified as long-term problems in economic and social development. First of all, this refers to the functioning of public policies, particularly in the segment of government policy towards entrepreneurship as well as government programs for entrepreneurship. Inconsistency is the key feature of these policies and entrepreneurial programs. This points to the need to raise the quality of public policies towards entrepreneurship and improve institutional support, with public administration restructuring being a necessary condition for increasing the effectiveness of these policies. In addition, opportunities to improve public policies as well as building a stimulating entrepreneurial environment are to improve horizontal and vertical coordination in harmonizing policies, strategies and programs, as well as establishing public-private dialogue in society through the Triple-Helix model of cooperation, precisely define the goals, relationships between stakeholders and mechanisms of cooperation.

As the lack of capital is one of the major problems in the process of building business ventures, which often limits entrepreneurial ventures, the introduction of tax incentives for *venture* capital funds and business angels, would contribute to their empowerment, and thus entrepreneurial activity in business ventures. In the meantime, it would be purposeful to establish a State Venture Capital Fund at the national level to finance growing and innovative business ventures, which would further encourage their development.

The entrepreneurial climate in Croatia is significantly determined by the lack of appropriate education that would be focused on the use of business opportunities, entrepreneurial ventures and innovative and responsible action. In this context, in the process of entrepreneurial education and building entrepreneurial competencies, it is meaningful to use the holistic approach and recommendations of the European Commission "EntreComp:The Entrepreneurship Competence Framework", according to European Commission (2016), the application of which has not been visible so far.

A significant obstacle in building a stimulating entrepreneurial environment and overall economic and social development are cultural and social rules, which do not fully support the development of entrepreneurship as a social value and where there are opportunities for improvement. Given that cultural and social rules are significantly created by policy makers, the education system and the media, but also by the bearers of the educational process of each individual, they bear the greatest responsibility for their adaptation to entrepreneurial activity as a social value. The level of quality of the entrepreneurial environment is determined by the quality of each factor separately, but only those environmental factors that are stimulating and ultimately raise the level of democratization of society, in interaction with stimulating entrepreneurial conditions can generate a healthy and stimulating entrepreneurial climate for building business ventures investment and economic growth.

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A scientific paper

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ADVISORY SERVICES TO SMALL AND MEDIUM-SIZED ENTERPRISES DURING THE COVID-19 VIRUS PANDEMIC

ABSTRACT

The complete shutdown of economic activity during March, April and May 2020 was aimed to prevent the further spread of the COVID-19 virus and prevent a collapse of the health system in the Republic of Croatia. The virus pandemic, as well as the economic consequences of the crisis caused by the pandemic, posed a new challenge for all commercial entities, especially the small and medium-sized enterprise (SME) sector, which, during the last financial crisis in 2008, was also in a much more unfavourable position compared to large enterprises. Entrepreneurship Development Strategy of the Republic of Croatia 2013-2020 defines the role of entrepreneurship support institutions, which includes the provision of advisory assistance. Since 2010, when there were 88, the number of business support institutions has grown to 473 institutions, as of November 20, 2020. Such a network of institutions, whose work is co-financed by budget funds, makes their services available to all economic entities. On the other side of the market of advisory and consulting services, there are private initiatives (business entities engaged in this activity), whose services and work are not co-financed from the state budget.
The aim of this paper is to examine how and to what extent entrepreneurship support institutions truly support the SME sector, especially in times of crisis, and how much they monitor their needs. The paper compares the offer of both types of institutions and analyses the extent to which the offer was in line with the needs of the SME sector during crisis caused by pandemic.
Data were collected through primary research (interviews with representatives of 4 business support institutions and 4 representatives of private consulting companies) and secondary research (an overview of the services offered on official websites of all business support institutions).
Research results indicate a lack of timely support of business support institutions in the form of innovative products and services that would be tailored for entrepreneurs affected by the crisis. At the same time, private consulting firms demonstrated speed and flexibility and promptly approached clients from the SME sector and offered them appropriate service and support. Concluding remarks of the paper indicate a reduction in the capacity of business support institutions for entrepreneurial activity (proactive and innovative) whose causes should be sought in the sources of funding, and almost complete orientation towards EU projects which, with their longer period of preparation and implementation, reduce the sensitivity of entrepreneurship support institutions to problems of those to whom, according to their mission, they should primarily be focused.

Keywords: advisory services, SME sector, business support institutions, COVID-19.

1. Introduction

The disease caused by the COVID-19 virus was officially declared a global pandemic by the World Health Organization on March 11, 2020[1]. With the outbreak of the pandemic, Croatia, like most countries in the world, adopted epidemiological measures that suspended or significantly slowed down economic activities. As a consequence of the pandemic, Croatia recorded the highest decline in GDP in the last 20 years, which, according to estimates by the Croatian National Bank[2], could amount to about 9%. In March 2020, the Croatian Government, among the first in the European Union, adopted the first package of 66 measures to help the economy[3], aimed at preserving liquidity and jobs, and amortising the initial impact of the pandemic on the economy. Three waves of so-called COVID measures of the Croatian Government included, inter alia, interest-free deferral of payment and / or instalment payment of tax liabilities, in order to preserve liquidity; a moratorium on credit lines of the Croatian Bank for Reconstruction and Development (HBOR) on all existing placements with the possibility of introducing a grace period for repayment of principal; loans to finance overheads; suspension of all forced collections against all debtors for a 3-month period; expansion of the volume of the guarantee fund for export insurance at HBOR for Croatian exporters, and a moratorium on all instalments of ESIF Micro and Small loans for rural development of the Croatian Agency for SMEs, Innovations and Investments (HAMAG-BICRO) until the end of 2020.

Only from march to June 2000, about HRK 6 billion in aid was paid to businesses whose operations were significantly disrupted due to suspension or reduction of business activities. Analysis of data[4] on granted financial assistance through measures of the Government of the Republic Croatia for preservation of jobs and liquidity of business entities whose activity has been suspended or significantly slowed down due to the crisis, indicates that 55% of the Croatian economy is exposed to the crisis, and that crisis caused by the pandemic affected more than 60% of small and medium, and 44% of large business entities.

Tourism-related activities had the greatest exposure to the pandemic globally. Prior to the COVID-19, travel and tourism accounted for 10% of the world economy's revenues, providing 320 million jobs worldwide. According to estimates of the United Nations World Tourism Organization[5], the pandemic has affected 100 million jobs, the vast majority of which are in small and medium-sized enterprises.

Given the high share of tourism (both direct and indirect) in Croatia's GDP and weak diversification of the Croatian economy, according to the criterion of declining operating revenues, four of the five most affected sectors are directly or indirectly related to tourism:

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[1] https://www.who.int/docs/default-source/coronaviruse/transcripts/who-audio-emergencies-coronavirus-press-conference-full-and-final-11mar2020.pdf?sfvrsn=cb432bb3_2, accessed March 8, 2021

[2] "Smanjenje BDP-a u 2020. oko 9 posto; u 2021. godišnji rast oko 5 posto", Croatian National Bank, Press release published on December 17, 2020, https://www.hnb.hr/-/smanjenje-bdp-a-u-2020.-oko-9-posto-u-2021.-godisnji-rast-oko-5-posto, accessed March 8, 2021

[3] https://www.koronavirus.hr/mjere-pomoci-gospodarstvu/126

[4] Leho, E., Mandarić, J., Njegovec, H., Oreški, I. (2021). Analiza izloženosti gospodarstva pandemiji koronavirusa, FinInfo Analize, https://el-koncept.hr/analiza-izlozenosti-gospodarstva-pandemiji-koronavirusa/, accessed February 10, 2021

[5] Behsudi, A. (2020). Tourism-dependent economies are among those harmed the most by the pandemic, International Monetary Fund, https://www.imf.org/external/pubs/ft/fandd/2020/12/impact-of-the-pandemic-on-tourism-behsudi.htm, accessed February 10, 2021

processing of wood and wood products, wholesale and retail trade of motor vehicles, travel agencies, tour operators, food and beverage service activities and accommodation. The least affected sectors by the pandemic in the Croatia economy, which already record above-average performance compared to other sectors in terms of productivity and liquidity, are computer programming and consulting, waste collection, treatment and disposal, telecommunications, electricity and gas supply, and production of basic pharmaceuticals[6].

Despite the job preservation measures of the Government of the Republic of Croatia, a number of jobs was lost due to the pandemic. The number of unemployed in October 2020 is higher by about 34,000 compared to the same period in 2019. Given that at the end of the February 2020 the number of unemployed was approximately 18,000 less than in the same period last year, it can be concluded that about 50,000 jobs[7] were lost due to the impact of the pandemic by October 2020. Since small and medium-sized enterprises are the most exposed to the crisis, and the majority of job preservation aid was paid to business entities in this sector (87%), the largest loss in employment was generated in the small and medium-sized enterprise sector.

At the macroeconomic level, according to Kovač (2020), the pandemic caused a sudden and unexpected decline in all economic activities, including production, trade, investment activities, import and export. Short-term economic impacts caused by the pandemic can be seen in the disruption of the supply and distribution system, increase in illiquidity and reduction in aggregate demand. Long-term impacts, although difficult to see at this moment, may manifest in changing demand trends, a decrease in the total number of new businesses, and a decrease in the number of jobs (Naude, 2020). Businesses around the world (regardless of their size) have encountered this form of crisis for the first time, the so-called "corona crisis", i.e., an economic crisis caused by a virus pandemic. Macroeconomic experts around the world have emphasised that this crisis bears no resemblance to the 2008 financial crisis, which further complicating strategic decisions for businesses. In such circumstances, they require the assistance and advice of experts to minimise the impact of the crisis, but also to maintain their market position. Management weaknesses are widely considered the greatest internal constraint in SMEs around the world (Turok & Rico, 2000), and not only in crisis conditions. According to data on revenues and fees to consultants in the United Kingdom in 2012, the most sought after and best paid consulting task was related precisely to strategic planning (O'Mahoney & Markham, 2013). The SME sector is likely to be most affected by shock events according to Doshi et al. (2018) and Howell et al. (2020). During a crisis, according to Brown (2020), SMEs will first face liquidity problems due to cost minimization strategies. A lack of funding will create a 'wait and see' mentality according to Brown (2020), which will lead to a lack of adaptation in SMEs. As internal sources of finance are crucial for SMEs (Robb and Robinson, 2014), many of them will run out of cash income during the crisis, threatening the continuation of their businesses. At the same time, access to bank credit becomes more problematic during the crisis (Demirguc-Kunt et al., 2020). Sources of entrepreneurial finance decrease dramatically during the crisis (Howell et al., 2020).

Within the SME sector, the smallest SMEs, micro-enterprises and start-ups, which have the fewest resources, are likely to be the most affected (Brown, 2020). Therefore, there are two important dimensions to the policy support proposals in the OECD report (2020). In the short term, a very rapid response is needed to ensure liquidity. In the long run, policy support should focus on a range of measures to ensure growth. According to Brown (2020), these policies need to focus on behavioural change. Omar et al (2020) found that during the crisis, the ability of SMEs to reshape their business orientation within a short period of time is quite limited but

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[6] Leho, E., Mandarić, J., Njegovec, H., Oreški, I. (2021). Analiza izloženosti gospodarstva pandemiji koronavirusa, FinInfo Analize, https://el-koncept.hr/analiza-izlozenosti-gospodarstva-pandemiji-koronavirusa/ accessed February 10, 2021

[7] Ibidem.

crucial for their survival. Changes in business strategies, business operations, and business behaviours, as well as pressure to seek new development opportunities, are identified as critical factors for survival during crisis (Cassia et al., 2012; Svatosova, 2017; Syed, 2019).

To the best of our knowledge, the literature and research base on the role of consulting in business redesign is sparse. However, there is a consensus that SMEs need help in these challenging times as how SMEs survive, adapt and respond to the COVID -19 crisis will have huge implications for future economic and social wellbeing (Brown, 2020). Therefore, the final action taken by various business support institutions is to provide "free and confidential business advisory services to SMEs in need" (Omar et al, 2020). Advisory and consultancy services are designed to help SMEs find their way out of the crisis.

But it seems that despite the need, especially now when the right advice can mean survival in the market, entrepreneurs do not get advice when they need it most. According to Yusuf (2010), there is a gap between the latent and expressed needs of entrepreneurs. Thus, more efforts are needed to identify the latent needs of entrepreneurs, but also, according to Yusuf (2010), policy makers and business support institutions should focus more on ensuring that entrepreneurs get the right advice in a timely manner.

There is a great distrust in consulting services among owners of small and medium-sized enterprises. Most of them are either unaware of the existence of this type of services, sceptical about their benefits (Turok & Rico, 2000) or confused about the offer (business support institutions, development agencies, consultants and advisors).

On the other hand, business support institutions do not have the necessary capacity to provide consulting and advisory services in all segments of business of small and medium-sized enterprises. According to the results of the study *Analysis of the existing system of business support institutions* [8] *,* conducted by the Croatian Agency for SMEs, Innovations and Investments (HAMAG BICRO) within the BOND project in 2018, owners of small and medium-sized enterprises in the Republic of Croatia most often sought legal counselling, services related to internationalisation of business and development of business entities, which these institutions could not provide (according to their self-assessment). Analysis of the offer of advisory services, on the one hand, and the needs of business entities that are facing the challenge of such a crisis for the first time on the other, reveals deep gaps. These gaps are not the result of the crisis, but of policies and strategies for designing advisory and consulting services that do not follow the real needs of target users.

2. The impact of the crisis on small and medium-sized enterprises

The small and medium-sized enterprise sector is an important part of national economies around the world. In Croatia, small and medium-sized enterprises also have a significant share in the total number of enterprises (99.7%), total revenues (60.3%), employment (74%) and exports (53%) (Alpeza et al., 2020). Given the importance of the small and medium-sized enterprise sector, it is important to examine the challenges that their owners face in times of crisis, how they respond to changes in the environment resulting from the crisis, and the support they need. Authors who have researched the effects of crisis on the small and medium-sized enterprise sector agree that small and medium-sized enterprises are the first and biggest victims in periods of crisis (Robbins & Pearce, 1993; Latham, 2009). The reason for this should be sought in limitations in available financial resources (Ozar et al., 2008), technological, managerial and human resources, and dependence on a smaller number of customers, suppliers and markets (Nugent & Yhee, 2002), which reduces their capacity to cope with consequences of the crisis

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[8] Republic of Croatia, HAMAG BICRO (2018). Analiza postojećeg sustava poduzetničkih potpornih institucija (PPI), Usluga pružanja podrške pilot-projektu razvoj mreže poduzetničkih potpornih institucija (research available upon request)

(Butler & Sullivan, 2005; Marino et al., 2008). Some authors, on the other hand, point to greater effectiveness and faster response of small and medium-sized enterprises to the crisis as a result of greater flexibility, less inertia, faster detection of new niches, speed in imitating good practice of larger companies (Nugent & Yhee, 2002), and lower credit indebtedness (ter Wengel & Rodriguez, 2006). Due to these characteristics, it is considered that small and medium-sized enterprises are key to ensuring the sustainability, stabilisation and recovery of the economy as a whole (Bourletidis & Triantafyllopoulos, 2014).

Adaptation of the business model to the reduced volume of business activities is a prerequisite for the survival of small and medium-sized enterprises in crisis, which includes cost rationalisation and often the dismissal of some employees in order to keep the remaining employees and continue operations in new market conditions (Van Den Voorde et al., 2012). In as many as 13 EU member states, in the first few months after the outbreak of the pandemic, governments adopted a direct grant measure, i.e. a one-time financial injection in the amount of several thousand euros, depending on the number of employees, which allows entrepreneurs autonomy in allocating financial support to what they consider best for business sustainability. In the adopted measures, the Croatian Government has focused on those that make it easier for entrepreneurs to retain employees and prevent layoffs. The absence of measures that would provide support specifically to entrepreneurs, and the lack of government response in the form of reducing costs and increasing the efficiency of the public sector, already in the first month of the crisis brought dissatisfied entrepreneurs together around the Glas poduzetnika Association[9] (Voice of Entrepreneurs), which had gathered more than 200,000 supporters and 16,000 members by the end of 2020. Measures aimed at preventing negative consequences of complete closure have been adopted at the EU27 level, but these, based on the comments and suggestions of the Glas poduzetnika Association (Voice of Entrepreneurs), are not in line with the needs of entrepreneurs.

Among the companies affected by the crisis, depending on the degree of coverage of their activity with epidemiological measures, there are those that are fully affected and forced to close their business activity, they are trying to survive and maintain liquidity; and those that are moderately affected, whose activity is only partially limited or marginalised as a consequence of epidemiological measures and changes in consumer habits, as a consequence of the crisis. With the latter, there is significant manoeuvring space for owners to innovate their business model by making quality strategic decisions and adapt it to the new business conditions. In finding the answer to the question which strategic decisions to make, only part of entrepreneurs will seek the help of a business consultant.

Namely, research indicates a weak tendency of entrepreneurs in Croatia to use the services of professional advisors, especially in the segment of micro and small-sized enterprises. According to *Study of consulting services for small and medium-sized enterprises*, consulting services for small and medium-sized enterprises in Croatia are offered by more than 2,700 private consulting firms, of which 59% are based in Zagreb, and are domestically owned (89%). Areas of providing consulting services and areas to which the SME consultants are the most oriented are primarily associated to writing plans and projects for application to tenders for various incentives, loans, EU funds, etc., and with business planning, including preparation of investment projects, market research, marketing plans, searching for business partners and investors.

Owners of growing, mostly medium-sized enterprises that have gone through various stages and forms of growth and transformation, have built relationships with advisors and recognise their important role in key stages of development (Delić & Alpeza, 2017).

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[9] Glas poduzetnika Association (Voice of Entrepreneurs), https://www.glaspoduzetnika.hr/transparentno-clanstvo-a341, accessed February 19, 2021

An overview of business support infrastructure in Croatia, the aim of which is to provide support in the development of entrepreneurial activity is given below.

3. Business support infrastructure in Croatia

The commercial and professional infrastructure for the development of SMEs in Croatia is providing support to SMEs by two types of organisations: business support institutions and professional private consulting companies.

In the GEM – Global Entrepreneurship Monitor survey, commercial and professional infrastructure, according to the perception on the number, quality and availability of consulting services for the development of entrepreneurial activity in Croatia, was rated with an average grade[10] (Table 1).

Table 1: Perception on the quality of commercial and professional infrastructure for the support of development of the small and medium-sized enterprise sector in 2018 and 2019

	Rating 9 shows:	2018		2019	
		EU average	Croatia	EU average	Croatia
Commercial and professional infrastructure	There are consulting, professional, legal and accounting services; companies can afford them, and they are of high quality	5.19	3.76	5.25	4

Source: Singer et al. What makes Croatia a (non) entrepreneurial country? GEM Croatia 2019-2020, CEPOR (in print)

Croatia has a very well-developed network of business support institutions consisting of entrepreneurial zones, development agencies, technology parks, business incubators, entrepreneurship centres and competence centres, which are mostly established and owned by units of local or regional self-government. According to the Entrepreneurial Infrastructure Improvement Act[11] business support institutions are "…*entities aimed at creating a quality, user-oriented entrepreneurial environment in the Republic of Croatia that implement programmes aimed at the development of entrepreneurship*." In 2019, there were 473 institutions – providers of services to the small and medium-sized enterprise sector (until November 2020) registered in the Unified Register of Entrepreneurial Infrastructure (Table 2).

Table 2: Business support institutions registered in the Unified Register of Entrepreneurial Infrastructure

Type of business support institution	Number of institutions registered in the Unified Register of Entrepreneurial Infrastructure
Entrepreneurial zone	273
County development agency	20
Local development agency	51
Development agency for specific activities	6

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[10] On a scale of 1 (worst rating) to 9, commercial and professional infrastructure in Croatia was given rating 4, which is lower than the average of EU countries included in the GEM survey in 2019.

[11] NN 93/2013, NN 114/13, NN 41/14 and NN 57/18

Type of business support institution	Number of institutions registered in the Unified Register of Entrepreneurial Infrastructure
Business incubator	42
Incubator for new technologies	12
Entrepreneurial accelerator	9
Business park	1
Science and technology park	1
Entrepreneurship centre	50
Competence centre	8

Source: Unified Register of Entrepreneurial Infrastructure, http://reg.mingo.hr/pi/public/#, accessed December 1, 2020

The objectives from which the tasks of business support institutions arise are set by the law, on the basis of which they exercise the right to co-finance their services through tenders of the relevant ministry. These objectives include improving the conditions of entrepreneurship infrastructure for attracting investment, strengthening the competitiveness of entrepreneurship, development of technological and knowledge-based entrepreneurship, encouraging innovation, and increasing employment and the number of business entities.

In addition to the institutions registered in the Unified Register of Entrepreneurial Infrastructure, consulting support to entrepreneurs, according to the mission stated on their websites, is also provided by associations of entrepreneurs: Croatian Chamber of Economy – HGK[12], Croatian Chamber of Trades and Crafts – HOK[13], and Croatian Employers' Association – HUP[14].

Entrepreneurs can also obtain expert advice from administrative departments for the economy, which are county bodies. In addition to administrative and legal tasks related to county management, these institutions also perform tasks related to management of trade registers, checking the conditions for opening of crafts, granting approvals for starting handicraft businesses and secondary occupations, issuing licenses for tourist guides, advise on minimum technical requirements for catering services in households and family farms, and other similar services.

Beginner entrepreneurs and craftsmen can also find free legal and economic assistance in **legal, economic and legal-economic clinics**, which operate at faculties of law and faculties of economics in Croatia. These clinics operate as part of the educational process at faculties of law and faculties of economics in Croatia, and their goal is to, in addition to providing advisory assistance, allow students an insight into the problems and obstacles that are commonly encountered by entrepreneurs.

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[12] Croatian Chamber of Economy offers its members a wide range of activities and services that include training and education. Point of Single Contact operates within the HGK, established pursuant to the Services Act (NN 80/11), which provides business information on administrative conditions for performing individual activities. In addition to information, HGK offers entrepreneurs education, counselling related to professional issues, and assistance in the internationalisation of business. Source: www.hgk.hr, accessed December 8, 2020

[13] Croatian Chamber of Trades and Crafts performs a wide range of activities that include providing professional and advisory assistance to craftsmen. HOK's services are divided into training for taking master craftsman exams, counselling on business operations in crafts, connecting craftsmen through the organisation of trade fairs, and dispute resolution services (Court of honour). Source: www.hok.hr, accessed December 8, 2020

[14] Croatian Employers' Association, in addition to lobbying activities, offers a wide range of activities to its members, including the provision of free legal aid in the field of labour relations, informing members about funding through EU projects, organising trainings, connecting members, and providing out-of-court dispute resolution services without administrative costs. Source: www.hup.hr, accessed December 9, 2020

4. Research methodology

The aim of the paper is to point out the challenges of adapting business operations to new conditions as a consequence of the crisis faced by small and medium-sized enterprises in order to survive and sustain business operations, and analyse the availability of advisory support to entrepreneurs when making strategic decisions in a crisis. The paper contains a presentation of business support infrastructure in Croatia as an important source of information and advice for entrepreneurs, especially owners of micro and small-sized enterprises.

The paper analyses the reactions of private consulting and business support institutions in Croatia to the changed circumstances in the environment, and their speed in adapting services and products to clients from the small and medium-sized enterprise sector. The analysis was made on the basis of information gathered from secondary sources – examination of websites and institutional profiles on social networks of business support institutions in Croatia, which had registered websites, which was conducted one month after the adoption of rigorous epidemiological measures, between April 18 – 20, 2020. The second source of information is primary, in the form of semi-structured interviews conducted with four representatives of business support institutions in Croatia (PPI 1, 2, 3 and 4) and four representatives of private consulting firms (K 1, 2, 3 and 4). Interviews were conducted by telephone or online lasting 30 to 40 minutes.

The paper uses the narrative interview method, in which researchers are listeners who collect not only data but also the attitudes and thoughts of the respondents. In narrative approach the researcher's responsibility is to be a good listener and the interviewee is a storyteller, rather than a respondent (Hollway & Jefferson, 2008). The narrative approach assumes changes to and development of the questionnaire itself. In this type of interview, the emphasis is on the meaning and context that are created during the interview itself (not in the preparation of the interview), and are related to specific events and situations (Hollway & Jefferson, 2008).

By selecting the above secondary and primary research methods, the aim was, in addition to the available advisory and consulting assistance, also to check the responsiveness of business support institutions to the needs of the target group (small and medium-sized enterprise sector), and to compare the collected data with private consulting initiatives.

Since we chose the method of narrative interview, the respondents had to answer only three questions. The first question aimed to better understand how the crisis and lockdown changed the usual way of working in business support institutions and consultancies and what was the biggest challenge for them. The second question was aimed at new services for their users, i.e. SME owners. The aim was to find out to what extent the institutions and consultancies are keeping up with the needs of SME owners and to what extent, based on their capacities, they can respond to their needs. The last, third question was related to the advisory services offered to SME owners, are they involved in online activities (such as B2B meetings where SME owners can share their experiences and help each other). Finally, we wanted to find out if there is a need for this type of service - do SME owners ask for advice or a consultancy service that could help them overcome new difficulties and obstacles. During the analysis, the transcripts of the conducted interviews will be compared and analysed in order to reach a conclusion, but also to find directions for further research in the field of counselling services during the crisis.

5. Consulting services for entrepreneurs during the COVID-19 virus pandemic

After the outbreak of the pandemic, the Civil Protection Headquarters of the Republic of Croatia adopted measures that entered into force on March 16, 2020, which resulted in complete closure of educational institutions and a large number of business activities. Although the Government

adopted job preservation measures, owners of small and medium-sized enterprises in many sectors are losing revenue needed to cover other operating costs, such as rent and overhead costs. The penetration of digitization as a consequence of restrictions on movement introduces significant changes in consumer habits of the population (Obrenovic et al., 2020), which is a disruptive element in many sectors with long-term consequences that require a change in the business model of companies.

In mid-April 2020, availability of advisory support to entrepreneurs in business support institutions was analysed, which would include assistance in making strategic decisions that would ensure business continuity and adapting the business model to changed circumstances. The analysis included business support institutions from all counties, registered in the Unified Register of Entrepreneurial Infrastructure, which also had a registered website.

By analysing the websites of these business support institutions and through interviews with four representatives of business support institutions it was found that business support institutions have adapted in the segment of providing information to entrepreneurs about the possibility of using the so-called COVID measures, from national, to county and local levels. Business support institutions provided information by telephone and had organised teams of advisors who received inquiries and advised entrepreneurs.

Business support institutions focused on adapting activities financed from EU funds to the prescribed epidemiological measures. Al four respondents emphasised that they themselves do not have enough knowledge nor information about the crisis we are going through, and that they are not ready to provide counselling to owners of small and medium-sized enterprises. Respondent PPI1 stressed that: "...*owners of small and medium-sized enterprises in crisis situations do not seek help from business support institutions, but from people they trust – accountants.*" When asked if they have plans for activities that would help their target group overcome the crisis, PPP2 answered that they plan to "*launch a new incubator because they need additional space*", while PPP3 thinks that counselling owners of small and medium-sized enterprises through online platforms is not possible and would not be accepted.

Entrepreneurs were also able to obtain information and advice regarding the use of COVID measures from associations and accounting experts who greatly helped entrepreneurs in preparing the documents required for the use of the adopted measures. Business support institutions, however, did not offer advisory services related to strategic decision-making in a crisis.

Based on the review of websites and interviews with four representatives of business support institutions, the following examples of good practice in adapting activities to the needs of entrepreneurs affected by the crisis caused by the pandemic by various organisations oriented towards entrepreneurs were identified:

o **Technology Park Varaždin** (in collaboration Impact Hub Zagreb, Green Energy Cooperative, Terra Hub, EIT Climate KIC, PORIN and Lean Startup Croatia) organized a hackathon on the topic "VersusVirus or viral action against the virus" (April 17 – 19, 2020), whose objective was to identify the biggest challenges for entrepreneurs and try to find answers to these challenges.

o **Dubrovnik-Neretva County Entrepreneurship Center** organised (April 10, 2020) a webinar on the topic "How to use the crisis for personal growth and business development" and made the recording of the webinar available on their YouTube channel.

o **International Centre for Entrepreneurial Studies (ICES) of the Faculty of Economics in Osijek** organised online conference "Business in the age of corona" on April 23, 2020, which brought together more than 300 participants, at which owners of small and medium-sized enterprises shared their experiences on the subject of adapting the business model to changed circumstances in the environment.

- o **Business weekly magazine LIDER and Adizes Southeast Europe** organised on April 16, 2020 an online workshop for owners of family businesses, gathered in the Lider's Family Business Club, on the subject of exchange of experiences of entrepreneurs on adjustments they have made to their business and plans for survival.
- o **CEPOR**, in collaboration with **Adizes Southeast Europe** and financial support of the **Entrepreneurship Academy of the European Fund for Southeast Europe** organised four online workshops on the topic "Let's think together … support for entrepreneurs in times of crisis", in which a total of more than 70 entrepreneurs participated. The aim was to exchange experiences and thoughts about the consequences of the crisis in the small and medium-sized enterprise sector and the necessary adjustment of the business model in order to ensure business sustainability.
- o **Business Zone and Business Incubator Ivanec** published an open letter from the mayor inviting all owners of small and medium-sized enterprises to propose ideas that would help the sustainability of their business.
- o **Croatian Chamber of Economy, County Chamber, Virovitica-Podravina County and Croatian Chamber of Trades and Crafts of Virovitica-Podravina County** conducted an online survey among entrepreneurs in Virovitica-Podravina County to determine the impact of the COVID-19 virus pandemic on business, and prepare assistance in accordance with the needs of local entrepreneurs.

In addition to the analysis of the offer of support to entrepreneurs by business support institutions, the offer of advisory support provided by private consulting firms was also analysed. Private consulting firms provided support to their clients from the small and medium-sized enterprises segment through webinars and other forms of online consultations related to ensuring liquidity and adaptation of business models. According to the consultants, rapid response to customer needs was aimed at "*...influencing their business before it is too late and the opportunity to make an impact is reduced* (K2)". It is important to note that private consulting firms are essentially micro or small-sized enterprises that are also trying to adapt their business to new conditions and survive. In a time of crisis they are trying to approach their clients, help them with advice and preserve their business, and if possible, charge for their service in order to preserve their own jobs and quality employees, which are difficult to find, train and retain in their industry.

The most common areas of counselling provided to entrepreneurs in crisis, according to the interviewed representatives of consulting firms, are finance and management. "*In times of crisis, it is important to monitor cash flow, as opposed to the profit and loss account, which is what entrepreneurs are usually focused on. In these times it is especially important to understand the difference between inflows and revenues, and outflows, in relation to expenditures* (K1)." Another type of assistance relates to operational restructuring, where consultants try to help entrepreneurs with questions such as: What can we do to increase inflows, and on the other hand, reduce outflows? Adjusted cash flow is the basis for negotiations with banks on loan rescheduling or finding new sources of financing, in which they also provide support to their clients.

According to the third interviewed consultant, support services to clients in crisis are focused on making key decisions that will yield results in the short term, most often in the field of business restructuring, from the operational and financial side, to adapt the business to the changed business environment. This consultant also stated that their offer included drawing clients' attention to inflows and outflows, advice on how to achieve business savings, flexibilization of costs, but also informing about the possibilities of taking advantage of measures by the government and banks with which the entrepreneur cooperates.

The fourth interviewed consultant also believes that in times of crisis entrepreneurs need "*... support for establishing balance between short-term crisis management strategy and adjustment of the business model in order to achieve long-term sustainability* (K4)". To this end, they have developed a new product – an online workshop programme with tools applicable in key areas of crisis management, which they have offered to their clients and the market in general. The described (pro)activity can again be associated with the challenges of survival of private consulting firms in the market that must themselves behave and act entrepreneurially in order to survive in times of crisis, characterised by high levels of uncertainty and complexity in the environment (Gibb, 1998). They did not take care of their loyal clients and their partners' clients through free webinars, but by organising several online workshops at which entrepreneurs exchanged experiences and inspired each other about the decisions that need to be made in times of crisis.

All these specific types of advice and support in crisis situations, which can be used by medium and large enterprises, are equally needed by smaller enterprises, regardless of their size. However, it seems that apart from various financial reliefs that are the backbone of the measures of the Croatian Government, small enterprises in Croatia do not have adequate advisory support (adjusted price-wise and to specifics of operations arising from "small"), which would go a step further than the information on where and how to apply and use government measures. The causes of differences in flexibility and speed in adapting to the needs of clients of private consulting firms and business support institutions should be sought in the sources of funding, and the focus on and understanding the needs of entrepreneurs Private consulting firms are financed primarily through the commercialisation of their services, and business support institutions through local and regional self-government budgets and European Union funds, whose projects, due to prolonged period of implementation and co-financing, limit the availability and capacity to identify the needs of entrepreneurs and offer appropriate products and services.

6. Conclusion and recommendations

Every global crisis, including this one caused by the COVID-19 virus pandemic, has its own specifics, but they all lead to the same result – slowing down global economic flows, financial tensions, closing of businesses and rising unemployment. In order to mitigate the effects of the crisis, businesses have been allowed to use financial aid. However, despite financial assistance, the wave of unemployment is growing steadily, primarily as a result of changes in prescribed epidemiological measures. Owners of small and medium-sized enterprises were not involved in creating aid policies and regulations. Their dissatisfaction is reflected in the protests, as well a public advocacy through the Glas poduzetnika Association (Voice of Entrepreneurs) and other entrepreneurial associations. At the same time, business support infrastructure, consisting of 473 institutions, whose task is to create an environment to encourage entrepreneurial activity, offers only information on measures to mitigate the effects of the crisis. Managing business ventures is the biggest challenge for owners of small and medium-sized enterprises, and in crisis situations this challenge becomes a matter of survival. Advice and assistance in strategic decision-making, as well as preparing companies for operations during the crisis, can help with long-term sustainability of businesses. Business support institutions were not ready to respond to the needs of their target group, nor for the opportunity to better position themselves in the market of consulting services. They justify their inertia in monitoring the needs of their target group by a lack of demand, insufficient capacity, and the fact that accountants enjoy great trust of owners of small and medium-sized enterprises, and accordingly turn to them first in case of need for advice.

Private consulting initiatives, which also belong to the group of small and medium-sized enterprises, readily and strategically monitor the needs of the sector, and offer their expertise in overcoming the problems caused by the crisis. Consultants offer assistance in solving acute problems, making key decisions, and assistance in adjusting and changing business models themselves. Monitoring the needs of their target group, they use their opportunity to change the channels through which they communicate with their clients. By monitoring the needs of their target group and responding readily to them, consultants have used the crisis for adaptation, strategic positioning and changes to their business models.

The small and medium-sized enterprise sector needs advice related to all business segments, primarily internationalisation, digitization and strategic decision-making. Business support institutions, whose number is increasing each year, do not have the capacity to monitor the needs of the small and medium-sized enterprise sector, and do not provide quality and timely advice (which the small and medium-sized enterprise sector needs). Business support institutions necessarily have to change the way they do business, but also network strategically, at the national level, and jointly strengthen their capacities. By monitoring the needs of the small and medium-sized enterprise sector, and publicly advocating for the needs of this sector, business support institutions have the opportunity to strengthen their position in the market of advisory and consulting services.

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BUSINESS OF SMALL AND MEDIUM ENTERPRISES DURING A PANDEMIC AND THEIR CHALLENGES

ABSTRACT

The purpose of this paper is to present a theoretical and practical overview of the business crisis during the corona pandemic in the daily business of small and medium enterprises (SMEs). A business crisis is a condition that can cause irreparable damage to an individual, organization and society. Therefore, it is very important for the company to make good business decisions on time, solve problems and recognize that the company is exposed to a business crisis. If a crisis occurs, the management has a decisive role in solving problems and their readiness to react quickly can save the company from bad business results. Successful managers must recognize the signs and weaknesses in business that precede the business crisis and need to know how to act in such a situation. It is very important to recognize the crisis as early as possible in order to react in time, and it can be said that crisis communication is crucial for successfully overcoming crisis situations in the company and strengthening its reputation thanks to the public attention it is exposed to during the crisis. For every company, the process of overcoming the crisis is a great challenge for management because it requires a complete change in the way of doing business, and in most cases a complete restructuring of the company. The main goal of the paper is to theoretically present the symptoms of the business crisis in the company, how to overcome and continue to operate successfully, and show the impact of the business crisis on the example of small and medium enterprises in the city of Virovitica. The methodology of data collection refers to a survey of small and medium enterprises on the opportunities that have contributed to resolving the consequences of the corona crisis. The results of the research are expected to determine the perception of entrepreneurs about doing business during the crisis caused by Covid-19, how the crisis affected revenues and costs, and what impact support measures had during the corona crisis. By refuting or confirming the research hypotheses, the impact of the business crisis on small and medium-sized enterprises will be critically highlighted and the attitude of companies on measures to help the economic situation due to the corona crisis will be emphasized.

Keywords: *company, business crisis, causes of crisis, crisis communication, corona pandemic.*

1. Introduction

The business crisis is the result of a large number of unresolved situations and the neglect of symptoms and signs that indicate that there are problems in the company. The crisis occurs both in the daily life of the individual and in the lifetime of the company. The biggest role is played by the management of the company, which, based on professional knowledge, must constantly monitor the business and try to anticipate the danger. If a crisis occurs, the company's management must invest all its resources and knowledge in the process of overcoming the crisis. The aim of this paper is to determine the causes of the crisis, how to overcome business difficulties and successfully manage risks, and the importance of management in handling crisis situations. Special emphasis is placed on determining how the crisis caused by Covid-19 affected the day-to-day operations of the company in the area of the city of Virovitica. According to Buterin (2020), the negative economic consequences caused by the Covid-19 virus pandemic at the state level cause aggregation of damage, estimation of expected GDP declines, and expected duration of upcoming economic crises. Estimates of the economic downturn indicate that the Croatian economy will face the threat of an unfavorable and challenging period, and the level of Croatia's institutional development is considered one of the key causes of its unfavorable economic structure leading to consumption-based growth. Institutional development supports small and medium-sized enterprises by facilitating business activities and business decision making while reducing transaction costs and uncertainty. Given that economic growth in the Republic of Croatia was not accompanied by the growth of institutions, the length of the crisis, recession and the slow recovery of the Croatian economy is not unexpected. According to Čučković (2020), small and medium-sized enterprises, as the most vulnerable part of the enterprise sector most affected by the crisis due to their size and modest levels of capital and working capital, are at the same time the most flexible part of the enterprise sector. This allows them to better adapt to the challenges posed in an age of uncertainty caused by the pandemic. Therefore, in the process of dealing with the crisis, the shortest possible decision-making period that is crucial for the continuation of business is necessary. Given that we are at a time when the pandemic caused by the coronavirus has affected the whole world, the paper seeks to determine how much impact it had on the business of small and medium enterprises, and how businesses operating in the Republic of Croatia faced the crisis. The issues of work are focused on the importance of risk and hazard assessment in business, and preparation for a crisis situation. Faced with the seriousness of the crisis situation, the influence of managers and crisis communication stand out. Through the characteristics of the business crisis, its causes, the process of crisis management, identification and the process of learning from the crisis, it seeks to determine the importance of timely preparation for uncertain situations. Based on the conducted research, the perception of entrepreneurs from the area of the city of Virovitica about support measures during the pandemic and what are the consequences in business caused by the corona crisis will be presented.

2. Business risk and threat assessment

Crises are unexpected and occur outside of routine actions in the organization. However, most of the crisis was preceded by some signs or weaknesses in business. Successful managers in their business can anticipate and spot such signs and know how to act in such a situation. Just as every crisis is different, so are the symptoms of the crisis different (Tafra-Vlahović, 2011). Given that the management has the greatest responsibility for the crisis, it is up to them to detect the first signals of the crisis in time (Omanović, 2017). The more pronounced the crisis situation, the clearer its signs are. Also, the clearer the warning signs, the harder it is to return

to normal business (Osmanagić Bedenik, 2010). In business, it is very important to be able to assess and monitor the danger, in which the main role is played by the preparedness of management, which should give an effective response to warning signs that threaten the business. Warning signs do not necessarily mean that a crisis will occur, but it should be borne in mind that warning signs precede most crises. Warning signs are all that is not common in business and show a certain weakness (Tafra-Vlahović, 2011). If the warning signs are detected in time and the management reacts, it is very likely that the crisis will be mitigated or completely avoided. Possible warning signs that can lead to crises are listed in the following table (Table 1).

Table 1: Possible warning signs and potential crises related to them

Warning sign	Possible crisis
Low employee satisfaction index	Low productivity, poor results, strike
Decision to reduce the number of employees without a satisfactory care plan	Strike, low productivity, sabotage
Inadequate quality control system	Product error, product withdrawal, negative media response
Consumer complaint, a dissatisfied consumer who has not been treated with respect and fairness	Negative media response, declining sales, negative publicity transmitted by word of mouth or new media
Not involving key stakeholders in deciding on something that concerns them	Strike, low productivity, poor business results
Non-compliance with environmental regulations, inadequate procedures	High financial penalties, expensive lawsuits; loss of credibility and stakeholder confidence
Lack of performance measurement system	Employee dissatisfaction, erosion of morale, loss of staff, poor results
Lack of crisis plan	Inadequate treatment in a crisis, negative media coverage, damage to reputation, poor business results
Ignoring technical deficiencies in production due to savings or negligence	Outbreak of a great crisis; great damages and costly lawsuits, poor results; damage to reputation and credibility
Rebellion of non-governmental organizations, unfair treatment	Long and expensive lawsuits, negative media coverage, polarization among consumers and stakeholders, damage to reputation

Source: adapted according to Tafra-Vlahović, M. (2011): Upravljanje krizom. Zaprešić: Visoka škola za poslovanje i upravljanje „Baltazar Adam Krčelić" prema Caponigro, 2000, p. 64.

Crises can vary according to the degree of predictability, so unpredictable crises include natural disasters and sudden events such as aircraft crashes or fires, floods, etc. In unpredictable crises, prevention is only limited. On the other hand, in the case of predictable crises, the focus is on prevention, on which the possibility of avoiding the crisis also depends. Although efforts are being made to prevent the causes of the crisis, it is impossible to predict and influence some situations. An example of the unpredictability of crisis situations is the pandemic caused by Covid-19, which has affected the economy of many countries on a global scale, to a greater or lesser extent. According to Rogić Dumančić, Bogdan and Raguž Krištić (2020), the Covid-19 pandemic affected the economy through economic and social consequences, exports, investments, demand and supply shock, labor market consequences, the financial sector, prices, etc .. Economic risks during a pandemic remain large for most economies facing immediate debt problems, low incomes, and worrying increase of poverty. At the same time, global debt is at a record level and with uneven policy normalization, the situation remains uncertain (Rogoff, 2021). Since anticipatory crisis management (preventive action) is the best way to manage the crisis and solve the problem of harmonization of companies and the environment, one of its most important instruments is risk management, flexibility policy and early warning system (Osmanagić Bedenik) (2007). An example of the

unpredictability of crisis situations is the pandemic caused by the coronavirus, which has affected the economy of many countries on a global scale, to a greater or lesser extent. Anticipatory crisis management (preventive action) is the best way to manage the crisis and solve the problem of harmonizing the company and the environment. It is achieved primarily by strengthening the individual and social competence of management and the use of instruments that signal a turnaround and enable the transition to a new direction. The main goal of using these instruments is to increase sensitivity for future possible internal and external changes (Osmanagić Bedenik, 2007, 59). Anticipatory crisis management implies noticing the first symptoms of the crisis, as well as a decisive reaction to the appearance of the first symptoms of the crisis (Omanović, 2017, according to Softić, 2011). Preventive action helps a company to adapt its business to frequent and rapid changes in the environment in order to take anti-crisis measures. According to Osmanagić Bedenik (2007), the most important instruments of anticipatory crisis management are: risk management, corporate solvency, flexibility policy and the early warning system. Before a crisis occurs, preventive action focused on prospective learning is needed. The basis of preventive action are scenarios on possible directions of development in the future, and the focus is not only on avoiding the crisis but also on preparation through the development of a crisis plan that includes all activities for crisis management. If there are no early warning systems, management will be satisfied with their business and will not notice changes until it is too late. Such business leads to a crisis, and subsequent analysis can confirm that the signs of a crisis existed, but the management did not recognize them (Sučević, 2016). The first symptoms of the crisis occur through a fall in market share, and if you do not react in time, there is a decrease in profitability, which ultimately leads to a decrease in economy. If there is a liquidity problem, the company will have a hard time recovering and continue to operate successfully (Omanović, 2017). That is why when making decisions in the company's business, it is important to know what the potential risks are for the company and how to properly and effectively manage the risks. In order for companies to operate successfully, they must pay special attention to risk analysis and management. Inefficient management can bring great damage to business development. Effective risk management is one of the most important instruments of company protection and enables the company to react to changes in a timely manner (Udovičić and Kadlec, 2013). Globalization, increased competition and entrepreneurial activity are incentives for the development of risk management, to which more and more attention has been paid recently. Some studies show that only a third of companies use risk management to optimize their chances or improve their position (Osmanagić Bedenik, 2010). However, a proactive approach and the inclusion of risk management in the strategic goals of the company enables sustainable development and business success. Companies in the Virovitica-Podravina County emphasized the importance of including risk management in the company's operations and believe that only with their involvement do they have a chance to avoid negative consequences in business or avoid them altogether (Kadlec, Bedeković, Ribić, 2017). Effective risk management is an ongoing process by which risks are identified, assessed and processed through consistent and repeated procedures, on the basis of which a report is made and risk activities are monitored. Risk management does not seek to eliminate risks, but to create an environment in which optimal business decisions can be made taking into account the identified risks and the consequences they may cause (Pongrac, 2015). Risk management provides a clearer view of the future and potential outcomes, opens new perspectives for management and assesses management goals and strategies. After conducting a risk assessment, organizations seek to find techniques to reduce the negative consequences of risk. This is due to the activities that link the process of crisis management and risk management, which can be seen in the following figure (Figure 1).

Figure 1: Relationship between crisis management and risk management
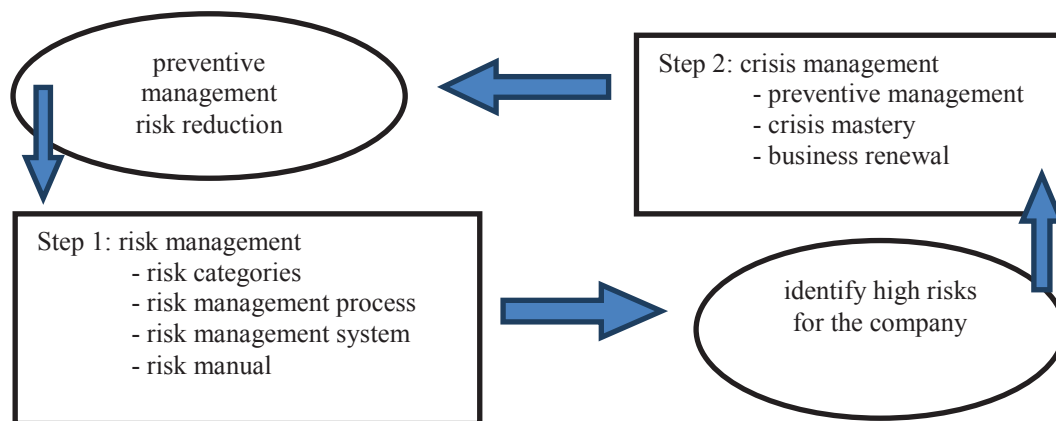
Source: adapted according to Osmanagić Bedenik, N. (2007): Kriza kao šansa. Zagreb: Školska knjiga, prema Tőpfer, 1999, p. 60.

In the process of overcoming the crisis, the early warning system is often used to direct the actions of crisis management and monitor the progress of the process (Sučević, 2016). Given the aforementioned instruments of anticipatory management, it can be concluded that without the use of these instruments, companies would not be able to successfully manage the crisis, nor prepare for the crisis. They arise from the unfavorable development of the environment, which ultimately has a negative impact on business (Osmanagić Bedenik, 2007). Since they arise in the organizational environment, and the organization has no significant impact on them, they include: market changes, changes in the industry, general economic crises, political changes, changes in legislation and natural disasters (Novak, 2001, 37). On the other hand, the internal causes of the crisis arise from the internal environment of the company and such crises are usually not visible but are "hidden" in the organization itself (Legčević and Taučer, 2014).

3. The importance of preparing for crisis situations

Practice has shown that organizations that carry out numerous preparations for the crisis, have a crisis team and crisis coordinator, have established control and evaluation procedures, vulnerability assessments and a series of prevention actions, which regularly train managers and employees and validate their preparedness in simulated crises - in a crisis, they show greater readiness and composure and cope better with it (Tafra-Vlahović, 2011, 113). Crises come suddenly and unexpectedly, but regardless of the factor of surprise, any organization, commercial or public, can prepare for a crisis (Tomić and Milas, 2006). However, even readiness does not completely protect against surprises and even possible mistakes. It is only certain that if managers in the event of a crisis break out adhere to pre-agreed and learned procedures that include concrete measures to stop the crisis and constant communication with stakeholders and the public, the process is easier and the way out of the crisis is faster (Tafra-Vlahović, 2011). Prompt response and rational decision-making are necessary for effective crisis management, therefore planning is of great importance (Mihalinčić, 2018). Planning in advance has several advantages for the organization: it reduces the possibility of a crisis, facilitates communication during and after the crisis, and limits and reduces the damage that the organization suffers during the crisis (Jugo, 2017). As the crisis is a serious and long-lasting disruption of business, the consequences are very great if companies are not ready for the crisis (Glas koncila, 2020).

Successful companies today differ from unsuccessful ones in their ability to detect crisis indicators early and take the necessary measures to control its consequences. Also, successful companies are characterized by a shorter duration of the crisis and less pronounced negative consequences due to the fact that there is a certain degree of crisis preparedness, which implies the existence of developed methodology and instruments of indicators for early recognition of crisis elements (Drljača, 2017). In the event of a crisis, it is necessary to conduct an initial crisis analysis, which differs in methodology from the risk and vulnerability analysis that are part of the crisis planning process, but relies on them because these assessments have documented all possible actions for similar or the same incidents (Tafra-Vlahović, 2011). When a crisis occurs, there is a lot of pressure on managers, if the company is not ready for a crisis, managers can not give the necessary and rapid response necessary for effective crisis management. Although this is often projected onto large enterprises, taking action to successfully overcome and manage crisis in small and medium-sized enterprises can also tailor crisis analysis to its scope, resources and human capacity to implement. Due to their structure, sizes reflect flexibility, easier adjustment and change. The beginning of the crisis is a moment for the company to face the fact that the crisis has occurred. It is also the most vulnerable moment as the crisis brings unrest among employees of small and medium-sized entreprises. When a crisis occurs, great efforts are needed to prove that the situation is under control, and the most important thing is to follow the crisis plan and communicate effectively with the public. The unpredictability of a crisis situation during a pandemic is characterized by a rapid response and the ability to quickly analyze the situation and use appropriate crisis management strategies. Informing the public about the crisis in small and medium-sized enterprises is a very important aspect of action so that the crisis does not deepen. Therefore, the public requires timely information and notification in order not to cast doubt on the correct actions and in order to prevent the negative consequences of the crisis (Mihalinčić, 2018). Situations that threaten the survival of a business arise long before visible symptoms appear. These are most often weak signals that management ignores. If the causes are not identified in time, the crisis process itself is complex because many questions must be answered. The degree of crisis management largely depends on the degree to which it is identified. The later it became known that a crisis had occurred, the deeper the crisis, and the more demanding and difficult the process of overcoming the crisis.

4. The impact of management and communication on the development of crisis situations

Managers, as the primary executives in the company, organize and coordinate the execution of tasks on a daily basis, i.e. they make sure that the tasks are successfully carried out and that the employees are motivated to work. In this way, company managers strive to meet the defined goals of the organization, which include increasing productivity, increasing profits, meeting customer needs and introducing technological changes in the work and production process (Buble, 2006). Managing the work of an organization is an extremely complex process that in a business crisis is a great challenge for managers. Managers must have the experience, knowledge and skills to organize business in a way that the organization successfully emerges from the crisis. The duty of the manager is to make and implement decisions that solve the problems caused by the crisis. The best managers launch a special crisis project which defines the crucial activities and obligations of each stakeholder in charge of achieving the set goals. In crisis situations, one should not fight for the company to survive, but should use the crisis as an opportunity to restructure the company (Sve o poduzetništvu, 2018). Given that in the Republic of Croatia small and medium-sized enterprises make up as much as 99.7% of all enterprises, and their share in total revenue is 59.5% and employ about

80% of all employees, it is very important to observe ways of managing enterprises during the crisis caused by Covid-19 (Pekić, 2021). It is recommended that employees dealing with issues such as logistics, finance, legal and human resources, as well as corporate communications (Tafra-Vlahović, 2011) be involved in crisis management activities in order to manage the company at a satisfactory level. It is necessary to create and maintain an adequate level of trust between members of the crisis team, as well as between employees and crisis management (Brčić, Malbašić, Đukes, 2013). An example of a favorable level of trust and communication is the crisis team in charge of managing and coordinating activities related to the coronavirus pandemic. The mentioned crisis team gathered experts from various fields such as the Croatian Institute of Public Health, the Government of the Republic of Croatia, ministries, the Civil Protection of the Republic of Croatia, etc. and they communicate daily with numerous stakeholders and organizations. On the other hand, the activities of managers in small and medium-sized enterprises are focused on flexibility in the application of certain ways of crisis management in accordance with their capabilities and needs. In this regard, Tomljenović and Dujanić (2009) emphasize the flexible and adaptable competitive potential of small and medium enterprises. When considering the internal causes of entering a business crisis, it was found that in 80% of cases the cause of the crisis in the company is poor management. The mistakes that management makes are: insufficient monitoring of market changes, lack of operational controls, too rapid growth and excessive indebtedness (Sučević, 2016). Managers are often inclined to deny the need for crisis planning and very often underestimate the dangers. It is therefore necessary to establish a solid structure on which to build effective practices managed by managers. Given that crises and problems occur in the lives of man, state, enterprise and economy, there can always be many reasons to enter a crisis, but the solution to problems and to get out of the crisis can only be given by the right people, who are capable, brave and experienced (Kako upravljati poduzećem za vrijeme krize, 2020).

Communication during a crisis is inevitable, and since every crisis is different, communication in a crisis should be handled very carefully. Some crisis situations will require continuous and aggressive communication with all key stakeholders - primarily employees, suppliers, customers and other stakeholders. Other situations will require not communicating with all the public as this could turn a problem that was partly under control into an incident that is difficult to manage. Therefore, the way of communication is a particularly important strategic decision in management (Tafra-Vlahović, 2011). Good crisis communication enables the organization to successfully overcome the crisis and strengthen its reputation thanks to the public attention it is exposed to during the crisis and public relations. Crisis communication is crucial for successfully overcoming crisis situations. One of the key elements in communication during the crisis is the speed of communication (Jugo, 2017). The communication process implies a quick start of communication with the involved stakeholders and the public, which enhances the credibility of the organization. It is very important to react immediately to the public, even when not all information is known, a spokesperson or a person authorized to communicate with the media must respond to media inquiries to avoid an "information gap". In case the media does not get quick information, they will have to inform the public, most often based on rumors. In communication with the media, the communication team has at its disposal regular communication channels: statements, press releases, press conferences, etc. (Tomić and Sapunar, 2006). Company communication during a pandemic has proven to be extremely important between all related organizations inside and outside the company. "Quality communication and good relations between citizens and local government representatives contribute to the development of the community, but also to resistance to external influences and shocks caused by the crisis

caused by Covid (Udruga gradova, 2020), which ultimately affects small and medium-sized enterprises and the economy. The world is facing a global coronavirus pandemic that has significantly affected everyday life, and as it has isolated more than 2 billion people globally, it has consequently also affected media consumption, marketing and communication. More than ever, users are regularly informed through portals, social networks, messenger applications, but also other interactive mobile and web applications (Lukačinec, 2020), which greatly affects the conduct of business activities in small and medium-sized enterprises. A common reason for ineffective communication in a crisis is a lack of clear communication goals. Clear goals are a prerequisite for creating key messages. Instead of passively waiting for the situation to develop, one should be proactive and communicate in one's favor (Bulajić, 2010). It is desirable that in the process of crisis communication there is a fast, accurate and analytically good assessment of the current crisis situation with reference to previous information about the crisis event (Plenković, 2015, 116). The period in which the crisis becomes apparent is most intense in the entire crisis management cycle. This is why communication during a crisis is often associated with the fundamental ability of an organization to respond to serious disturbances in its own functioning caused by crisis situations. There are several indicators that indicate that the basic element in this phase of crisis management is precisely quality communication (Jugo, 2017). In times of crisis and panic, better results will be achieved if stakeholders see that the organization is willing to communicate than to get the impression that they are inaccessible. When a crisis occurs, it is necessary to communicate with enhanced empathy and communication skills in an effort to show concern for people and their well-being (Tafra-Vlahović, 2011). In the post-crisis phase of crisis communication, the emphasis is on reducing the impact of various threats to the organization's image, and the activities the organization should undertake in this phase are based on optimistic discourse that will result in creating a vision of organizational recovery (Jugo, 2017). The organization should learn from the crisis situation and after the end of the crisis, from what has been learned to approach changes in the organization with the aim of improving future business, as well as more effective action in the next crisis situation. In a crisis, companies need to communicate quickly, in detail and in a coordinated manner, so we can say that communication is one of the most important tools for a manager in a crisis.

5. Business crisis management on the example of small and medium-sized enterprises

The crisis management process can be divided into crisis management in a narrower sense and crisis management in a broader sense. Crisis management in a broader sense includes prevention in order to take all measures to prevent a crisis, then early knowledge that includes a hint of an impending crisis, followed by crisis management, which means mitigating the consequences and limiting the damage. Then, through attempts to start again, which includes removing the negative consequences of the crisis, there is a learning from the crisis that refers to measures of permanent preventive action in order to reduce the risk of a crisis in the future. Successful crisis management includes: anticipatory crisis management, crisis identification and reactive crisis management (Osmanagić Bedenik, 2007). In order to successfully implement the rules of survival in a crisis require managers to be able to build a business model, focus and simplify their organization, build a climate for innovation, diversify and integrate markets, learn to be a leader to everyone, become a stakeholder expert, redefine risk and uncertainty, balance conflicting priorities to be clear about things for which there is courage to advocate for (Tafra-Vlahović, 2011, 142). In the process of crisis management, it is very important to set a goal that is to be achieved in the process. Based on the defined goal, a strategy is developed in order to manage the crisis as quickly and efficiently as possible. If it is realized in time that a crisis has occurred and if a well-defined plan of what, how, when and

where must be done, it is very likely that the crisis management process will be successfully completed and that the company will achieve the defined goal.

It is certain that economies all over the world, as well as in Croatia, will feel for a longer period of time the consequences caused by the reduction of business activities to a minimum, all in order to protect human health (Lider, 2020). The worrying scale of the pandemic is having a negative impact on businesses. In the first five months of 2020, the number of registered business entities - companies, sole proprietorships and self-employed persons decreased by 43.1%, and the number of deregistered increased by 11.2% compared to the same period in 2019. These data indicate the negative impact of the crisis on the market dynamics of registering new companies and deregistering old ones. Observed by activities, the largest decrease in the number of registered entities occurred in transport and storage, while the largest increase in the number of deregistered entities occurred in the part of professional, scientific and technical activities. Furthermore, the largest number of bankruptcies was recorded in the activities of providing accommodation, and food preparation and serving (Slobodna Dalmacija, 2020). The current crisis caused by the coronavirus is leading entrepreneurs to new creative solutions to help their business survive the challenging times ahead. There is no entrepreneur who has not been "touched" by the coronavirus, in terms of earnings or unforeseen costs, but in any case it has disrupted business operations. The consequences of the pandemic and national crisis-related policies may lead to the risk of increasing economic disparities within the EU, which causes little prospect for economic and business growth. Economic disparities can result from increased fiscal disparities, distortions of market competition through the introduction of state support measures, high and permanent unemployment, and low levels of investment. Following this, the EU Recovery Instrument was adopted, which brings new risks, challenges and opportunities for economic policy coordination at the EU level and good financial management of EU funds. This includes financial adequacy risks, implementation risks, monitoring risks, liability risks, financial risk management challenges and opportunities to improve economic coordination at EU level (Europski revizorski sud, 2020). The crisis caused by the coronavirus is significantly affecting changes in society, trade and economy, which is why many countries are turning to a system in which the role of the state is more dominant, which is increasingly supporting the economy, companies facing difficulties, the unemployed, workers, etc. But also among the activities that help companies overcome the crisis are the activities of online business and digitalization as a kind of catalyst to accelerate change and facilitate the implementation of various activities. As far as trade is concerned, new supply chains for a particular country are being considered. This presents an opportunity for the development of a society that strives for greater strengthening of the sense of community, one's own national identity and greater social solidarity (Raiffeisen mirovinski fondovi, 2020). Small and medium-sized enterprises often do not have large financial reserves and have a poor financial structure and creditworthiness, and their business is generally less diversified and the crisis caused by Covid-19 affects them faster. As small and medium-sized enterprises do not have an elaborate organization and management roles are contained in one room, it is important to monitor all upcoming changes and change decisions on a daily basis, lead clear and direct communication with all employees and strengthen the principle of resilience (Pekić, 2021). Rapid financial assistance from the state should help them but they do not despair or wait for state aid but change their business model (Fuchs, 2020). According to the European Parliament (2021), one way is to reduce red tape, which requires significantly more resources for small and medium-sized enterprises, and to focus on innovation and market access. The corona crisis has strongly affected the business of travel agencies. According to the latest research, all travel agencies in Croatia record a decline of almost 90% compared to the same period in 2019 (Zadarski list, 2020). The travel

agencies affected by the crisis asked for help from the Government of the Republic of Croatia, believing that the measures adopted to help the economy would help them maintain their business. Measures to preserve jobs as well as delay the payment of other public dues are crucial for maintaining liquidity and the viability of agencies (Turistički news portal, 2020). As the pandemic continues, the business of these companies and organizations remains uncertain.

The entire process of overcoming the crisis thus represents a great challenge for crisis management, which requires a complete change in the way of doing business, and a complete restructuring of the organization. The main goal is to overcome the crisis and continue to operate successfully. The phases of the crisis exit model relate to recognizing the existence of the problem, defining management, taking control, evaluation, the emergency phase, the stabilization phase and the return to growth (Sučević, 2016). Learning from the crisis concentrates on the information level, since learning always involves the collection and processing of information and on the other hand learning leads to taking certain measures, activities, so the organizational level is another area of learning. The goal of the action is to successfully restore business, identify the crisis and eliminate its causes, and the ability and desire to manage the crisis (Osmanagić Bedenik, 2007). In addition to the above, it can be said that the crisis is an opportunity to improve the situation and learn something new and protect against future crises. When a company emerges from a crisis, it is necessary to change the way of doing business that has brought the company into a crisis situation. And all the mistakes observed during the crisis need to be investigated and ensure that they do not recur. A crisis can serve a company to start from scratch and base its further business on the learned mistakes and experience. The outbreak of the pandemic highlighted the importance of resilience and preparedness of companies to this type of crisis. In this case, companies cannot predict developments and their consequences, but can consider possible contingency scenarios. It is also necessary to prepare for the new phases of the current pandemic, as well as for possible new crisis situations that the future brings.

6. The impact of the business crisis on the business of small and medium enterprises in the city of Virovitica

Considering that one of the goals of the research is to determine the perception of the use of institutional measures by entrepreneurs from the area of Virovitica, it is important to point out that during the pandemic caused by Covid-19 Virovitica-Podravina County provided significant support to sole-proprietors, entrepreneurs and businessmen which ranks them among the three best ranked counties in terms of support measures for sole-proprietors per capita in the county (Virovitičko-podravska županija, 2021). How the provided measures of institutional character enabled the daily business and survival of companies from the area of the city of Virovitca during the pandemic and what were the necessary measures that companies had to take will be determined by the interpretation of the obtained research results.

6.1. Research methodology

Given that small and medium-sized enterprises are the most affected sector of the economy, the paper sought to see the impact of the crisis caused by the pandemic and what opportunities were created before them to successfully manage this crisis situation. In doing so, a fundamental research question was asked regarding the challenges faced by small and medium-sized enterprises during the pandemic caused by the Covid-19, and with which

options they continued their business. In addition to the challenges, an attempt was made to determine which areas of activity the surveyed small and medium-sized enterprises come from and whether there are differences in the operation of small and medium-sized enterprises and the intensity of the Covid-19 crisis's impact on them. The aim of this research was to determine the perception of entrepreneurs from the area of the city of Virovitica about how the crisis caused by Covid-19 affected their daily business and therefore the following hypotheses of the surveyed entrepreneurs were defined:

H1: Entrepreneurs point out the decline in company revenue during a pandemic, which affects the company's reduced business performance,

H2: Entrepreneurs from the area of Virovitica in the crisis situation caused by Covid-19 use support measures from the institutional level.

For the purposes of this paper, an online survey of entrepreneurs operating in the area of the city of Virovitica was conducted in the period from June 18 to July 9, 2020. The collection of primary data sources through a survey on a randomly selected sample enabled the processing of the views of the target group on a defined research question. The survey covered a total of 44 entrepreneurs who are sole proprietors or owners of companies in the city of Virovitica. Considering that in 2018 there were 418 active entrepreneurs in the area of the city of Virovitica, the initial sample was about 40 entrepreneurs, which represented 10% of the total population and the representativeness of the sample.

6.2. Results and discussion

Given that small and medium enterprises in the area of Virovitica are the target group of this research, the survey started with a question about the form of company registration. Of the total number of respondents, 61.4% of sole proprietors and 38.6% of companies were surveyed. Njegovec (2020) points out that in March and the first half of April 2020, 1,800 companies were established in the Republic of Croatia, which assumes a large decline compared to 2018 and 2019, when an average of 5,400 companies were established. This implies a huge decline in entrepreneurial initiatives in that period. Analyzing the data from this research, it can be seen that the observed companies and sole proprietorships are under the influence of the corona crisis that affected the reduction of open companies and the liquidation of existing companies in 2020 compared to 2018 and 2019. The change in the direction of the curve of open and closed companies also shows a negative trend. Which means that there was a higher number of open companies than closed ones in the same period in 2018 and 2019, while in 2020 there was a higher number of closed companies than open companies. Regarding small and medium-sized enterprises surveyed in the area of the city of Virovitica and their form of registration, it is important to point out which are the areas of activity they perform, and this can be seen in the following chart (Chart 1).

Chart 1: Areas of activity performed by the surveyed companies

Overview of activities of surveyed companies in the city of Virovitica

Activity	Value
Photo-video activity	2.30
Electrical installations	4.60
Architectural services	2.30
Flower-arrangement services	2.30
Rental/leasing	2.30
Other service activities (hairdressers, podiatrists, beauticians)	20.50
Catering activity	13.60
Transport and storage	0.00
Construction activities	13.60
ICT sector	4.50
Retail and wholesale	13.60
Production and processing activity	18.20
Agriculture, forestry and fishing	0.00

Source: Authors

The chart (Chart 1) shows that the survey was completed by companies that perform various activities, and most of them are companies that perform service activities such as hairdressers, podiatrists, beauticians and the like (20.5%) whose nature of work is such that they had direct contact with people and were therefore banned from working for a certain period of time. This is followed by companies engaged in production and processing (18.2%), and in third place with the same percentage of 13.6% construction, wholesale and retail trade and catering. Similar data were pointed out by Njegovec (2020), where he determined by research that the most affected activities since 19 March to 12 April food and beverage service activities, wholesale and retail trade, other service activities (hairdressers, podiatrists, car waches, dry cleaners and beauty salons), land transport and transport via pipelines and activities of travel agencies, tour operators and other reservation services. It can be concluded that these are the activities that require the contact of people, and as a limitation, digitalization can be pointed out, which is not helpful in these activities. While in some industries it opens up an opportunity to accelerate change in crisis management and facilitate the implementation of various activities. In this regard, it is important to point out that Chart 2 shows the organization of work in a company at the time of the prescribed measures during the pandemic. As for the measures adopted from the institutional level, it is evident that most respondents were banned from working, while other companies organized their business in a way that they worked from home or reduced the number of employees in order to maintain the prescribed social distance and so that they do not have to temporarily close their business.

Chart 2: Organization of work in a company during the pandemic throughout the prescribed measures
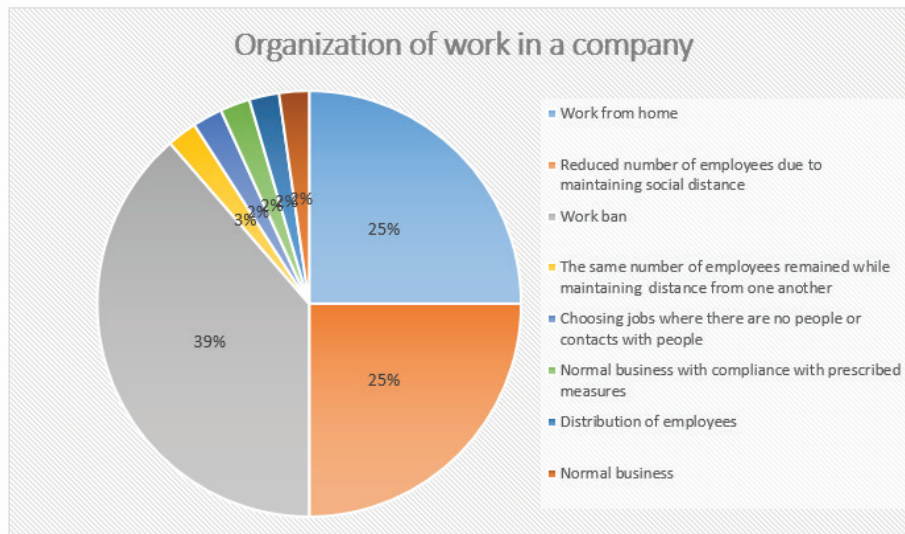
Source: Authors

Online business and digitalization as a catalyst of the implementation of business changes enable growth and development in trade (webshops, marketing, consulting services, etc.) and the ICT sector, which is also one of the affected areas of activity during the pandemic. Given that the respondents expressed a negative trend in business, it is important to point out that a certain percentage of the surveyed entrepreneurs (Chart 1) is also from that sector (retail and wholesale 13.6%, ICT sector 4.5%). Based on the negative indicators, one of the important issues for the surveyed companies was the possibility of using support measures during a pandemic caused by the coronavirus. Of the surveyed companies, it can be pointed out that the largest number of respondents, as many as 86.7%, used a measure to support job preservation. Each employer could use the measure (Chart 3) that helped him the most at that time to preserve his business, which included tax exemptions, tax deferrals, a moratorium on existing liabilities, payment of VAT on the collection of invoices issued, loans, etc .. 14 respondents did not use any measure to help in a crisis situation and skipped this question. Given the perceived, it can be pointed out that the support measures adopted by the state to help entrepreneurs in crisis, proved to be accepted and successful.

Chart 3: Institutional support measures used for small and medium-sized enterprises
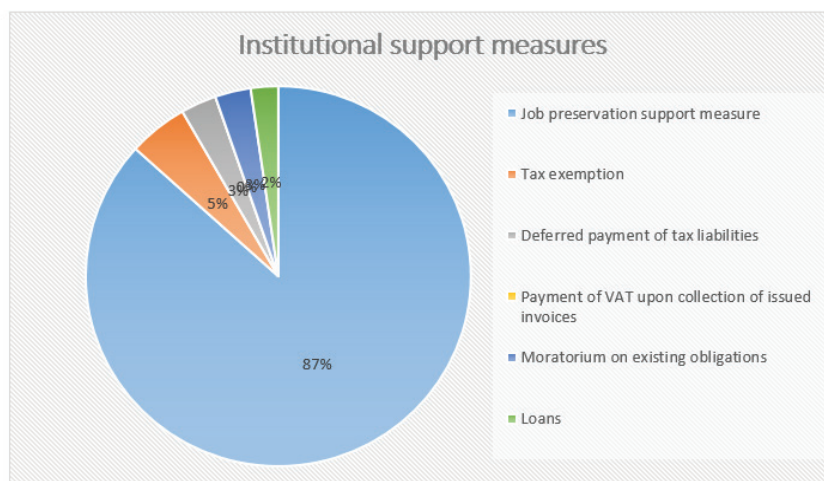
Source: Authors

Analyzing the perception of the surveyed companies from the area of the city of Virovitica about support measures during the corona crisis and its impact on the recovery of companies, it can be pointed out that companies are mostly positive and hopefully expect a speedy recovery. The results of the survey show that 20.5% of respondents completely agreed and 40.9% of them agreed that the Government of the Republic of Croatia had taken all necessary measures to help the economy due to the pandemic. A small number of respondents, however, believe that these measures are not sufficient (11.4% completely disagree with the above and 4.5% do not agree with the above). Given that a large number of respondents were completely banned from working, it would be difficult for them to continue their business without the use of support measures. Given that most respondents have encountered major changes in their business, these measures have certainly helped business owners to adapt to the new situation in the company, so as not to lead to a complete cessation of business. The perception of the surveyed companies about the success of crisis management based on the use of support measures for companies showed that 31.7% of them fully agree that the support measures were used in crisis management, 26.8% of them agree that the support measures were used in crisis management, and only a small number of respondents disagree (4.9%) or completely disagree (9.8%) with the above statement. However, looking at respondents 'perceptions of the possibility of business recovery, the survey results showed that respondents' responses were quite divided (as many as 41.5% of respondents were divided) about the claim that their business would recover in the next few months.

Accordingly, unemployment is one of the items through which the state can support small and medium-sized enterprises, it is important to look at the number of employees in enterprises and determine the perception of entrepreneurs about layoffs (9.1% of surveyed companies use this method) as a necessary method for business survival. Observing the number of employees in companies, the survey found that the largest number of respondents has from 1 to 5 employees, a total of 63.6%, which is more than half of respondents, followed by companies with 20 or more employees with a total of 13.6%, after companies with 5 to 10 employees with a percentage of 11.4%, and companies with 10 to 20 employees with the same percentage. From the above it can be seen that the survey is most completed by small businesses that have from 1 to 5 employees. The results of the survey also showed that the largest number of respondents are companies that have been operating for 10 years or more with a total percentage of 40.9%, followed by companies that have been operating for less than a year and companies that have been operating for 5 to 10 years with the same percentage of 15.9% of respondents and finally with a percentage of 13.6% are companies that operate from 1 to 3 years and companies that operate from 3 to 5 years. Based on the high percentage of companies operating for a longer period of time, it can be said that these are stable companies with many years of business and experience, so it can be assumed that they have more easily coped with the challenges of the crisis than companies that operate shorter. With regard to small and medium-sized enterprise jobs, it is important to point out that experience with job preservation programs during the global financial crisis has shown that their long-term implementation leads to the risk of providing support to companies whose operations are deteriorating, ultimately delaying restructuring and slowing down productivity growth. To support the necessary reallocation of resources in the economy during a pandemic, it may be timely to introduce new types of fiscal measures to finance active labor market policies, such as training and requalification (Europski revizorski sud, 2020). The survey also found that almost half of the respondents during the prescribed measures on the occasion of the corona crisis achieved a decline in company revenue of 50% and more, which is certainly a big blow to the continued operation of small and medium enterprises. Chart 4 also shows positive data showing that a smaller number of respondents (15.9%) did not have a decline in

income during the prescribed measures, which shows that there are activities that were not affected by this form of crisis.

Chart 4: Perception of drop in enterprise revenue according to internal documents of small and medium-sized enterprises
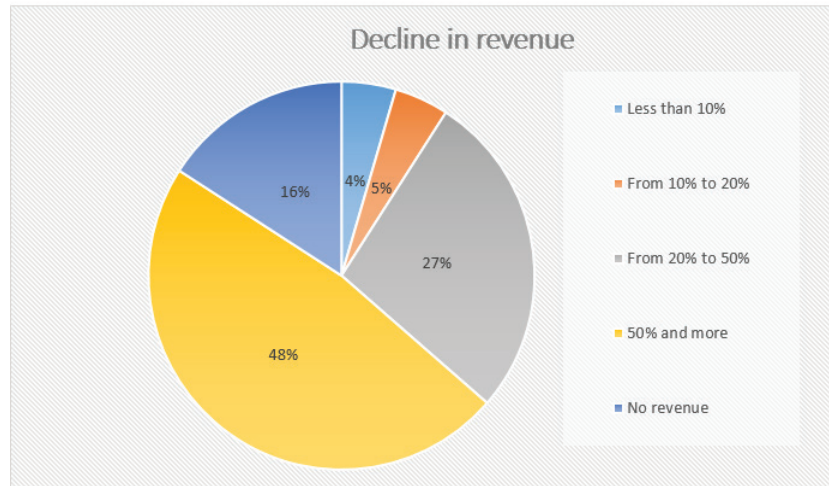
Source: Authors

In addition to falling revenues, companies tried to reduce their costs in various ways during the corona crisis, which can be highlighted by using various methods to maintain the business and survival of the company. The survey also found that most respondents, 36.4% of them had to temporarily suspend their operations, and 22.7% of them had to cancel or reduce promotional activities. Unfortunately, the difficult situation in which employers found themselves led to decisions on salary reductions (11.4%) as well as layoffs (9.1%). Somewhat below represented methods for the survival of the entreprises during the pandemic according to the perception of entrepreneurs reduction of operating costs, reduction of investments, reorganization of operations, etc..

According to the research data collected through descriptive processing, it can be concluded that the first hypothesis was confirmed, which refers to the perception of entrepreneurs about the increased decline in company revenue during the coronavirus crisis, which affects the poor business performance. Given that the success of the company can be analyzed through indicators of economy, profitability, investment and activity, the aim of the paper was to determine the perception of the company and attitudes about the key elements observed in the survey (company revenue, way to reduce operating costs, work organization). Although significant data can be obtained as a criterion for success, which is one of the proposals for future research, the company's business was observed and analyzed through key elements that are crucial for the business of a company in the coronavirus crisis. In that way, the specificity of this crisis situation and the perception in dealing with it are emphasized.

The business crisis caused by the coronavirus caused a decline in business and income of most respondents who are sole proprietors or own a company in the city of Virovitica. As many as 47.7% of respondents answered that their income dropped by 50% and more. A very small number of respondents answered that there was no drop in income and that they operated normally. Also, respondents had to reduce their costs in various ways in order to successfully manage the crisis in the company. Most owners even had to temporarily suspend

their operations (36.4% of them) in order to reduce costs. The decline in revenues in companies causes difficulties in business, so the investments of entrepreneurs in the business activities of the company are reduced, which deepens and intensifies the crisis situation in the company. According to the European Court of Auditors (2020), a high degree of uncertainty is associated with the economic outlook, declining corporate revenue and rising corporate debt during the pandemic, leading to a decline in private investment. Forecasts by the European Court of Auditors show that the decline in investment in 2020 is comparable to that recorded during the financial crisis (2008-2013), but also that there are large differences in the decline in investment (especially gross investment in fiscal capital in the private sector), which may lead to a more pronounced risk of increasing economic disparities in the EU. There is a risk that a long-term lack of investment will contribute to long-term low growth. These risks could be further increased by a lack of public investment, which has so far not been a priority in national fiscal responses to the crisis. Investment decisions made in response to the Covid-19 crisis accounted for less than 0.5% of EU GDP. Public investment could contribute to the recovery of economies in the post-pandemic period. On 23 April 2020, the European Council welcomed the Joint Recovery Plan, which recommended unprecedented investments for the relaunch and transformation of European economies. Although small and medium-sized enterprises possess a modest level of capital and working capital during a pandemic, they seek to reduce costs in order to survive in the market. Institutional development can help them in this by providing support from the state and other institutions. The research sought to determine whether entrepreneurs from the area of the city of Virovitica use measures from the institutional level and what opportunities provide them with support. The perception of the surveyed companies about the success of crisis management based on the use of support measures for companies showed that 31.7% of them fully agree that the support measures were useful in crisis management, 26.8% of them agree that the support measures were useful in crisis management, and only a small number of respondents disagree (4.9%) or completely disagree (9.8%) with the above statement. This confirms the second hypothesis, which refers to the fact that most entrepreneurs from the area of Virovitica in a crisis situation caused by coronavirus used some of the support measures, which if not fully enabled their recovery at least partially eased the whole situation. Based on the conducted research, it can be said that a large number of respondents used the measure of job preservation support (86.7% of them) and that in this way they successfully managed the crisis situation in the company. In this situation, companies should realistically look at their business and accept the crisis and face it, if a crisis has occurred. As this crisis caused by the pandemic has touched every corner on the global level and thus affects the world economy, it is impossible to predict how long the crisis will last or what consequences it will have on business, because the state does not have an infinite amount of co-financing. However, looking at respondents' perceptions of business recovery, the survey results showed that respondents' responses were quite divided (as many as 41.5% of respondents were of divided opinion) about the claim that their business would recover in the next few months, which impairs the perception of entrepreneurs in recovery and business success. Successful crisis management in the company reduces operating costs, and by using support measures during the crisis caused by Covid-19, entrepreneurs from the area of Virovitica successfully manage the crisis situation in the company.

7. Conclusion

Business crises are everyday occurence and happen in almost every company. The management of the company must be prepared for the possibility of crisis situations in order to be able to react quickly and reduce the consequences of the crisis as much as possible.

Great importance is also placed on preventive action so that the management is ready for a crisis before it even occurs. The contribution of the paper is evident in the review of theoretical and empirical data on the impact of the crisis situation of small and medium-sized enterprises during the pandemic, with an emphasis on entrepreneurs in the city of Virovitica. Given that the pandemic caused by Covid-19 globally affected the economy according to a theoretical review small and medium-sized enterprises were the most affected part of the economy. Countries' economic disparities may result from increased fiscal disparities, distortions of competition through the introduction of state support measures, high and permanent unemployment and low levels of investment, which contributes to the state of uncertainty and the deepening crisis for businesses. The Covid-19 pandemic is consequently affecting changes in society, trade and the economy. Small and medium-sized enterprises in these conditions, due to their characteristics, reflect flexibility, easier adaptation and change. In order to provide support to enterprises from the institutional level of the country, they are increasingly accepting systems in which the state provides various measures of support to the economy, enterprises, the unemployed, employees and other individuals and organizations. In addition to institutional support for small and medium-sized enterprises, new opportunities for growth and development are opening up. This is due to the digitalization of the system and the online way of doing business, depending on the activity that is the main one in a particular company. Digitization of activities as a catalyst enables the acceleration of changes and facilitates the implementation of business in companies, especially in activities that are not necessarily related to contact with people. Due to low levels of financial reserves and poor creditworthiness, small and medium-sized enterprises find it more difficult to withstand adversity. The findings of the theoretical review amount to a decline in entrepreneurial initiatives at the state level as well as a decline in private investment by entrepreneurs in their business. Reduced investment is a reflection of the drop in revenues during the pandemic and fears of an uncertain future situation. The perception of companies from the area of the city of Virovitica especially points out that the pandemic caused a drop in revenues and cost reductions in various areas. The survey found that the most affected are service activities, manufacturing and processing activities, construction, retail, wholesale and catering, which is a reflection of the situation during the pandemic throughout the country according to available papers and research. Since contact is one of the main obstacles to the normal conduct of business, companies under the influence of the civil protection headquarters and the state organized the work of their employees in different ways, which further hindered the company's business. A positive shift in the observed companies was found in relation to the measures used by the state and other institutions that tried to alleviate the already difficult business situation. The most commonly used methods were work bans, reduced staffing and work from home. Of the measures that provided support to companies, the most frequently used measure is the measure for preserving jobs. Although the measures helped in a certain period, entrepreneurs pointed out negative thoughts about the recovery of the company because the consequences of the crisis left a deep mark in the business. Regarding the limitations of the observed topic, a sample of research related to only one city could be highlighted, and the paper does not give a complete picture of small and medium-sized enterprises in the wider area. Furthermore, as a limitation but also a proposal for future research, the parallel implementation of the analysis of the company's performance criteria in the observed period according to business data can be singled out. Based on the analyzed indicators of economy, profitability, investment and activity, it would contribute to the completeness of the review of the company's performance during the crisis and would enable a quantitative and qualitative analysis of the company's condition and business success.

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THE ROLE OF LIFELONG LEARNING IN THE DEVELOPMENT OF ENTREPRENEURSHIP IN CROATIA

ABSTRACT

The definition of entrepreneurship and when we think about it, we are mainly focused on the steps needed to start a business and the way we run it, its risks, and whether it brings us profit. The entrepreneur faces various challenges along the way, such as thinking about ways to finance his business, lack of funds, laws that open or limit the possibilities of realizing an idea, market fluctuations, economic crises, making good or bad business decisions. But entrepreneurship is much more than that, much more than the economic aspect and the values it brings to it, especially in the challenging and changing times we are in today.
Every business entrepreneur starts with an idea, it is the fruit of creativity, innovation, imagination, desire, and need to achieve a certain goal and can begin to develop in the consciousness of the individual during preschool or at any time of education. Entrepreneurs are connected by a similar way of doing business and the necessary skills and knowledge, so entrepreneurial learning is an important element and support in the development of entrepreneurs.
Although the Government of the Republic of Croatia adopted the Entrepreneurship Learning Strategy in 2014, there is room for improvement.
The purpose of this paper is to explore and to give an overview of the role and impact of the importance of entrepreneurial learning, as well as an overview of what the Republic of Croatia has done so far in terms of entrepreneurial learning. It will also provide an overview of which segments and how it has implemented entrepreneurial learning in the Republic of Croatia so far, and what additional improvements are needed in the implementation of entrepreneurial learning in various segments and levels of education to further encourage and support more entrepreneurial ideas which ultimately leads to better competitiveness of the Croatian economy.

Keywords: *entrepreneurship, lifelong learning, entrepreneurial competence, entrepreneurship strategy, competitiveness.*

1. Introduction

Lifelong learning is an important part of educational policies in Europe intending to meet the goals and ambitions of the European Union and the candidate countries to be more prosperous, inclusive, tolerant, and democratic. Programs are implemented at all levels, empowering citizens for the challenges of the knowledge-based society and with the possibility, in pursuit

of learning, to move freely between learning settings, jobs, regions, and countries. As stated by the Commission of the European Communities, lifelong learning represents: "all learning activity undertaken throughout life, with the aim of improving knowledge, skills, and competencies within a personal, civic, social and/or employment-related perspective", and it considers that „Basic skills include the foundation skills of reading, writing and mathematics, as well as learning to learn and the new skills set out at Lisbon – IT skills, foreign languages, technological culture, entrepreneurship, social skills" (Commission of the European Communities, 2001, p.9, 22).

Joseph Schumpeter stressed the role of the entrepreneur as an innovator who implements change in an economy by introducing new goods or new methods of production, while in contrast to Schumpeter's view, Izrael Kirzner focused on entrepreneurship as a process of discovery (Sobel, S.R., 2021). Nevertheless, Entrepreneurs have a key role in any economy, take initiative, risk, and solving problems. By using their skills, they bring innovative ideas to the world and taking the steps to make a better environment for themself as well to others.

The importance of Entrepreneurship is also elaborated in the *Recommendation of the European Parliament and of the Council* (2006), *Annex Key Competences for Lifelong Learning – a Europea Reference Framework*, stating that one of eight key competencies is a *Sense of initiative and entrepreneurship*. Recommendations define a sense of initiative and entrepreneurship as an individual's ability to turn ideas into action, including creativity, innovation, and risk-taking, as well as the ability to plan and manage projects to achieve objectives. This makes individuals aware of opportunities, more specific skills and knowledge needed as well as awareness of ethical values and good governance. Furthermore, individual essential knowledge, skills, and attitudes related to this competence are also defined,

The Republic of Croatia also recognized the importance of Lifelong learning by harmonizing laws and strategies with the European one, taking into account the characteristics and needs of its own country. Considering that every participant at any stage of education in life has the potential to become an entrepreneur, the paper will explore data on statistics related to institutions providing education from kindergarten to higher education and the number of pupils attending education. The paper also exploring statistics on institutions for adult education providing programs related to entrepreneurship topics and the number of its representation in the overall number of programs offered for adult education. This paper will also explore accompanying and supporting methods, laws, and strategies, for the implementation of entrepreneurial programs in lifelong learning, from kindergarten to adult education, and at which levels of lifelong learning they have so far been more concretely applied through compulsory or non-compulsory programs.

2. Lifelong Learning

As stated in the *Making a European Area of Lifelong Learning a Reality*, Lifelong learning should take place from pre-school to postretirement and it should encompass the whole spectrum of formal, nonformal, and informal learning together with objectives of learning, including active citizenship, personal fulfillment, and social inclusion, as well as employment-related aspects. The document also emphasizes the importance of the involvement of public expenditures as an investment in lifelong learning, because it finds that formal provision in the school, vocational, adult, higher education sectors, and pre-school sector, as fundamental cornerstones of any lifelong learning strategy (Commission of the European Communities, 2001). Furthermore, the same document recognizes the importance of knowledge-based society and elaborates „The Lisbon European Council in March 2000 set the European Union the strategic goal, reaffirmed at the Stockholm European Council in March 2001, of becoming the most competitive and dynamic knowledge-based society in the world. Key elements of the

strategy to achieve this were the adaptation of education and training to offer tailored learning opportunities to individual citizens at all stages of their lives; the promotion of employability and social inclusion through investment in citizens' knowledge and competencies; the creation of an information society for all; and the fostering of mobility." (Commission of the European Communities, 2001, p. 6).

In the Republic of Croatia, the education and lifelong learning process is also recognized as a vital part of changing society, so in that sense, *The Strategy of education, science, and technologies* was adopted by the Croatian Parliament on October 17, 2014. Even though Croatia is part of the strategic planning of the European Union, it must care about its specific needs, so the respective strategy is in line with the envisaged strategies of the European Union but proposed measures and the goals are specific for its needs and they are expected to be achieved by 2025. As stated by the Croatian Government „the foundation of education is lifelong learning, which encourages individuals from any age group to learn through various forms of learning and with constant access to education. Lifelong learning, science, and innovation form a triangle of knowledge to which the state provides the conditions for effective functioning. One of the main goals of the Strategy is quality education available to all under equal conditions and science that improves the overall world knowledge fund and contributes to the betterment of Croatian society". (Croatian Government, 2021).

As we can see, lifelong learning is a continuous process, starting from early childhood until retirement, and it can be in all forms from formal, non-formal to informal, affecting a person's employability with a strong impact on the entire economy of the society. About these important issues, the *Agency for Vocational Education and Training* has been elaborating in their *10 years of the Lifelong learning week in Croatia* presentation, stating that „Learning is a continuous process in which the results and person's motivation for learning in a certain period of life depend on the knowledge, habits and learning experiences acquired at previous age. The concept of lifelong learning mostly relates to objectives of economic nature, for example, improved competitiveness and long-term employability. On the other side, equally important objectives that contribute to the active role of individuals in society must not be ignored. Those goals are the encouragement of social inclusion, development of active citizenship, and development of individual potentials. The term lifelong learning is often replaced by the term lifelong education, although the two terms are not synonymous. Education only includes organized learning, while learning is a wider concept which includes the unintentional, unorganized and spontaneous acquisition of knowledge that can be carried out for a lifetime." (ASOO, 2017, p. 6).

Also, since 2008, under the organizational leadership of the aforementioned Agency, the Republic of Croatia, has organized the national educational campaign *The Lifelong Learning Week*. For the first time, the initiative was organized in 2002. The goal of this initiative is to inform and motivate citizens on how to become a part of the lifelong learning process and how to participate in any kind of education, through an informal way of learning such as presentations, workshops, seminars, on-the-job training, etc to learning through reading. Also, well-known individuals participate in the campaign, giving examples based on their own experience, emphasizing the importance of lifelong learning. In 2016. the Lifelong Learning Week was organized in all Croatian counties, in bigger cities and smaller towns, comprised 600 events with more than 28 000 participants. Every year numerous activities are organized, from a presentation, concerts, round tables, and exhibitions. Lifelong Learning Week is also a chance for institutions involved to present their work and raise awareness of the constant care of the carriers of the educational system and all its stakeholders. In 2008 nearly 50 different media reported on Lifelong Learning Week and its activities, by 2016 there were 5000 reports in the

media about Lifelong Learning Week and its activities. Until today, Lifelong week has been organized ten times (ASOO, 2017).

3. Lifelong Learning and Entrepreneurship

Lifelong learning and entrepreneurship are closely linked. In a time of strong globalization, rapid changes in society, learning and developing skills, such as entrepreneurship, innovation, communication, and other soft skills for personal development, are prerequisites for an individual to more easily adapt to the needs of the labor market.

The importance of lifelong learning in entrepreneurship has been recognized by the Government of the Republic of Croatia, in 2010, when *The Learning Strategy for Entrepreneurship 2010-2014,* has been adopted. Strategy points out that "The growth of global market integration undoubtedly indicates the need to make people aware of the meaning and importance of entrepreneurship and the need for entrepreneurship education and learning to practice entrepreneurial knowledge, skills and abilities. The most developed countries in the world, as well as the countries of the European Union, have recognized the importance of supporting entrepreneurship, the constant need to create an entrepreneurial climate as well as encouraging entrepreneurial education in the national context" (MINGORP, 2010, p. 4).

Learning in entrepreneurship should start from the earliest age, already in kindergarten, and should continue through all levels of the education system and envisaged in detail, with suggested programs in the curriculum. It should be part of formal education, non-formal education, and informal learning.

Further elaboration on the importance of entrepreneurial competencies and education systems can be found in *The Learning Strategy for Entrepreneurship 2010-2014.,* which states that "The goals of adopting the Learning Strategy for Entrepreneurship, with an emphasis on entrepreneurial Croatia, are multilateral. First of all, the true revival of entrepreneurship implies a systematic approach to the development of several personality traits - creativity, independence, critical thinking, innovation, initiative, ability to take reasonable risks, organizational skills, leadership and management skills, collaborative skills, and other traits. Their systematic development is most effectively achieved through a formal system of education. Entrepreneurial competence is therefore included in all European national curricula as one of the eight core competencies. Vocational education is inconceivable without the acquisition of knowledge, acquisition of skills, and development of abilities, as well as the development of personality qualities necessary for entrepreneurial achievements. The quality of higher education programs also presupposes the introduction of elective and optional programs and modules on entrepreneurship to know, understand and adopt the logic of the economic system, and basic techniques of entrepreneurial thinking. The use of examples of good practice and the exchange of ideas were assessed as effective methods in the education and training of entrepreneurs" (MINGORP, 2010, p. 4)

According to the *Strategic Framework for the promotion of Lifelong learning in the Republic of Croatia*, research shows that in the general population of a country, only 5-8 percent of the population has congenial characteristics of entrepreneurs and that about 16 percent of the population does not have such characteristics at all, what allows space for learning entrepreneurship and to develop, in stimulating entrepreneurial environment, the entrepreneurial potential of the individual. (ASOO, 2017, p. 36)

The development of entrepreneurial competencies is very important because of the future labor market needs. In case the public sector will not have large employment opportunities in the future, the possibility and good opportunity of becoming an entrepreneur is an important life decision for which an individual has to be supported and prepared by the educational system.

That issue has been also elaborated in the aforementioned *Strategic Framework* stating that the *Study on Projections of Future Labor Market Needs* (Institute of Economics in Zagreb), gives useful projections of future market needs for the preparation of the public policies related to the labor market and education. The study considers that some activities in the Croatian economy will grow extremely strong, some will continue to decline, and some will stagnate or grow only slightly, resulting in either demand for labor in certain occupations or a surplus of labor in those that will be phased out. This will produce the need for an adaptive education system, that will provide additional education for those whose knowledge, skills, and competencies are no longer appropriate for the labor market, but also entrepreneurship education for those who would like to start entrepreneurial ventures in growing sectors. (ASOO, 2017)

3.1. Early Childhood Education and Care

In the Republic of Croatia, Early Childhood Education and Care is an integral part of the system of education and child care. It constitutes the initial level of the education system and, except for pre-primary education programs, it is not compulsory for preschool children. It is divided into two educational cycles, based on the age of children: from 6 months to 3 years, from 3 years of age to the start of primary education. Early Childhood Education and Care in Croatia is governed by the *Act on Preschool Education* and well as numerous accompanying legislation. Based on *The Strategy for Education, Science and Technology, National Curriculum for Early and preschool Childhood Care and Education,* adopted in 2015, encourages and strengthens the development of eight basic competencies for lifelong learning, communication in the mother tongue; communication in foreign languages; mathematical competence and basic competences in science; digital competence; learn how to learn; social and civic competence; initiative and entrepreneurship; and cultural awareness and expression. All competencies have been accepted from the European Union document *Recommendation of the European Parliament and of the Council of 18 December for lifelong learning (2006/962/EC).*
From this data below, we can notice that the total number of children covered by any preschool education and care programs was 139 682, out of which 67 395 were girls (48.2%) showing enormous potential for future entrepreneurs to be.

Table 1: Kindergartens and other entities implementing preschool education programs, 2019/2020

Total				
	Republic of Croatia	**Local govern./ self-goverm. units**	**Other domestic legal entities and natural persons (private)**	**Religious communities**
1 699	10	1 250	377	62

Source: Adapted from: https://www.dzs.hr/Hrv_Eng/publication/2020/08-01-08_01_2020.htm (accessed on 05.03.2021)

Table 2: Children by the type of the Preschool Education Program 2019/2020

Founder	Total		In regular programs		In preschool institutions1)		In shorter programs	
	All	**Girls**	**All**	**Girls**	**All**	**Girls**	**All**	**Girls**
Total	139 682	67 395	125 294	60 151	9 861	4 751	4 527	2 493

Source: Adapted from: https://www.dzs.hr/Hrv_Eng/publication/2020/08-01-08_01_2020.htm (accessed on 05.03.2021)

Further, we can see few examples of Entrepreneurial learning in Kindergarteners in the Republic of Croatia who recognized the importance of early age education in entrepreneurship and the necessity to an integrated positive attitude towards developing skills like initiative, self-confidence, and what are the necessary framework to be a part of entrepreneurial environment. Kindergarten *Dandelion* from Pakrac, in 2019., participated in the National projects review in the field of the National Program of Education for Human Rights and Democratic Citizenship of the Government of the Republic of Croatia in institutions for early and preschool education with the project *An Entrepreneur is when you are your boss*. Project goals were to develop entrepreneurial skills in children and to encourage social awareness for the necessity of early age education in entrepreneurship. Children were preparing the donation of herbs from a local family farm visited local craftsmen who set up space where children were able to manipulate and indulged in the roles of entrepreneurs and customers. They also made Slavonian banovci - money that was minted in Pakrac in the Middle Ages etc. The picture book *I am a small entrepreneur!* was also presented. Project outcomes were achieved, children gathered knowledge about entrepreneurship, demonstrated initiative and resourcefulness, enhanced self-confidence as well as project improved cooperation with parents and the local community to the level of partnership, and the quality of the kindergarten curriculum was improved.

In 2016. the selection for the best local EU project funded was kindergarten *Daisy* from Koprivnica with the project for the promotion of entrepreneurial cultures and the development of a positive attitude towards entrepreneurship, as well as the development of entrepreneurial competencies of preschool children and students of crafts. The project included 117 preschool children who had the opportunity to get acquainted with the concepts of entrepreneurship and entrepreneurial culture, kindergarten section *Small Entrepreneur* was established, children parents participated in creative workshops and 10 educators of the Kindergarten *Daisy* participated in training related to entrepreneurship and crafts.

3.2. Primary and Secondary school

Primary and Secondary school in the Republic of Croatia is under the conditions laid down in the *Primary and Secondary School Education Act* which also recognizes the importance of lifelong learning, preparing children for rapid changes in society and their adaptation for labor market challenges. Article 4., of the aforementioned Act, cites among other goals and principles that it ensures improving pupils' intellectual, physical, aesthetical, social, moral, and spiritual development following their abilities and preferences, provide opportunities for pupils to acquire general education and vocational competencies; to prepare pupils for living and working in changing social and cultural conditions dependent on the demands of the market economy, contemporary IT technology, and scientific developments and achievements as well as to prepare pupils for lifelong learning. Primary education in the Republic of Croatia is compulsory, lasts for eight years, and provides pupils with the knowledge and competencies necessary for the continuation of education. It runs regular and special programs. After completing compulsory primary education, students can continue their education in secondary schools, however, this school is not compulsory. Secondary education is provided by secondary schools and student dormitories and other public institutions. It provides the student with the opportunity, under the same conditions for all students according to their abilities, to acquire knowledge and skills required for work and further education. Secondary schools, depending on the type of education program, can be grammar schools, vocational schools, art schools.

Awareness of the rapid changes in society and the need to adapt to a knowledge-based society, innovation, the need for new skills required by the business environment, as well as the fact that thousands of children entering education programs from an early age are potential entrepreneurs, directed the respective Ministry of Science and Education to adopt *The*

Curriculum of the Interdisciplinary subject Entrepreneurship for primary and secondary schools. The Curriculum was adopted in 2019. Afford mentioned Decesion in details describes educational goals of learning and taching as follows „ Educational goals of learning and teaching the interdisciplinary topic Entrepreneurship, for students are: develop organizational and managerial skills (planning, implementation of plans, execution monitoring, time management) and the ability to make decisions, setting goals and priorities, problem-solving, teamwork, leadership; develop communication skills (mutual and group, presentation and negotiation skills); get acquainted with the rules of learning and working in an intercultural environment; be open to new ideas and opportunities, create innovative, competitive and creative solutions; create opportunities, not wait for them; get acquainted with the development of project proposals and project management; understand the economic environment, develop economic and financial literacy, get to know with basic economic concepts (creating new value) and behaving socially responsible; develop perseverance, a positive attitude towards work and work habits; develop the ability self-assessment and critical thinking, defining and problem solving; distinguish and research individual occupations; to acquire basic knowledge from the world work and business for career development purposes; recognize the need and opportunities for lifelong learning learning." (Ministry of Science and Education, 2019,). The curriculum of the interdisciplinary subject Entrepreneurship is realized in three domains: Think Entrepreneurship, Act Entrepreneurial, Economic and Financial Literacy.

In developing entrepreneurial competencies, work-based learning is especially important in vocational education. According to the publication *Work-based learning in Europe* published by the Europen Commission in 2013*,* work-based learning is a key element of vocational education and it is linked to the mission of vocational education to ensure that students acquire knowledge, skills, and competencies crucial to working life. According to afforded mentioned document, there are three models of work-based learning in initial vocational education. One of those three models is integrated into the school-based vocational education program, in which schools create different forms of the simulated work environment (e.g. laboratories, workshops, kitchens, restaurants, training companies, simulations, or real project tasks of real business), with the aim of training in such an environment, establishing contacts and/or cooperation with companies or clients and developing entrepreneurial competencies. In the Republic of Croatia, all three models of work-based learning are included in vocational education and training.

In the *Strategic Framework for the Promotion of Lifelong Learning in the Republic of Croatia* 2017-2021, specific values of vocational education in the Republic of Croatia, according to the proposal of the National Curriculum for Vocational Education, among others are knowledge, skills, and entrepreneurial. Knowledge and skill development is a fundamental value of vocational education that enables the practical application, in different areas, of what has been learned, that upgrades professional competencies needed to adapt to changing labor market conditions. Entrepreneurial, in vocational education, emphasize activating personal and business potentials and recognizing opportunities for action, and taking responsibility in the personal and business environment (ASOO, 2017, p. 26)

In the context of previous elaborated fact about life long learning and the potential of future possibilities involving a significant number of individuals to become an entrepreneur, in the tables below we can observe the number of basic and secondary schools, as well as the number of pupils in 2018/2019. school year.

Table 3: A number of Basic Schools at 2018/2019. in the Republic of Croatia

	School		
	Total	**Self-contained schools**	**Satellite schools and departments**
Basic schools – regular	2 027	876	1 151
Basic schools for disabled children and youth	88	30	58

Source: Adapted from: https://www.dzs.hr/Hrv_Eng/publication/2020/08-01-02_01_2020.htm

Table 4: Pupils in Basic Schools, end of 2018/2019 school year, in the Republic of Croatia

Total			Female pupils			Pupils who completed school	
All	1st – 4th grade	5th – 8th grade	All	1st – 4th grade	5th – 8th grade	All	Female pupils
315 803	159 357	156 446	153 396	77 667	75 729	38 646	18 722

Source: Adapted from: https://www.dzs.hr/Hrv_Eng/publication/2020/08-01-02_01_2020.htm

Table 5: Upper Secondary schools, class units and students, end of 2018/2019 school year, in the Republic of Croatia

	Schools			Students		Graduated students	
	Total	**Self-contained**	**School/class units**	**Total**	**Female students**	**Total**	**Female students**
Upper secondary schools – total	**739**	**237**	**502**	**147 420**	**73 604**	**38 874**	**19 235**
Secondary schools – regular	694	222	472	146 270	73 139	38 501	19 095
Grammar schools	189	93	96	46 451	29 093	11 902	7 428
Technical and related schools	259	64	195	68 755	32 364	17 394	8 289
Secondary art schools	52	43	9	4 513	3 170	970	683
Industrial and crafts schools	194	22	172	26 551	8 512	8 235	2 695
Upper secondary schools for disabled youth	45	15	30	1 150	465	373	140
Education of adults	59	6	53	3 288	1 467	1 302	523

Source: Adapted from: https://www.dzs.hr/Hrv_Eng/publication/2020/08-01-03_01_2020.htm

In further lines, we can see an example of a successful entrepreneurship gymnasium. 1*st Gymnasium*, from Zagreb, Croatia is the oldest general school in Zagreb and the second oldest general grammar school/high school in Croatia. It was founded in 1854, known as one of the best general high schools in Croatia, and today the one who has acquired the certificate of the Entrepreneurial School. In the school year 2013/2014, highschool has implemented the project *School of Entrepreneurial Competitiveness in the Labor Market for High School Students,* co-financed by the European Union, where a group of students successfully passed entrepreneurship education, so today, the subject Entrepreneurship is offered as an optional class subject (can be chosen by second, third, and fourth-grade students).

Higher education

Science and Higher Education Act is the basic national document regulating the systems of scientific activity and higher education in Croatia. According to the Article 2. Scientific activity and higher education are activities of special interest to the Republic of Croatia and are an integral part of the international, especially European, scientific, artistic, and educational space. *Strategy for Education, Science, and Technology* recognizes higher education as is in the position of the main driving force of all social change. Higher education in Croatia is provided

at universities, faculties, academies of arts, polytechnics, colleges, etc. (according to European Qualifications Framework).

Higher education, as the main driving force, is the place with a strong potential of preparing new and innovative entrepreneurs together with lifelong learning from preschool to retirement, designing society for fast and inevitable changes in the economy and labor market, with knowledge as the main making tool for shaping the knowledge-based economy.

In that sense, the *Declaration of the Croatian Academic Community on the importance of research-oriented education and student entrepreneurship,* emphasizes the importance of research-oriented education and student entrepreneurship and that „old paradigms of education are becoming ineffective in the modern world of innovation, for which we need to prepare our young generations from an early age". „A new paradigm of higher education institutions, which is increasingly appearing in Europe and beyond, is the entrepreneurial university, from the very management and organization of the institution, the orientation of the teaching process that awakens the entrepreneurial spirit in students, support for entrepreneurial ideas and ventures, the digital transformation of outdated processes, effective exchange of knowledge and cooperation, internationalization and measurement of effects". (Prof. dr. sc. Grgić, M., 2018).

Based on data in the *Register of the Study programs, the Official Register of Study programs accredited in the Republic of Croatia* there is a total of 1 686 accredited study programs in Croatia. 37 study programs are concerning the subject Entrepreneurship, which is 2,2% of the total amount of accredited study programs in Croatia. Programs are maintained either as an independent study program or as part of a study program consisting of several topics/subjects and one of them is related to the field of entrepreneurship.

One of the examples of entrepreneurial learning is the postgraduate specialist study *Entrepreneurship and EU Funds* held at the *University North* in Koprivnica. The study was prepared following the needs of the labor market and it is a multidisciplinary study that introduces students to the topics related to the real-life situation and preparing them with knowledge and competencies which can be implemented in globalized economic practice.

Another example is the *Student Entrepreneurship Center*, established in 2009 at the Faculty of Economics in Split, which have 40 years of experience working with students in the field of entrepreneurship, both through formal education programs (undergraduate and graduate studies at the university and professional vertical) and through training, networking, information exchange, etc. In the last 5 years, the Faculty has carried out over 60 projects for the needs of the public, private and civil sector, both in the country and abroad; was a co-organizer of 4 projects related to the entrepreneurship of people with special needs. Within the center, Student Entrepreneurship Academy was organized, a lifelong learning program intended for students in the final years of undergraduate and graduate studies at the University of Split, to support the development of their entrepreneurial ideas to the level of a business plan. So far, five generations of student teams have been formed. The development of the Student Entrepreneurship Incubator (SPI) project will enable the development of incubator activities, namely: the inclusion of new mentors, connecting with the economy, increasing the number of participants in the Academy and the number of incubated business ideas, and the development of a virtual entrepreneurial platform.

3.3. Adult education

Adult education is a part of a unified education system of the Republic of Croatian and it is prescribed by the *Adult Education Act* (Official Gazette no. 17/2007, 107/07, 24/10), as well as defined in *The Adult Education Strategy*, which was adopted by the Croatian Government in 2004. The adult education system in Croatia is managed by the Ministry of Science and

Education, Agency for Vocational Education and Training and Adult Education, Council for Adult Education, and Adult education institutions.

Based on data in the directory *Searching institutions and programs of the Agency for Vocational Education and Training and Adult Education* there is a total of 12.396 programs available for adult education divided into twenty different educational sectors. The subject of entrepreneurship is organized under the Economy, trade, and business administration educational sector directory. 32 programs are concerning the subject of entrepreneurship which is 0,26 % of all available programs for adult education. Programs are held in eight counties and 11 cities. Most programs, nineteen of them, are organized in the city of Zagreb.

4. Conclusion

"When planning for a year, plant corn. When planning for a decade, plant trees. When planning for life, train and educate people." Chinese proverb: Guanzi (c. 645BC)(Communication from the Commission, 2001).

The Republic of Croatia, adjusted all its document according to the European one, recognizing its specifics, and made a position how it sees the implementation of these two important issues, lifelong learning and entrepreneurship, which affect all the spheres of the society and represent the strong wheel of the economy.

As stated in the *Strategic framework for the promotion of lifelong learning in the Republic of Croatia 2017 – 2021* the concept of lifelong learning is insufficiently known to the general public, to individuals giving up education, as well as to the world of entrepreneurship. Further, economic growth and development based on knowledge and entrepreneurship can only be ensured by continuous investment in people, which means encouraging all the processes of learning, creativity, and innovation of each individual in various ways.

As a result, we can notice that even though all the strategies and laws presented, having the subject of entrepreneurship in their content recognizing it as an importat part of lifelong learning in all stages, the subject of entrepreneurship is implemented through prescribed curriculum only in high school education as an elective subject. We can conclude that entrepreneurship subject in lifelong learning should be recognized at all levels of education, fully implemented, envisaged with a detailed program from early childhood to adult education, because learning entrepreneurial skills from an early age till retirement can positively affect the economy and the society at all levels, making it better for all.

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DEVELOPING GENERATION Z'S ENTREPRENEURIAL READINESS

ABSTRACT

The purpose of this study is to investigate the entrepreneurial readiness of Generation Z students. In this respect, the study seeks to identify the role of faculties in developing the entrepreneurial readiness of Generation Z students. The paper also explores the entrepreneurial propensity of Generation Z students and assesses their entrepreneurial traits. Research was conducted on a sample comprising 130 students attending higher education institutions of economics in Croatia. For the needs of empirical research, a structured questionnaire was designed. Data were collected in June 2020, using the online survey method. The results of the conducted study indicate that faculties possess great but still untapped potential in fostering the development of entrepreneurship readiness in Generation Z students. Results also show that Generation Z students are sceptical of their ability to capitalise on their entrepreneurial propensity; hence, they are cautious when it comes to concrete entrepreneurial intention and actual start-up initiatives. Furthermore, the students assessed they possess entrepreneurial traits to a large extent, the key traits being independence, tenacity, responsibility and good organisational skills. Additionally, the study found an association between entrepreneurial readiness and personal attitudes towards entrepreneurship. This research contributes to the literature in the field of entrepreneurship and entrepreneurial teaching, by explicitly focusing on both the traits and the needs of a new generation of students, authentic representatives of Generation Z. In terms of practical application, the study's results can serve as a starting point in improving institutional climate, thus facilitating the formation of partnerships and synergy with entrepreneurs in practice.

Keywords: *Entrepreneurial readiness, Generation Z students, Entrepreneurial intentions and attitudes.*

1. Introduction

Market uncertainty, dynamic social changes and rapid technological development have created an environment in which survival is considerably more difficult without entrepreneurial knowledge, skills and competencies. The challenges of modern business operations call for radical changes and adjustments to the way business is transacted and,

today, entrepreneurship is attracting exceptional attention from practitioners and academics alike. In this light, the growing interest for in-depth analysis of entrepreneurship is all the more justified and is increasingly becoming the subject of research in scientific studies. Baumol et al. (2007) underlined the importance of entrepreneurship for the success of today's societies because of its impact on economic and technological development and the creation of new jobs, while Obschonka (2013) singled out entrepreneurial activities and an entrepreneurial mindset as crucial skills of the twenty-first century.

These challenges to (potential) young entrepreneurs also represent challenges to the educational system, whose task it is to provide new applicable knowledge and support in developing entrepreneurial spirit, skills and competencies in the best possible way. What is more, because of its multidisciplinary applicability in practice, entrepreneurship has become an imperative of the educational system (Milohnić, Licul; 2018). In line with this, entrepreneurial readiness has become an exceptionally attractive area of research (Olugbola, 2017; Coduras et al., 2016; Raza et al., 2019), in particular when viewed as a combination of the different traits and skills of the new generation of students (Generation Z) in research focused on their entrepreneurial potential in the environment.

The available literature in the field of entrepreneurship advocates the need of improving entrepreneurial competencies, knowledge and skills in general. Only a small number of studies, however, focus explicitly on the relationship between entrepreneurship and Generation Z students. Generation Z's traits and sensitivity to stimuli from an environment of intensive changes and rapid development justifies the need for additional research concerning the openness of Generation Z to entrepreneurial challenges.

Essentially, this study builds on other studies in the field of entrepreneurship (Lau et al., 2012; Schillo et al., 2016; Olugbola, 2017; Raza et al.; 2019), focusing on the specific traits of Generation Z (Singh, 2014; Ozkan and Solmaz, 2015; Majoli, 2016; Shatto and Erwin, 2016; Bharat and Rajendra, 2018) in light of the development of entrepreneurial readiness. In empirical terms, this study is inspired by the works of Hunjet et al., 2012.; Iqbal et al., 2012, and Zain et al., 2012. Accordingly, the study's research framework is grounded in three research objectives:
- To identify the role of faculties in developing entrepreneurial readiness in Generation Z students
- To determine the level of entrepreneurial propensity of Generation Z students
- To investigate whether, and to what extent, Generation Z students possess entrepreneurial traits.

The paper is organized in the following way. The introduction section is followed by an analysis of basic concepts based on previous studies. The third section explains the research methodology. Research results are interpreted in the fourth section. A synthesis of the entire paper, from the theoretical and application perspectives of applying the established findings, is provided in the discussion section.

2. Theoretical background

As a concept, "entrepreneurship" can be defined in different ways, ranging from narrow definitions referring to the launching of one's own business to broad conceptualisations, such as work attitude that underlines self-reliance, initiative, innovativeness and risk-taking (Van Gelderen et al., 2008). Today there is a general consensus concerning the importance of entrepreneurial education as one of the primary preconditions to reducing unemployment, in

particular when young, highly-educated populations are the focus of research. The studies of Zain et al. (2010) and Iqbal et al. (2012) confirm this and underscore the key role of higher education in encouraging more and more students to become entrepreneurs. Scientific interest in entrepreneurship in studies, however, is primarily focused on identifying traits and behaviours as well as motivations and behavioural patterns involved in making entrepreneurial decisions, and conventional wisdom has it that entrepreneurship is best learned through personal experience and learning models. In addition, in the process of making entrepreneurial decisions, the social support of educational institutions, family and society as a whole has been shown to be crucial (Miljković Krečar, 2010), considering that those students who develop their entrepreneurial self-efficacy are most likely to become entrepreneurs. The starting point of studies is the premise that the fundamental attitudes, knowledge and skills are developed also through education, and hence the need to put in place incentive systems and support structures that will encourage involvement in entrepreneurial ventures (OECD, 2019). The above stated justifies the need to study the entrepreneurial readiness of the student population belonging to Generation Z. The mentioned research concepts are defined in the sections that follow.

2.1. Special traits of Generation Z

Despite the lack of consensus regarding the age ranges of Generation Z, it has been generally accepted that individuals born around the year 2000 belong to this generational cohort (Majoli, 2016; Singh, 2014). Relative to previous generations, Generation Z came of age in completely altered social circumstances, in touch with rapid and accessible information and in an environment of different economic developments.

Ozkan and Solmaz (2015) describe Generation Z as a self-reliant generation, whose members want to secure their future and who recognize the vital role that work has in achieving their dreams. The study found that Generation Z members, if dissatisfied with the job they have, will automatically think of leaving it. The authors single out independence and tendency to challenge authority.

Singh (2014) sees Generation Z members as "digital natives" and approaches Generation Z as the group of individuals born between 1995 and 2012. This generation, born into a world confronting challenges such as terrorism and concern for the environment, is characterised by the widespread use of digital technology. Furthermore, Singh describes Generation Z as technologically proficient, globally and virtually connected, and flexible and tolerant towards different cultures. This is why Singh sees Generation Z as a powerful challenge to the business sector. Majoli (2016) also underscores digitalization as a key feature of Generation Z members, into whose lives social networks and technology are deeply integrated. In addition to digitalization, other key characteristics of Generation Z according to Majoli are liberality, openness to change, and aspirations to achieve work/life balance. In a business context, Generation Z members tend to seek a flexible work environment. Critical thinking and creativity in generating ideas are also characteristics of Generation Z.

Bharat and Rajendra (2018) conducted a study on a sample of Generation Z students and found their basic characteristics to be as follows. They are open to new technologies, independent by nature, have a developed entrepreneurial spirit, possess self-efficacy, are flexible, seek global exposure, and are techno-geeks. The authors also pointed out that Generation Z students are ambitious in achieving their goals and attach great importance to education, so they are relentless in their efforts to attend prestigious universities. As this

generation likes to be independent, the authors add that they tend to work alongside studies which enables them to manage their own expenses.

Shatto and Erwin (2016) also carried out research on a sample of the Generation Z student population. The findings of their study indicate that Generation Z students learn the best through observation and practise rather than through reading and listening to PowerPoint presentations. Furthermore, they often rely on information available via Google Search, although they sometimes lack the ability to critically evaluate the data thus obtained.

Based on the above studies, it can be concluded that Generation Z members are highly pragmatic and analytical and are ready to take action to achieve their personal goals. In this context, it is justified to additionally investigate their entrepreneurial readiness, taking into consideration that the available studies in the field of entrepreneurship suggest that entrepreneurial education plays a vital role in promoting entrepreneurial readiness and entrepreneurial intention among students (Iacobucci and Micozzi, 2012; Packham, Jones, Pickernell and Brychan, 2010).

2.2. Entrepreneurial readiness

Entrepreneurial readiness is a phenomenon that has been the research subject of scientific studies by various authors (Lau et al., 2012; Schillo et al., 2016; Olugbola, 2017; Raza et al.; 2019) who take different approaches in defining the concept. For example, Lau et al. (2012) define entrepreneurial readiness as an individual's cognitive attributes of capability and willingness to direct behaviour in an entrepreneurial context. Coduras, et al. (2016), on the other hand, argue that entrepreneurial readiness is a broad set of sociological, psychological and business (managerial) factors. Schillo et al.'s (2016) definition of entrepreneurial readiness is based on individuals' social capital, opportunity perception, risk aversion and self-efficacy. Raza et al. (2019) adopted this definition in their study, highlighting the link between entrepreneurial readiness and entrepreneurial behaviour. In his study, Olugbola (2017) also provides a comprehensive definition of entrepreneurial readiness, defining it expressly as a combination of several traits and/or skills that distinguish individuals ready to engage in entrepreneurial activity; such individuals observe and analyse their environment in order to channel their highly creative and productive potential, making the most of their risk-taking propensity and their need for self-achievement.

When studying the entrepreneurial readiness of students, Majumdara and Varadarajana (2013) found creativity, motivation and awareness to be factors that significantly contribute to the readiness and propensity of students to become entrepreneurs. The 2016 study of Schillo, Persaud and Jin (2016) developed entrepreneurial readiness through a concept comprising an individual's skills, fear of failure, social connectedness and perceived opportunity. The findings of their study suggest that entrepreneurial readiness further explains the entrepreneurial intention of individuals. The same year, Samsudin et al. (2016) studied entrepreneurial readiness, motivation and attitudes and reported a strong positive association between those factors and entrepreneurship.

In the context of research focused on entrepreneurial intention, the study of Van Gelderen et al. (2008) provided interesting findings, according to which more than 50% of the surveyed students displayed pronounced propensity to start a business, but fully 75% of them would give up on their initiative after taking into consideration actual restrictions in the business world.

Also noteworthy is a study by Pihie and Sani (2009) in which they explored the entrepreneurial mindset of students after completing a course in entrepreneurship. The results of the study imply that completing a course in entrepreneurship helped to develop the students' entrepreneurial spirit. Their findings show that certain activities (doing a specific job, visiting a business premises, interviewing an entrepreneur) significantly stimulate students to think about entrepreneurship and help to develop their entrepreneurial skills. The authors observe that the least effective technique for raising entrepreneurial awareness is learning through the passive, verbal transmission of information, and the most effective technique is the one that involves the active participation of students in learning-by-doing.

The general conclusion drawn based on the reviewed literature in this field is that entrepreneurial readiness has significant importance as a key factor for entrepreneurial initiative. Hence, it is justified to study this area from the perspective of a new generation of students, members of Generation Z.

3. Methodology

To accomplish the research objectives, research was conducted on a sample comprising 130 students, members of Generation Z, attending higher education institutions of economics in the Republic of Croatia.

For the purpose of empirical research, a structured questionnaire was designed along the lines of previous studies (Hunjet et al., 2012.; Iqbal et al., 2012; Zain et al., 2012.) A set of four identification questions was asked. Using the variables of gender, year of study and name of faculty, the first identification question defined the research sample. Two dichotomous questions were posed to establish whether the students wish to become entrepreneurs and whether they come from a family of entrepreneurs. Following the example of Zain et al. (2010), the set of identification questions was also used to investigate the effect of certain motivational factors on driving the entrepreneurial initiative of the respondents. Dichotomous questions were then asked to explore attitudes towards the role of the faculty in developing entrepreneurial readiness. The set of questions examining the students' entrepreneurial propensity was formulated based on the study of Iqbal et al. (2012) and applied a Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree.* This set of questions measured the respondents' personal attitudes towards entrepreneurship, their business start-up initiatives and their entrepreneurial intention. The set of questions also contains an additional construct to explore entrepreneurial motivation. The last set of closed questions, after Hunjet et al. (2012), tested the entrepreneurial traits of students in four categories: independence, leadership abilities, responsibility and organizational abilities.

Modelled after previous studies (Zain et al., 2010; Iqbal et al., 2012; Samsudin et al., 2016; Schillo, Persaud and Jin, 2016; Raza et al., 2019) that established an association between traits and entrepreneurial intention (Zain et al., 2010), between personal attitudes and entrepreneurial readiness (Iqbal et al., 2012), between entrepreneurial readiness, motivation and attitudes towards entrepreneurship (Samsudin et al., 2016), between entrepreneurial readiness and entrepreneurial intention (Schillo, Persuad and Jin, 2016), and between entrepreneurial readiness and entrepreneurial behaviour (Raza et al., 2019), this study additionally examines the association between entrepreneurial readiness (viewed through business start-up initiative, entrepreneurial intention and entrepreneurial motivation) and personal attitudes towards entrepreneurship. To this end, Pearson's correlation coefficient was calculated.

The variables used to investigate entrepreneurial readiness were developed in accordance with the definition of this term, according to which entrepreneurial readiness implies a wide range of sociological, psychological and managerial factors (Coduras et al., 2016), as well as a combination of several characteristics and skills specific to entrepreneurial thinking and action (Olugobola, 2017), together with the perceptions of entrepreneurial opportunities (Schillo, Persaud, & Jin, 2016). In this regard, the variable "*start-up initiative*" implies the concept of perception of opportunities to start entrepreneurial activities (Schillo et al, 2016), while, modeled after Zain et al. (2010), the variable "*entrepreneurial intention*", was perceived as desirability and tendency to act according to entrepreneurial capabilities, which includes ambition, personality traits, as well as entrepreneurial skills. Finally, the variable "*entrepreneurial motivation*" was defined as the sum of different motives in the context of desires, needs and goals related to entrepreneurship (Samsudin et al., 2016). Starting from the assumption that an individual's attitude towards entrepreneurship is determined by factors such as previous experience, education, etc., (Iqbal et al., 2012) the variable "*personal attitudes towards entrepreneurship*" combines four determinants that embody general opinions about entrepreneurship.

Data were collected in June 2020, based on the online survey method using the survey tool *enklik anketa* (1ka.si), and processed with the appropriate procedures of descriptive (mean, SD) and inferential (Pearson's correlation coefficient) statistics using IBM SPSS *Statistics 23*.

4. Research results

Research results include the results of descriptive and inferential statistics, processed and presented by question sets. The structure of respondents (N=130) is presented below.

Table 1: Sample description

GENDER	M	20%
	F	**80%**
YEAR OF STUDY	1ˢᵗ year	2%
	2ⁿᵈ year	9%
	3ʳᵈ year	31%
	4ᵗʰ year	**40%**
	5ᵗʰ year	18%
NAME OF FACULTY	Faculty of Tourism and Hospitality Management	**55%**
	Faculty of Economics of Rijeka	13%
	Faculty of Economics of Zagreb	7%
	PAR University College	7%
	Algebra University College	5.5%
	Other higher education institutions	12.5%

Source: Research findings

Most of the respondents are female (80%) and in the last years of study (40% are 4ᵗʰ year students and 31%, 3ʳᵈ year students). Half of the respondents (55%) attend the University of Rijeka's Faculty of Tourism and Hospitality Management (FTHM).

In the set of identification questions the respondents were asked to state whether they wish to become entrepreneurs, to which 72% gave a positive response. The question concerning the entrepreneurial activities of parents revealed that the parents of 45% of respondents are entrepreneurs. The last question in the set explored the effect of certain motivational factors

on the launching of entrepreneurial initiatives by the respondents. The results are presented in Figure 1.

Figure 1: Motivational factors in launching entrepreneurial initiatives
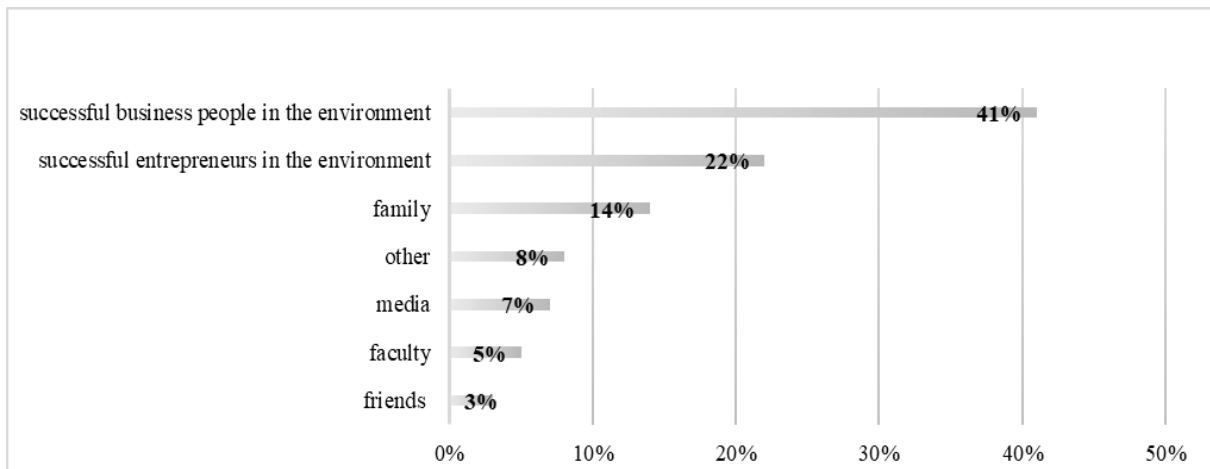
Source: Research findings

Fully 41% of the respondents were motivated to launch entrepreneurial initiatives by successful business people in their environment, and 22% were motivated by successful entrepreneurs in their environment. Interestingly, only 5% of respondents reported the faculty they are attending as a motivational factor for launching entrepreneurial initiatives.

A separate set of dichotomous questions were used to explore the respondents' attitudes towards the role of their faculty in developing entrepreneurial readiness. The results are shown in Table 2.

Table 2: Role of the faculty in developing entrepreneurial readiness

Statement	Yes (%)	No (%)
I believe the faculty has helped develop my entrepreneurial spirit.	35%	**65%**
At the faculty I analysed case studies of successful entrepreneurs.	42%	**58%**
At the faculty I learned how to develop a business plan.	**56%**	44%
At the faculty I learned about the importance of teamwork.	**77%**	23%

Source: Research findings

The results of this set of questions indicate that faculties have a certain role in transferring knowledge in the domain of entrepreneurship. Most respondents (77%) believe they have learned about the importance of team work; more than half (56%) reported that they learned how to develop a business plan; and 43% stated that at the faculty they analysed case studies of successful entrepreneurs. Despite the knowledge they acquired, only 35% of respondents feel the faculty has helped to develop their entrepreneurial spirit.

A Likert scale (anchored at 1 – *strongly disagree* and 5 – *strongly agree*) was then used to examine entrepreneurial propensity. The results are presented in Table 3.

Table 3: Students' entrepreneurial propensity

Attitudes	Statement	MEAN	SD
PERSONAL ATTITUDES TOWARDS ENTREPRENEUR-SHIP	To be an entrepreneur would give me great satisfaction.	**4.0**	0.80
	A career as an entrepreneur is appealing to me.	3.9	0.80
	If I had the opportunity and resources, I would launch a start-up company.	3.9	0.89
	Out of the potential careers in my future, I would rather be an entrepreneur.	3.4	1.11
START-UP INITIATIVE	If I were to launch a start-up, it is very likely I would be successful.	**3.4**	0.78
	I am ready to launch a start-up company.	3.0	1.04
	I believe I possess the knowledge required to launch a start-up company.	3.0	0.99
	I would have no difficulties in launching a start-up company.	2.9	0.94
ENTREPRENEURIAL INTENTION	I am ready to do whatever it takes to become an entrepreneur.	**3.3**	1.02
	My goal is to one day become an entrepreneur.	3.3	1.09
	I have every intention to launch a start-up company one day.	3.1	1.12
	I am committed to the idea of launching a start-up company.	3.0	1.05
ENTREPRENEURIAL MOTIVATION	I want to be an entrepreneur so that I can achieve something of my own.	**4.3**	0.67
	I want to be an entrepreneur so that I can be my own boss.	4	0.9
	I want to be an entrepreneur so that I can make good money.	3.5	0.97
	I want to be an entrepreneur because I think it is trendy.	2.1	0.85

Source: Research findings

The assessment of personal attitudes towards entrepreneurship shows that the respondents gave the highest average score (4.0) to the statement regarding the satisfaction of being an entrepreneur. The lowest average score (3.4) went to the statement "Out of the potential careers in my future, I would rather be an entrepreneur".

The statements examining the students' start-up initiative received medium average scores, with the lowest score given to the statement regarding potential difficulties in launching a start-up company (2.9). On the other hand, the respondents gave the highest average score (3.4) to the statement on how successful they would be if they decided to launch a start-up company.

Research shows entrepreneurial interest to be of medium intensity, as all statements investigating entrepreneurial intention received medium average scores.

Regarding entrepreneurial motivation, the statement "I want to be an entrepreneur so that I can achieve something of my own" has the highest average score (4.3), while the statement equating entrepreneurship with a trend has the lowest (2.1)

The last set of questions asked the respondents to make a self-evaluation of their entrepreneurial traits by selecting one of the statements, provided within each category, that describes them the best. The results are presented in Table 4.

Table 4: Students' self-evaluation of entrepreneurial traits

Entrepreneurial traits	Statement	Ranking	Share (%)
INDEPENDENCE (Am I independent by nature?)	I do all my work independently. Nobody has to tell me what to do.	1	68%
	All I need is a little nudge to get started but then I will continue on my own.	2	29%
	Easy does it. I don't do anything until I have to.	3	3%
LEADERSHIP (Do I have the ability to lead others?)	Usually I can win over most people when I start something.	1	82%
	I can give orders if someone else tells me what I need to do.	2	10%
	Usually I leave leadership to others, but I will join them if I like what they're doing.	3	8%
RESPONSIBILITY (Am I capable of taking on responsibility?)	I like being responsible for what I'm doing and I like to see the results of my work.	1	83%
	I will take on responsibility if I have to; otherwise, I would rather leave it to someone else.	2	15%
	There is always some "know-it-all" who wants to show off how smart they are. I am happy to let them do that.	3	2%
ORGANISATIONAL ABILITIES *(Am I a good organiser?)*	*Before starting anything, I always want to have a plan and a clearly defined line of action.*	*1*	*79%*
	I can manage well until things start getting too complicated. That's when I usually give up.	*2*	*7%*
	I have everything nicely planned out and then some huge problem emerges. That's why I tend to deal with things as they come.	*3*	*14%*

Source: Research findings

The results lead to the conclusion that most of the respondents assess themselves as possessing entrepreneurial traits, considering that 68% of respondents believe they carry out their work independently and fully 82% claim they are able to win people over once they begin something. In addition, fully 83% of respondents like to be responsible for what they are doing and 79% have a plan and a line of action before starting anything.

This study also explored the association between entrepreneurial readiness (viewed through start-up initiative, entrepreneurial intention and entrepreneurial motivation) and personal attitudes towards entrepreneurship. Pearson's correlation coefficients were calculated to analyse the correlation among the research variables "Personal attitudes towards entrepreneurship", "Start-up initiatives", "Entrepreneurial intention" and "Entrepreneurial motivation". The results are presented in Table 5.

Table 5: Correlation coefficients

	Personal attitudes	Start-up initiative	Entrepreneurial intention	Entrepreneurial motivation
Personal attitudes	1	.632**	.818**	.593**
Start-up initiative		1	.677**	.440**
Entrepreneurial intention			1	.604**
Entrepreneurial motivation				1

*Note: **. Correlation is significant at the 0.01 level (2-tailed).*
Source: Research findings

Statistically significant correlations were found between the variables "Personal attitudes towards entrepreneurship" and "Start-up initiatives" (r=0.632, p<0.001) as well as between "Entrepreneurial intention" and "Entrepreneurial motivation" (r=0.593, p<0.001). Hence, it can be argued that an association exists between personal attitudes towards entrepreneurship and entrepreneurial readiness.

5. Discussion and conclusion

The results of the conducted research indicate that most of the respondents wish to be entrepreneurs, a desire that is in line with the traits of Generation Z (Bharat and Rajendra, 2018). The respondents reported successful entrepreneurs and business people in their environment as the key motivational factors for launching entrepreneurial initiatives, while only 5% reported the faculties they are attending. These intriguing findings, contrary to those of the study of Zain et al. (2010) which found family (43%) and faculty (41%) to be the main motivations, deserve to be further analysed in-depth. Other findings in this study, however, suggest that most of the respondents acknowledge that the faculties play a certain role in transferring entrepreneurial knowledge by teaching students about the importance of teamwork and how to develop a business plan, and through case studies of successful entrepreneurs. Nevertheless, the finding that only 35% of the respondents feel their faculty has helped to build their entrepreneurial spirit is a warning sign of the faculties' weak role in promoting and developing entrepreneurial readiness. The reason behind this finding can be linked to the results of Shatto and Erwin's (2016) study that strongly recommends new approaches to teaching. Generation Z's pronounced ability to multitask, their speed in searching for and processing and applying information, together with multilevel networking, are arguments that underscore the need to shift away from traditional teaching models to modern ones, which include substantially more practical work for students. Therefore, the general conclusion based on the obtained results is that faculties possess great but still untapped potential in fostering the development of entrepreneurship readiness in Generation Z students. The first research objective of this study is thus accomplished.

The study's second objective was to determine the level of entrepreneurial propensity of Generation Z students. The results reveal that while the respondents gave the highest average score to the statements reflecting their desire and motivation to engage in entrepreneurial ventures, they simultaneously gave a relatively low average score to the statement that refers to choosing an entrepreneurial career in the future out of all potential careers. All statements of the construct "Start-up initiative" received medium average scores and the same applies to statements of the construct "Entrepreneurial intention". These results corroborate the findings of Iqbal et al. (2012), where the statement that refers to choosing an entrepreneurial career relative to other possible career options also had the lowest average score, despite there being moderate general interest in entrepreneurship.

When viewed through the prism of Generation Z's traits, these apparently contradictory findings gain new meaning. Namely, the statements with the highest average scores point to the entrepreneurial propensity of the respondents, which is fully consistent with the traits of Generation Z members (Ozkan and Solmaz, 2015; Bharat and Rajendra, 2018) who tend to set their goals high. Ozkan and Solmaz (2015), however, call attention to the frustration and dissatisfaction that might emerge in Generation Z members should they not be able to meet those goals. Hence, the score of statements in the other constructs need to be viewed in this context, taking into consideration current events in the market and in society. Namely, with rapid and accessible information at their fingertips, Generation Z members create their

perceptions of current events in the social, market and political spheres, which have not provided an encouraging environment for entrepreneurial activities in recent years. As Majoli (2016) pointed out in his study, given the highly-developed critical thinking in Generation Z members, it can be assumed that they are being cautious when it comes to actual start-up initiatives and entrepreneurial intention. This is corroborated by the findings of Van Gelderen et al.'s (2008) study that showed a pronounced propensity in students to start a business (50%) but also a weakening of their initiative once they became aware of the restrictions present in the business world (75%).

All the above indicates that the respondents – Generation Z students – possess entrepreneurial propensity but, at the same time, are sceptical of their ability to take advantage of it; hence, they show caution when it comes to concrete entrepreneurial intention and actual start-up initiatives. In other words, this study shows that Generation Z students are sensitive to risk from the environment and, therefore, despite their recognised advantages, are not quick to decide on undertaking concrete entrepreneurial initiatives.

To accomplish the study's third objective, research included the respondents' self-evaluation of entrepreneurial traits. Unlike the results of Hunjet et al. (2012) according to which only 40% of respondents reported they were ready to independently start a business, in this study the surveyed students assessed themselves as possessing entrepreneurial traits, as most of the respondents believe they do their work independently, like to take responsibility for what they do and tend to plan their activities before taking action. Based on the results of the conducted research, the following key traits of Generation Z students can be singled out: independence, tenacity, responsibility and good organisation. This is consistent with previous studies (Singh, 2014; Majoli, 2016; Bharat and Rajendra, 2018) whose findings imply that Generation Z is proficient in the use of technology, has high levels of self-efficacy and is proactive.

Finally, following previous research (Zain et al., 2010; Iqbal et al., 2012; Samsudin et al., 2016; Schillo, Persaud and Jin, 2016; Raza et al., 2019), this study conducted a correlation analysis that found statistically significant correlations between the variables "Personal attitudes towards entrepreneurship" and "Start-up initiative" (r=0.632, p<0.001) and between "Entrepreneurial intention" (r=0.818, p<0.001) and "Entrepreneurial motivation" (r=0.818, p<0.001). This study also found an association between personal attitudes towards entrepreneurship and entrepreneurial readiness.

Considering their exceptional abilities and the advantages they enjoy in a modern environment, Generation Z students have high expectations. The combination of their traits and skills, with the help of technology, are arguments that open up opportunities for great achievements to members of this generation, practically allowing them to change the world to suit them. Should they decide to become entrepreneurs, their chances of succeeding are also great, because they possess almost all the inherent and acquired predispositions needed, as the findings of this study have confirmed.

This research is a step forward in improving theoretical knowledge and it contributes to the literature in the field of entrepreneurship and entrepreneurial teaching, by explicitly focusing on both the traits and the needs of a new generation of students, authentic representatives of Generation Z. The study has practical implications; namely, research results suggest the need of ensuring incentive and support structures for Generation Z students to enable them to engage in entrepreneurial ventures. Accordingly, the study's results can serve as a starting point in improving institutional climate, thus facilitating the formation of partnerships and

synergy with entrepreneurs in practice. In addition, the conducted research can be used as a platform for putting forward suggestions applicable to the education system and focusing primarily on ensuring an innovative and creative approach to teaching, to make it congruent with and tailored to the new generation of students.

When considering results, it should be mentioned that the study has a few limitations. One is its spatial limitation, as the research on entrepreneurial readiness encompassed only students attending certain higher education institutions (with most of the students attending the University of Rijeka's Faculty of Tourism and Hospitality Management), exclusively within the territory of Croatia. Accordingly, future studies should expand the spatial scope of research to include students attending other faculties both in Croatia and in the broader region. Furthermore, more research should be conducted to investigate the motivational factors for launching entrepreneurial initiatives and to understand the reasons behind the contradictory findings in previous studies and in this study that found faculties to be of low importance (5%) as entrepreneurial motivators.

In light of the application of methodological tools, an additional limitation of this study is the use of descriptive analysis which, although offering some added value to this research area, can serve as a starting point for further empirical research on this topic, in the direction of generating in-depth conclusions. In this sense, it is possible to make suggestions for future research, which will include a more complex research methodology and thus create a basis for more concrete results and more layered discussion. For these reasons, the results of this study are indicative and should not be generalised.

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ARE DIFFERENCES IN GENDER, EDUCATION, WORK EXPERIENCE, AND POSITION RELEVANT FOR STRATEGIC NETWORKING PROCESS AMONG SLOVENIAN SMES?

ABSTRACT

In today's interconnected world networking is a contemporary research topic mainly aimed at analyzing the performance of various market players, very often small and medium sized enterprises (SMEs). Due to a lack of resources, both tangible and intangible ones, SMEs are unable to operate and achieve significant business performance without engaging in and building some form of strategic network relationships. There are various antecedents of forming these kinds of long-term oriented relationships, however, literature mainly focuses on commitment, trust, reputation, communication, and cooperation as antecedents of strategic networking. Since these antecedents are to some extent dependent on personal traits and background characteristics of actors engaged in networking activities, it is interesting to examine the nature of the relationship between such personal traits and strategic networking. Therefore, the aim of this paper is to investigate how differences in gender, education and work experience influence strategic networking activities. The empirical research revealed interesting findings in regards to experience and education differences among Slovene SMEs, especially with respect to gender (male versus female), as well as to moderation effects gender plays on these interdependencies.

Keywords: Strategic networking, Gender differences, SME, Slovenia.

1. Introduction

The importance of SMEs and their economic impacts (e.g. new products, employment, reduction of poverty, and GDP growth) as well as social impacts (e.g. health, sociological ties, and quality of life) have been widely researched (Jarillo 1988; Diener and Suh 1997; Dabson 2001; Burt 2001; Sitharam and Hoque 2016). As SMEs account for about 99% of all enterprises in Europe (Potocan and Nedelko 2014), employing around 50% of all employees (Fatoki and Odeyemi 2010), they are essential to achieve sustainable economic growth (Bowen, Morara, and Mureithi 2009; Suriyapperuma et al. 2015). SMEs in Slovenia account for 64.5% of value

added and 72% of employment, which is more than the EU averages of 56.4% and 66.6% (European union 2020). Beck, Demirguc-Kunt, and Levine (2005) describe a positive association between the importance of SMEs and GDP per capita growth on a sample of 45 countries. While they find no evidence that SMEs mitigate poverty or decrease income inequality, others state that business success improves quality of life and assists in overcoming economic challenges in developing countries (Dabson 2001; Ganbold 2008). A major challenge that affects SMEs' performance recognized by (Sitharam and Hoque 2016) is competition among enterprises. As the threat of competition is viewed as the main motivation for cooperation (Miller, Besser, and Malshe 2007), networking seem like a sound tool to be employed to improve the performance of SMEs (Premaratne 2002; Sawyerr, Mcgee, and Peterson 2003; Shin et al. 2017).

Even though there are no legal impediments to female entrepreneurship and efforts are being made to ensure gender equality (Zimmerer and Scarborough 1997), men are generally more likely to be involved in entrepreneurial activity (Reynolds 2003). In Slovenia, female entrepreneurs account for around 30% (Pušnik et al. 2009) of entrepreneurs. While Slovene women involve in entrepreneurial activity out of need more than women in other countries (Tominc and Rebernik 2003), the proportion of female entrepreneurship in Slovenia remains among the lowest in the EU (European union 2020). With regard to SME networking, a study by Širec (2009) indicate that men assess the intensity of cooperation lower than women do. According to the same research, women entrepreneurs in Slovenia are more willing to seek for assistance in business and they network more intensively than men.

SMEs represent a more dynamic and innovative sector compared to large firms, particularly in small, open, and highly interconnected economies such as Slovenia, where EU and global integration as well as rapid technological improvements cause various changes, including changes in organizational structures of SMEs (Pech and Vrchota 2020; Gherghina et al. 2020; D. Ibarra et al. 2020). To allow quicker decision making, SMEs had to adapt their organizational structures to new market circumstances and customer requirements (Pilar, Marta, and Antonio 2018). Strategic networking enables SMEs to transform into a more flexible and effective organizational forms. SMEs can network with various market players, such as clients, suppliers, financial institutions, supporting institutions, local and state government bodies, and competitors (Nooteboom 1999). This is the same whether they are of competitive, cooperative or coopetitive nature (Ceptureanu et al. 2018), and if they have a bilateral or unilateral character (Zaheer, Gozubuyuk, and Milanov 2010; Olaizola and Valenciano 2014). Networks are generally used as platforms for sharing mutually beneficial information and resources (Farinda et al. 2009) to overcome limitations and challenges of SMEs, which would be unlikely to confront with independently. The dynamics of SME business networks are highly dependent on the dynamics of SMEs temporal environment (Jeong, Jin, and Jung 2019). Therefore, cooperating in structured networks is an advantageous strategy for enhancing business success of network members as well as promoting relationship governance (Thorelli 1986; Jarillo 1988; Lorenzoni and Lipparini 1999). Previous studies investigated how companies should connect in business networks (Håkansson and Ford 2002), and some found a positive relationship between strategic networking and business performance (Bartlett and Bukvic 2001; Chen and Tzeng 2007; Eisingerich and Bell 2008; Bandiera, Barankay, and Rasul 2008; Suriyapperuma et al. 2015; Morić Milovanović, Primorac, and Kozina 2016).

Despite their importance within economies, the failure rate of SMEs is generally high around the world (Fang, Yuli, and Hongzhi 2008). Therefore, it is necessary to examine tools for advancing SMEs' business success, such as networking. This study examines the nature of the

relationships between personal traits and strategic networking, as strategic networking activities, viewed through its antecedents, are considerably dependent on the personal characteristics of actors engaged in networking activities (Souza and Batista 2017; Fjordhammar and Roxenhall 2017; Moric Milovanovic, Primorac, and Kozina 2020). The goal of this research is to examine if there are differences in gender, education, work experience, and position relevant for strategic networking process among SMEs in Slovenia. In addition, interaction effects of gender and experience, gender and education, and gender and position in relation to strategic networking are tested.

2. Literature review and hypotheses

Networking as a concept has been used in different scientific areas, such as sociology, economics and organizational behavior (Donckels and Lambrecht 1995; Håkansson and Ford 2002; Claro 2004; Ritter, Wilkinson, and Johnston 2004). According to Brass et al. (2004) a network is defined as a set of actors or nodes (individuals, work units, or organizations) and the relationships (ties) between them. Networking theory applicable to SMEs suggest that firms' performance is deeply influenced by the networks they are embedded in (Zhao and Aram 1995; Gulati, Nohria, and Zaheer 2000; Ritter, Wilkinson, and Johnston 2004; Hughes et al. 2015). According to the transaction cost theory, firms tend to economize transaction costs by vertical integration (Williamson 1991), which results in interactions between small firms (Thorelli 1986). Another reason to network is rooted in the resource dependency theory by Pfeffer and Salancik (1978). They argue that a firm's performance is dependent on its external environment. According to Jack, Dodd, and Anderson (2008) networks are considered vital living organisms, constantly changing and developing over time. In this view, no firm is in complete control of all the conditions in the entrepreneurial environment. The lack of coordination within the environment leads to uncertainty, followed by a natural need to increase coordination, leading to formation of linkages (Pfeffer and Salancik 1978). In conditions of structured interactions, information and resources can be exchanged to improve business performance (Streeck, Pyke, and Sengenberger 1993). When networking is carried out to attain business success, it is referred to as 'strategic networking' (Miller, Besser, and Malshe 2007). According to Jarillo (1988) the focus of strategic networking theory is the development of trusting relationships among members as a strategy to promote cooperative behavior among firms.

While Watson (2012) argues that in networking activities female SME owners as compared to male SME owners do not have an advantage, other researchers state that men have easier access and greater quality of information as compared to women (Durbin 2011; Son and Lin 2012). While both men and women tend to network more with same sex (Macintosh and Krush 2017), Forret and Dougherty (2004), Emmerik (2006), and Macintosh and Krush (2017) find that men and women have a different way of networking, when considering their motivations and approaches. Men also attend business networking meetings more than women, and men benefit more from customer networking, while women benefit more from professional networking (Macintosh and Krush 2017). Ibarra (1992) and Forret and Dougherty (2004) discovered that men benefit more than women from career investments such as total compensation and the number of promotions. Some studies indicate that women want to develop their professional network to increase access to resources, but not necessarily have an advantage over men; rather, it is to narrow the gap that already exists between them (Durbin 2011; Son and Lin 2012). Additionally, women attribute external factors to be responsible for their career success, while men give credit for success to themselves (Ackah and Heaton 2004). Based on the literature, we propose the following hypothesis:

H1: Gender has a statistically significant effect on strategic networking of SMEs, with males having a higher level of strategic networking activities than females.

One study suggests that SME owners have less need to ask for advice from formal or informal networks as they gain more experience (Watson 2012). However, other studies argue that entrepreneurs see sharing information as sharing issues (i.e. 'halving'), as they can comment on problem solving with others who encountered similar problems (Fuller-Love and Thomas 2004; Dawson et al. 2011). Therefore, our second hypothesis is formed as:

H2: Work experience has a positive effect on strategic networking of SMEs.

According to Greve and Salaff (2003) and Shaw et al. (2009), SME owners with a high level of education are also likely to possess a larger number of network contacts. They should also have more skills and knowledge to sustain the business (Sitharam and Hoque 2016). Another study finds that education positively impacts on networking and the types of networks (MacGregor 2004). We hypothesize that education has a positive impact on networking.

H3: Education has a positive effect on strategic networking of SMEs.

Males are naturally more aggressive in behavior than females (Griskevicius et al. 2009). According to the same research, females will not be motivated to confront face-to-face unless they feel seriously threatened. They only become competitive in times of scarce resources. This could be translated into strategic networking, as men and women seek different benefits from networking (Macintosh and Krush 2017). Women are more likely to use close friends and family for networking, which has the tendency to change with experience, education and position (Watson 2012). The following hypothesis is formed based on the existing literature:

H4: Position has a positive effect on strategic networking SMEs.

As we are interested in examining gender differences and their moderating effects on experience, education, and position in relation with strategic networking in Slovenian SMEs, we test the following hypotheses:

H5: Relationship between work experience (within the firm) and strategic networking of SMEs will be moderated so that the relationship will be stronger for women than for men.

H6: Relationship between level of education and strategic networking of SMEs will be moderated so that the relationship will be stronger for women than for men.

H7: Relationship between formal position in the firm and strategic networking of SMEs will be moderated so that the relationship will be stronger for men than for women.

3. Research method

3.1. Sample

Referring to Statistical Office of the Republic of Slovenia (SURS) and in line with EU definition of SMEs, firms with less than 10 employees are classified as micro firms, with 10 to 49 employees as small firms, and with 50 to 250 employees as medium sized firms. Sampling frame for the operational part of the research was taken from the database of a private consulting firm, where a total of 1,000 SMEs was contacted in February and March of 2020. Out of 1,000

contacted SMEs, 120 responded to the email enquiry and correctly filled out an email questionnaire which represents a response rate of 12%. When looking at the sample breakdown by firm size, micro firms represent 65.0% (n = 78) of the overall number of firms represented in the sample, while small and medium sized firms represent 23.3% (n = 28) and 11.7% (n = 14), respectively. Stated differently, firms with less than 50 employees represent majority of the sample with 88.3% of the overall respondents. On the other hand, when looking at the industry sector, majority of respondents operated in the manufacturing and construction sectors, 25% (n = 30) and 15% (n = 18), respectively. Further analysis of sample demographics reveals that 64.2% of respondents were male, while 35.8% were female, 69.2% have a university diploma, 81% worked longer than seven years for the same firm, and 65.8% were firm owners.

3.2. Variables and measures

3.2.1. Dependent variable

Strategic networking as unidimensional construct was measured via 7 – point Likert type questions based on Allen and Meyer's (1990) scale for assessing commitment, Garbarino and Johnson's (1999) scale for assessing trust, Hansen, Samuelsen, and Silseth's (2008) scale for assessing reputation, Sivadas and Dwyer's (2000) scale for assessing communication, and Eriksson and Pesämaa's (2007) scale for assessing cooperation. Strategic networking score has a mean of 5.00, a standard deviation of 0.94, and a Cronbach's α value of .81.

3.2.2. Independent variables

Gender as an independent variable has been coded as a dummy variable with 0 representing female, and 1 male.

Work experience as an independent variable measured respondent's work experience within the current firm, and it has been coded into four groups: 'less than 1 year', '1 to 4 years', '5 to 7 years', and 'more than 7 years'.

Education as an independent variable measured respondents' highest achieved education level, with the following coding: 'secondary school and lower', 'university diploma', 'master/MBA diploma', and 'PhD diploma'. Moreover, education has been additionally coded as 'years of schooling', to further test the validity of the obtained results. There was no statistically significant difference between the two classifications.

Position as an independent variable measured the respondents' current position within the firm's organizational structure, with three different coding groups: 'owner', 'director', and 'manager'. Respondents' current position has been additionally coded as a three-level dummy variable (owner, director, manager) to further test the validity of results. Detailed descriptive statistics of independent variables are presented in table 1.

Table 1: Descriptive statistics of independent variables

Variable	Frequency	Percentage	Variable	Frequency	Percentage
Gender			*Position*		
Male	77	64.2%	Owner	79	65.8%
Female	43	35.8%	Director	20	16.7%
Education			Management	21	17.5%
High school	37	30.8%	*Work Experience*		
Bachelor	48	40%	<1 year	2	1.7%
MBA/Master	23	19.2%	1 – 4 years	17	14.2%
Doctorate	12	10%	5 – 7 years	4	3.3%
			>7 years	97	80.8%

Source: Authors

3.3. Control variables

For the purpose of analysis, *firm size* and *industry* were used as control variables, where firm size was controlled as the total number of employees within the firm. A micro-firm was classified with less than 10 employees, small firm with 10 to 49 employees, and medium sized firm with 50 to 250 employees. To control for industry-level effects, eight different industry sectors were coded and controlled for, according to SURS (Statistical Office of the Republic of Slovenia).

3.4. Analysis

Moderated regression analysis was used to test the relationships between independent variables: gender, experience, education and position, and strategic networking as a dependent variable. Furthermore, moderated regression analysis was used to test whether moderation (interaction) effects of gender and experience, gender and education, and gender and position, exist when put in relationship with strategic networking. Detailed tests have been conducted to make sure there were no issues with multicollinearity (variables were mean-centered), heteroscedasticity, and autocorrelation, and to ensure no presence of nonresponse or common method bias.

4. Results

Means, standard deviations and correlation coefficients of controlling variables (firm size, and industry), independent variables (gender, experience, education, and position), dependent variable (strategic networking), and moderation effects used in main model are shown in table 1. Correlation coefficients are rather modest, ranging from -0.389 to 0.274, with statistically significant correlation coefficients between following variables: firm size and position ($r = -0.389$), experience and education ($r = -0.205$), interaction between gender – experience and strategic networking ($r = 0.274$), interaction between gender – education and strategic networking ($r = 0.258$), and interaction between gender – position and gender ($r = 0.226$).

Table 2: Means, SDs, and correlations, n = 120 (strategic networking)

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. Strategic networking	5.00	0.94	1.00									
2. Firm size	1.46	0.69	.160	1.00								
3. Industry	4.76	2.31	-.161	-.140	1.00							
4. Gender	0.64	0.48	-.185	-.027	.098	1.00						
5. Experience	3.63	0.78	.262	-.099	.128	-.138	1.00					
6. Education	2.15	1.00	.029	.079	.166	.148	-.205*	1.00				
7. Position	2.67	0.86	-.040	-.389**	.118	-.001	.033	-.040	1.00			
8. Gender x Experience	-0.04	0.39	.274**	-.032	-.004	.026	.172	.058	-.076	1.00		
9. Gender x Education	0.07	0.49	.258**	-.049	.048	.056	.047	.142	.005	-.131	1.00	
10. Gender x Position	0.00	0.42	-.084	.122	.165	.226**	-.108	.039	.042	-.015	-.021	1.00

Notes: *. Correlation is significant at the 0.05 level (2-tailed); **. Correlation is significant at the 0.01 level (2-tailed).

Source: Authors

Table 2 illustrates the results of the moderated regression analysis with strategic networking observed as a dependent variable, where model 1 contained only the control variables; model 2 added direct effects of gender, experience, education, and position; and model 3 included moderation effects of gender on experience, education, and position to their relationship with strategic networking. Results from table 2 give support for the hypothesis 1 and hypothesis 2, while there is no evidence to support hypothesis 3 and hypothesis 4. Stated differently, there is enough statistically significant evidence to confirm that gender ($\beta = 0.318$, $P < 0.1$) and experience ($\beta = 0.272$, $P < 0.05$) have a direct positive effect on strategic networking of SMEs. More precisely, since the beta coefficient is of positive sign it further confirms hypothesis 1, that males are having a higher level of strategic networking activities compared to their female counterparts. However, when looking at the moderation effect that gender has on the relationship between experience, education, and position, and strategic networking as the observed dependent variable, there is statistically significant evidence to support hypothesis 5 and hypothesis 6, although there is not enough statistically significant evidence to support hypothesis 7. In other words, there is enough statistically significant evidence to confirm that there is a relationship between work experience (expressed as number of years with the firm, $\beta = -0.698$, $P < 0.01$) and education ($\beta = -0.584$, $P < 0.01$), and strategic networking of SMEs is moderated as such that the relationship is stronger for women then for men. With more years of experience working for the same firm, and with a higher level of education, women tend to network more than their male counterparts. Moreover, figures 1 and 2 provide further evidence to support hypothesis 5 and hypothesis 6, i.e. that gender moderates the relationship between experience, education, and strategic networking of SMEs observed as dependent variable.

Table 3: Moderated regression analysis (primary model); dependent variable: strategic networking[1]

Variables	Model 1: Control variables		Model 2: Direct effects		Model 3: Moderation effects	
	β	S.E.	β	S.E.	β	S.E.
Controls						
Firm size	.191	.124	.226*	.129	.278**	.121
Industry	-.058	0.38	-.078**	.037	-.072**	.035
Direct effects						
Gender			.275	.173	.318*	.164
Experience			.373***	.108	.272**	.103
Education			.125	.085	.052	.080
Position			.046	.103	.083	.096
Moderation effects						
Gender x Experience					-.698***	.200
Gender x Education					-.584***	.157
Gender x Position					-.031	.189
Model stats						
R-squared	.045*		.166***		.307***	
Adj.R-squared	.029*		.122***		.250***	
ΔR-squared	.045*		.121***		.141***	

Notes: *P < 0.10; **P < 0.05; ***P < 0.01. Durbin-Watson stat = 2.206, VIFs <2, Cooks = .159.
Source: Authors

Figure 1: Interaction between gender, experience, and strategic networking
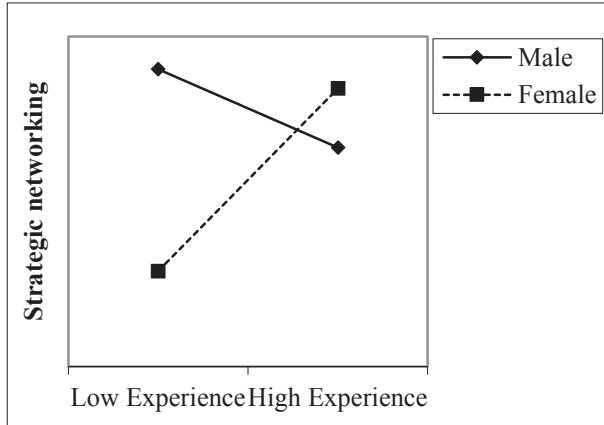
Figure 2: Interaction between gender, education, and strategic networking
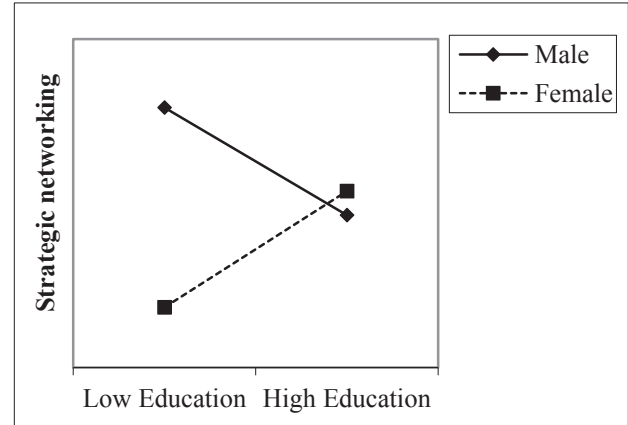
Source: Authors

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[1] Model has been further tested with 'position' as control variable, instead of independent variable, where effect of gender on strategic networking has been amplified (β = 0.324, P < 0.05) adding robustness to the observed model.

5. Conclusion

The continuously changing nature of SME business networks is highly dependent on the dynamics of the temporal and environmental context the SMEs operate in. When compared to large firms, small and medium sized enterprises represent a more agile, dynamic and innovative sector of any economy. This is especially true for a small, open and highly interconnected economy such as Slovenia, where changes caused by EU integration, globalization and rapid technological advancements have a profound impact on various organizational aspects of SMEs. To address these changes, small business owners began transforming their businesses towards more flexible, dynamic and effective organizational forms, often enabled by strategic networking. SME networks can be formed between various market players (clients, suppliers, financial institutions, supporting institutions, local and state government bodies, competitors, etc.), they can have a bilateral or unilateral character, and can be cooperative, competitive or coopetitive in nature.

Since strategic networking activities, primarily viewed through its antecedents, appear to be highly dependent on personal traits and background characteristics of actors engaged in such networking activities, this research examined the nature of the relationship between such personal traits and strategic networking. More specifically, we investigated what effects do gender, education, work experience, and hierarchical position within the organization have on strategic networking activities. The research results have found that gender has a positive effect on strategic networking of SMEs, where males have higher level of strategic networking activities compared to their female counterparts. Moreover, we have also found that experience, measured by the number of years working for the firm, has a positive effect on strategic networking of SMEs, as well. On the other hand, no effect was found that education and organizational position have on strategic networking of SMEs. However, when moderation effects of gender were observed, results confirmed that such a moderating relationship exists between work experience and strategic networking, and between education and strategic networking, where the effect is stronger for women. This finding implies that although women are initially less inclined towards networking activities, they become more prone to networking as their experience and education increase. Finally, gender does not play a significant moderating role when it comes to observing the hierarchical position within the company and strategic networking.

Any investigation into how demographics, especially gender, impact the formation of SME strategic networks is a worthy scholarly inquiry. We hope the results of this research will provide interesting insights into the dynamics of strategic networking from the point of view of demographics, and a preliminary framework for further investigation of how demographic variables can influence SMEs strategic networks within regionalized, small, and open economies.

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TOWARD SOCIAL ENTREPRENEURSHIP: AN INVESTIGATION OF SOCIAL ENTREPRENEURSHIP ORIENTATION, BRAND IMAGE, AND PERFORMANCE OF NONPROFIT ORGANIZATIONS

ABSTRACT

In this paper, a social entrepreneur is defined as an organization that pursues its main purpose – social mission, while at the same time strives to be financially sustainable and independent by creating social value through innovation. Even though the Strategy for the development of social entrepreneurship in Croatia is adopted in 2015, there is still no official and reliable database on social entrepreneurs available. In the Republic of Croatia, social entrepreneurs take legal forms as NGOs, cooperatives, companies, and institutions. In this paper, a classification of social entrepreneurs in Croatia presented by Ivo Pilar Institute is used, but also a further investigation on the past trends and current state in the sector of NGOs and cooperatives is provided since they account for more than 80% of all social entrepreneurs in Croatia. Moreover, these forms of social entrepreneurs are especially vulnerable in terms of survival and growth in the context of budget restraints and are more than ever forced to explore alternative funding sources. It is argued that social entrepreneurship as a vehicle for value creation is a condition sine qua non for NGOs and cooperatives in Croatia, and that internal pool of creativity isn't quite enough for viable results; better public image and reputation and stronger brand will facilitate social entrepreneurship efforts and will ensure that the ultimate goal is reached: fulfilling the social mission, creating social value through innovation and being sustainable. Additionally, COVID-19 pandemic effects are included since its far-reaching economic consequences have gravely wounded the Croatian economy and made the position of social entrepreneurs even more challenging/difficult. For the purposes of this paper, an in-depth investigation of two NGOs comparable by all attributes, except for the brand is provided. The qualitative methodology and in-depth case study analysis are used to investigate the main research question – can social entrepreneurship orientation, brand image, and performance provide a viable framework for the assessment of social entrepreneurship potential of NGOs? Results suggest that proposed framework can be a vantage point in distinguishing NGOs potential of becoming successful or less successful social entrepreneurs, measured by a set of key performance indicators, even in a crisis (COVID-19 pandemic) setting.

Keywords: *social entrepreneurship potential, NGOs, brand value, sustainability.*

1. Introduction

The social entrepreneurship research domain is in its nascent stage compared to other areas of management (Bacq & Janssen, 2011), and much of the literature on social entrepreneurship

remains in the definitional arena (Dacin et al., 2010). First authors in the field of social entrepreneurship were practitioners, and academic interest in the field peaked at the turn of the second millennium (Kannampuzha, 2017, p. 17). In the past 20 years, empirical evidence on social entrepreneurship has grown, but still relies greatly on practices in the USA and UK, and to a lesser extent on practices in Europe. Empirical studies from transition economies are rarest, and in that sense, this study provides an insight into the scarce social entrepreneurship practices in Croatia - a contribution to the limited empirical evidence in transition economies. It is argued that the role of marketing in the social entrepreneurship context is understated, and that the resource acquisition process underlying exploration and exploitation of entrepreneurial opportunities, can be linked to brand image. In that regard, this study explores brand image contribution to social entrepreneurship organizations' intentions and capabilities in terms of sustainability.

2. Literature overview

In the early stages of the field's development, drawing parallels to traditional, commercial entrepreneurship was common, as bridging two "parallel universes", one where profit is the ultimate goal and the only desired outcome, and the other where resolving social problems and satisfying social needs were outcomes far superior to profit, had to be reached using conventional wisdom; "scenery", terminology, and constructs were translated from entrepreneurship research. A social entrepreneur was recognized to "play the role of change agents in the social sector by: (a) adopting a mission to create and sustain social value (not just private value), (b) recognizing and relentlessly pursuing new opportunities to serve that mission, (c) engaging in a process of continuous innovation, adaptation, and learning, (d) acting boldly without being limited to resources currently in hand, and (e) exhibiting a heightened sense of accountability to the constituencies served and outcomes created" (Dees, 1998, p. 4). Social entrepreneurship is context-dependent and manifests itself in a myriad of legal and organizational forms so academic definitions of this phenomena are quite diverse resulting in a field of study characterized by no unified definition (Short et. al., 2009).

Different researchers denote different attributes and meanings to the social entrepreneurship concept. One group of researchers refers to social entrepreneurship as non-for-profit initiatives in search of alternative funding strategies, or management schemes to create social value. The second group of researchers understands it as socially responsible practice of commercial businesses while a third group views social entrepreneurship as a means to alleviate social problems and catalyze social transformation (Mair & Martí, 2006, p. 37). Most definitions of social entrepreneurship refer to an ability to leverage resources that address social problems, although there is little consensus beyond this generalization (Dacin et. al., 2010, p. 37). Social entrepreneurship can be best described and understood as a process of creating value by combining resources in new ways whereas these resource combinations are intended primarily to explore and exploit opportunities to create social value by stimulating social change or meeting social needs (Mair & Martí, 2006, p. 37). This is in line with the common understanding of social enterprise as an organization that is pursuing its main purpose – social mission while in the same time strives to be financially sustainable by creating social value through innovation (Dees, 1998). The key factor in differentiating social entrepreneurs from commercial entrepreneurs is social mission (Chell, 2007). The term social mission is used to describe the altruistic motive of the organization towards the improvement of society.[1] Other distinctive

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[1] Altruistic motives as behavioural baseline are captured and described by propositions of stewardship theory, which was a critique and an alternative to agency theory (which recognizes motives as opportunistic and selfish in nature).

elements of social entrepreneurship include multiple stakeholders interrelated to social mission (Low, 2006), a position where opportunity identification process may have different features when focused on social problems and/or needs (Murphy & Coombes, 2009), and access to fewer resources than commercial entrepreneurs (Austin, et. al., 2006).

The spectrum of possible social entrepreneurs also includes NGOs that are due to changed dynamics in social and economic environment, and increased competitive pressures, forced to adopt more entrepreneurial management approaches in order to improve their performance. Nevertheless, little is known about what drives social entrepreneurship in NGOs and social entrepreneurship intentions deserve a special research attention (Tan & Yoo, 2015).

In order to survive and grow, social entrepreneurs are forced to engage in an entrepreneurial process that includes both exploration and exploitation of entrepreneurial opportunities (Alvarez & Barney, 2007; Short et. al., 2009) for value-creating purposes in the same way that commercial entrepreneurs do. Attracting and acquiring human and financial resources for entrepreneurial action is more complex and more difficult in social entrepreneurship organizations because of the imperative of meeting economic and social goals simultaneously and because of the tension between social mission and profit-generating logic that is inherent to the entrepreneurial process. Meeting socially relevant goals while at the same time securing economic sustainability is an important distinctive characteristic of social entrepreneurs (Dees, 2012). Social entrepreneurs exploit opportunities to create a social value inside boundaries delineated by social mission, sustainability, and contextual factors (Weerawardena & Mort, 2006). This creates a unique setting where acquiring and deploying financial, physical, and human resources are constrained (in contrast to commercial entrepreneurs who put emphasis on profit-maximization, social entrepreneurs might be considered unattractive to investors and potential employees), hence a greater understanding is needed of resource acquisition in a social entrepreneurship context (Haugh, 2005), resource constraints (Dacin et. al., 2010), and social bricolage as a mechanism for social entrepreneurs to survive and succeed (Di Domenico et. al., 2010). The process of resource mobilization is an important aspect of strategic plan implementation. Social enterprises have to market themselves in order to obtain funding, attract motivated and talented employees, attract customers and appeal to new members. When multiple organizations are competing for similar resources[2] including money and workforce, marketing can help a social enterprise to differentiate itself (Kannampuzha, 2017, p. 20). By engaging in branding and marketing strategies social entrepreneurs can obtain a competitive advantage in resource mobilization. The brand can be seen as one of the organization's most valuable assets and also it can be leveraged as a key competitive advantage regarding attracting the right resources (Backhaus & Tikoo, 2004). Essential ingredients of every strong brand are brand identity and brand image. While brand identity is emerging from the organization and helping an organization to communicate its individuality and distinctiveness to all its relevant publics ("how we see ourselves"), brand image is related to consumer's perceptions of the brand ("how relevant others see us"). It is of vital importance that the two aspects of the brand are in perfect harmony; congruency between identity and image implies that the consumer has a great understanding of (and agreement with) the brand message and is likely to be loyal to the brand

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[2] It should be pointed out that competition in the social entrepreneurship context should be purely on the supply side - various organizations are competing for the same resources; human, financial, and other resources. On the demand side, competition should be practically non-existent due to the very nature of social enterprises. They aim to have a greater social impact by providing solutions to detected social problems. In that sense, they would be willingly sharing their innovative solutions with "competitors" (they would allow others to copy their innovative ideas) in contrast to traditional companies that would protect their innovations from competitors in order to maintain a competitive advantage. See in Santos, F. M. (2012): A Positive Theory of Social Entrepreneurship, Journal of Business Ethics, 111(3), pp.-335-351

(Nadan, 2005). The brand has to be perceived as superior in addressing consumer needs than the competition. Even though the role of marketing in the growth of non-profit organizations is well documented, the lack of studies researching marketing in social entrepreneurship[3] is found to be quite significant. Social entrepreneurs will need to develop or acquire greater marketing capacity, and start looking at their assets from a marketing point of view, not merely a mission point of view (Zietlow, 2001, p. 38). Additionally, brand issues are to an even lesser extent present, compared to inquiries into the role of brand in the non-profit sector.[4] Recent studies suggest that social entrepreneurship-social marketing interface is a potentially fruitful research avenue for identifying the role of marketing in achieving social mission (Singh et. al., 2015).

This paper is a contribution to scarce empirical findings on social entrepreneurship in transition economies since it is very well documented in USA and UK and to a lesser extent in Europe (Short et. al., 2009). In USA and UK, the notion of social enterprise is quite similar referring to non-profit organizations which adopt and implement earned income strategies (strategies "borrowed" from for-profit organizations) to become financially self–sustainable. In Europe, social enterprises are derived from cooperatives and third sector organizations which belong neither to the public nor private sector. In developing countries, social enterprise is associated with NGOs and lately to a for-profit organization addressing to needs of lower income market segments (Kannampuzha, 2017, p. 18).

3. Empirical research

3.1. Overview of social entrepreneurship in Croatia

In 2015, the Government of the Republic of Croatia has adopted the Strategy for the Development of Social Entrepreneurship in the Republic of Croatia for the period 2015-2020. The Strategy's main objective was to stimulate social enterprise creation and growth by establishing a more supportive institutional and financial environment. Prior to Strategy, no official definition of social entrepreneurship existed, and on the platform of the triple bottom line, Strategy defined social entrepreneurship as "a business based on the principle of social, environmental, and economic sustainability, in which generated profit is entirely or largely reinvested for the benefit of the community" (Strategy for the Development of Social Entrepreneurship in the Republic of Croatia for the period 2015-2020, p. 7). In Croatia, social enterprises occur in the non-profit sector, business sector, and governmental sector, and from the last available report, there were 112 social entrepreneurship actors in Croatia in 2015 taking legal forms of NGOs (associations) (50,9%), cooperatives (34,8%), companies (13,4%), and public institutions (0,9%) (Šimleša et. al., 2019, p. 34). In comparison to 2014, when 90 social entrepreneurship actors were identified, an increase of number is evident, especially among NGOs (44 in 2014, and 57 actors in 2015) and cooperatives (31 in 2014, and 39 actors in 2015). Together, all social entrepreneurship actors employed 1.115 employees in 2015 (which is significant growth when compared to just under 800 employees in 2014), and these figures, albeit not recent because no systematic database in Croatia is available, clearly show that social entrepreneurship in Croatia is underdeveloped and marginalized. As for the territorial

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[3] Findings of Short et. al. (2009) study indicate that marketing discipline contribution to the social entrepreneurship research was fairly low (only 6% of published work in contrast to 26% of publications in management discipline). The sample consisted of 152 articles on social entrepreneurship covering time span of 18 years.

[4] Short et. al. (2009) found that prior social entrepreneurship research has largely focused on non-profit and public policy issues. The reason why interest in social entrepreneurship research emerged in the non-profit and public policy literature is the trend among non-profits to seek revenue-generating opportunities, and entrepreneurship is seen as a mechanism that enables such organizations to enhance their ability to create value through innovation.

distribution, just under a quarter of all social entrepreneurs in Croatia in 2015 were located in the City of Zagreb, and by numbers, the next biggest region is Split-Dalmatia County (13,6% of all social entrepreneurs in 2015) (Šimleša et. al., 2019, p. 35). Further investigation was conducted on the current state and past trends in the sector of NGOs and cooperatives in Split-Dalmatia County since selected NGOs, social entrepreneurship actors that are in the focus of the presented study operate in Split-Dalmatia County. Using available data of Croatian bureau of statistics, in 2017, NGOs accounted for 3,6% of all active business subjects in Split-Dalmatia County while cooperatives accounted for only 0,59%. NGOs employed 1,94% while cooperatives employed 0,36% of all employees in Split-Dalmatia County. As for the dynamics, 5 years period (2013-2017) was used to analyze trends; the number of active NGOs increased by 5,9% and the employment rate increased by 9% while the number of active cooperatives decreased by 3,2% while in the same time employment rate increased by 30%. This clearly indicates that social entrepreneurship has significant potential to reduce unemployment, the economic issue that the Croatian Government is struggling with.

3.2. Research methodology

The research was conducted during spring 2019, on two comparable Croatian NGOs that are dealing (at least partially) with social entrepreneurship. Prior to the in-depth interviews, in-depth analysis of available secondary data was conducted, with a special focus on data regarding public image, financial success and social impact of organizations activities. In the spirit of the COVID 19 pandemic, the research was repeated in summer 2020, in order to investigate the pandemic impact on social entrepreneurship orientation and overall performance of two selected NGOs. Interviews and discussions with NGOs representatives (managers of operations) were held per each NGO separately and their average length was three hours in the first phase and two hours in the second (pandemic) phase. The topics were divided into several areas, using identical questions for both NGOs in this research. An in-depth investigation was based on the model by Tan & Yoo (2015), which defined Social entrepreneurship intentions through five factors: commercial experience, social cause, risk taking tendency, resource availability and innovativeness. Additionally, social entrepreneurship intentions were put in the context of NGOs' brand image from key stakeholders' perspective: beneficiaries, volunteers, donors, government bodies and competitors. Brand image elements were adapted from Bennett & Gabriel (2003) and Michel & Rieunier (2011) and defined as reputation and affection. Operationalization of key performance indicators is in accordance with proposed performance measurement models adapted for the nonprofit sector: Public Value Scorecard (Moore, 2003); MIMNOE (Sowa et al, 2004); Unified model of nonprofit sports organizations performance (Winand et al., 2014) and Contingency model (Bryan, 2019) and was shaped to estimate overall nonfinancial and financial performance comparing to competitors in settled goals achievement (realization), attracting new employees and attracting new donations. Representatives of both NOGs expressed high motivation for nonprofit work and have several years of working experience within the organization. Table 1 shows a conceptual framework for benchmarking practices of nonprofit organizations regarding social entrepreneurship orientation, brand image and overall performance.

Table 1: A framework for Social entrepreneurship orientation, brand image and performance

SOCIAL ENTREPRENEURSHIP ORIENTATION (Tan & Yoo, 2015)	
COMMERCIAL EXPERIENCE	• Capability of organization to initiate social entrepreneurship practices • Capacity of organization (in human resources) to initiate Social entrepreneurship programs

SOCIAL ENTREPRENEURSHIP ORIENTATION (Tan & Yoo, 2015)	
	• Capability of organization to investigate and analyze market regarding Social entrepreneurship initiatives • Management capacity and knowledge in social entrepreneurship initiatives • Organization culture that encourages new initiatives toward social entrepreneurship
SOCIAL CAUSE	• Organization's culture oriented toward social mission fulfillment (zero tolerance to mission drift) • Human resources enlargement intentions (particularly base of available volunteers) • Financial resources enlargement intentions (particularly base of new donors)
RISK TAKING TENDENCY	• Organizational culture that regularly includes risk taking activities to achieve goals • Environmental impact on organization results in brave and wide in focus activities • Uncertain situation in the environment results with aggressive activities to achieve goals
RESOURCE AVAILABILITY	• Financial resources sufficiency to start social enterprise • Human resources sufficiency to start social enterprise • Independency in governmental support (in financial resources) to start social enterprise
INOVATIVENESS	• Organization culture that encourages innovativeness in all activities • Organization activities include new approaches to fulfill social goals • Leader market position in shaping new offerings for beneficiaries
BRAND IMAGE (Bennett & Gabriel, 2003; Michel & Rieunier, 2011)	
REPUTATION	• Reputation among beneficiaries • Reputation among volunteers/employees • Reputation among donors • Reputation in governmental bodies • Reputation among competitors
AFFECTION	• Employees/volunteers commitment to organizational goals • Beneficiaries satisfaction and loyalty to organization's offerings • Donors satisfaction and loyalty to organization's offerings
OVERALL PERFORMANCE SELF ASSESSMENT (Kaplan, 2001; Winand et al., 2014)	
REALIZATION	• Financial goals achievement comparing to competitors • Non financial goals achievement comparing to competitors
HUMAN CAPACITY	• New employees attraction capability comparing to competitors • New volunteers attraction capability comparing to competitors • New beneficiaries attraction capability comparing to competitors
FINANCIAL CAPACITY	• New donors attraction capability comparing to competitors • New fundraising methods capability comparing to competitors

Source: Authors

3.3. NGOs' General information

Association MoSt is a non-political, non-profitable organization, established in Split, Croatia, in 1995, with the objective of improving lives of children, youth, poor, and homeless persons. Activities of the association are focused on the development and implementation of local, regional, national and international strategies against at-risk behavior, poverty, homelessness and social exclusion. From the early stage of its existence, association MoST was a synonym for care for the homeless and in the past 25 years was awarded numerous awards on local, regional and national level, many of them representing "best in class" recognition in the NGO sector in Croatia. Today, the association employs 10 full-time employees and has a volunteer base of more than 500 active volunteers covering more than 3600 volunteering hours. Even though the association is branded and widely-known based on its contribution to raising awareness of the public for homelessness and social inclusion (accompanied with providing shelter and half-day shelter services), in the last years the association puts a strong emphasis on another vulnerable category of beneficiaries: children and youth with behavioral problems.

Interventions are focused on informing, advisory services, group work, learning of social and life skills, increasing employment competence levels, independent housing assistance and preparation of personal and work documentation, contacts with potential employers, etc. From the last available financial report (for 2018), MoST realized a surplus of revenues (2,2 million HRK) over expenditures (2,1 million HRK), but relies heavily on donations as a source of income. Roughly, half of the total revenues is generated through the state, regional and local budget donations and half is generated through corporate and individual donations.

Association Duga is a non-political, non-profitable organization, established in Solin, Croatia, in 2011 with the main objective of raising the quality of life of children and young people by providing specific support to children and young people to successfully solve problems they encounter during their growing up and maturity, and encouraging personal growth and volunteer work. Association Duga is addressing problems and needs of pre-school children, children and young people without developmental issues, at-risk children and young people and their families. Duga provides counseling, help in learning school subjects and workshops (drawing, painting, sculpture). Association Duga employs 1 full-time employee, 3 associates and engages 14 volunteers who in 2018 have covered 280 volunteering hours. From the last available financial report (2018) it is evident that expenditures (268.000,00 HRK) exceed revenues (171.300,00) by almost 100.000,00 HRK, and that budget donations are the only source of income. In this regard, association Duga can be treated as a matching rival to MoST organization and their efforts in social entrepreneurship implementation can be compared, through critical benchmarking elements, as well as its impact on brand image perception and overall performance.

4. Research results

The elements for benchmarking are adapted to match the Croatian legislative and operational aspects of NGOs' work. The results are shown in Table 2 for 2019 (before COVID 19 pandemic) and Table 3 for 2020 (during COVID 19 pandemic) and discussed in the following text.

Table 2: Social entrepreneurship orientation, brand image and performance of MoST and Duga organization prior pandemic

SOCIAL ENTREPRENEURSHIP ORIENTATION		
	MoST	**Duga**
COMMERCIAL EXPERIENCE	• "not so good, we are missing experience in social entrepreneurship" (3) • "our employees are good and skilled but full of work, and we have financial issues for hiring new employees" (4) • "basically we know what's going on around us, but we don't have time or money to conduct thorough market research" (4) • "our managers do everything they are capable for, but they also don't have enough experience in social entrepreneurship" (3) • "at this point we are lacking time and money to focus on new social entrepreneurship initiatives, but they are always somewhere in the corner of our minds" (2)	• "it can be said that we have capability to initiate SE practices, but we are missing human resources, a lot" (4) • "again, we have to go back to human resources, young people are not interested for working in NGO, we are not attractive employer they want stability of the workplace – probably legacy from old times" (3) • "we have good market info from beneficiary's perspective, but we do not have capacity to conduct intensive and active market research" (2) • "lack of people is visible even here; due to everyday work our managers are not able to build better competencies" (3) • "we really want to start with social entrepreneurship, the initiative is there, so hopefully we will start doing it" (5)

SOCIAL CAUSE	• "the one thing that we are always doing is keeping in mind that we have to fulfill our mission, we have good and established procedures…we have never experienced problems with mission drift activities…focus is on social impact and not on money making" (5) • "we are putting efforts in attrition of volunteers all the time, and we are very successful in it…particularly proud of enlargement of the high school pupils and students base of human resources that truly understand what we are doing and for whom we are doing it" (5) • "the technique that we adopt to enlarge available financial resources are determined, we are thinking of it a lot, and we have procedures that we are trying to follow/ we are approaching financial resources issue from a strategic perspective/ from the other hand we can't say that initiatives are completely successful" (4)	• "this is unquestionable- all our activities are oriented to our social mission, and all our goals are shaped accordingly" (5) • "we are totally oriented do bust our human resources base – both volunteers and hopefully employees" (5) • "to achieve all things that we planned, we have to enlarge our donors' base/ without it our sustainability will be jeopardized/ all in our organization are aware of that. So, there is the intention, but" (5)
RISK TAKING TENDENCY	• "for the project that we are familiar with we can and will take some risks to gain more benefits, but we are very careful in all new activities ..it can be said that we are playing safe in all new things" (3) • "we can't think of such a situation, except in periods of great natural disaster, but then all people take brave actions..in regular time environmental impact is already calculated in our activities and it is somewhat brave and wide" (3) • "almost not at all, we are focusing on social impact, trying to exploit our strengths and not put our capabilities to the breaking point as this might be counterproductive" (2)	• "as was previously mentioned, we are facing a potential problem of sustainability, from that perspective, all our activities include risk if we want to achieve goals, for example, EU projects, like ESF are a high risk projects as we are under capacitated in all resources "(2) • "we would like to have activities that are very wide in focus –and at the same time, we are worrying that some activities are too much to handle, but we do not have other choices than to be careful/ otherwise our activities would probably include more risk (2) • "this is directly connected to the previous question – so the answer might be the same..we are not so aggressive due to previously mentioned facts about our organization, but, to be honest, even if we assume that we have capacity – I don't think that we would be aggressive in exploitation of possibilities" (2)
RESOURCE AVAILABILITY	• "we are definitively in a position that we have enough financial and material resources to start another social entrepreneurship project" (5) • "problem with employees is that they are already full of jobs, they are multitasking almost in everything and don't have time to start something new" (2) • "almost impossible...we, like all organizations in Croatia are dependent on governmental support, so starting something without it might jeopardize our existence" (2)	• "our current position is that we are in lack of financial resources, it is not so bad, but we have to be careful and manage finances very carefully" (3) • "this could be the most important obstacle to move toward social entrepreneurship in near future, we are missing people, people with know-how." (1) • "this is one of the biggest problems here, not only for us, but for all organizations in Croatia, for example, our dependence on the government is 100% (local and county budgeting) - we have to change it quickly, not just us but complete nonprofit sector" (1)
INOVATIVENESS	• "generally, we are safe players, but when we see that initiative to innovate can gain benefits, all will encourage its implementation" (3) • "the main focus is social impact, so it can be said that innovativeness is the highest in that aspect of our work" (4) • "we can say that we are leaders in our field of activities, looking backward to all programs that we had, it seems like we were the first to introduce it to beneficiaries" (5)	• "we have to be innovative, but not completely, as we don't want to make a mistake that can have an impact on our offering to beneficiaries, so yes, and we know it is important – but no at any cost" (4) • "we think that we are taking our social mission and goals very seriously, so we are trying to be as creative as possible to fulfill it.." (4) • "we don't know if we are leaders, maybe some organizations that are bigger and better known in public are leaders, but, we are proud of our free advisory center – and we think that we were pioneers in that area" (4)

	BRAND IMAGE (Bennett & Gabriel, 2003; Michel & Rieunier, 2011)	
REPUTATION	• "it is hard to evaluate yourself. But, we do not want to be falsely modest, we can say that our image is great, particularly among our beneficiaries and public …governmental bodies respect our work and are always giving support, and regarding other NGOs that we don't see as competitors they are looking for cooperation in many projects. Our donors are loyal and are supporting us according to their possibilities for a long time, and volunteers stay with us for a long time ..to summarize.. our reputation is excellent among all key stakeholders " (5) (5) (5) (5) (5)	• "we have a good reputation among our beneficiaries, at least we think so. Our beneficiaries value our efforts and the service that we provide to them. although it is hard to measure reputation compared to competitors we would say that we are very good,," (4) • "….regarding reputation among volunteers and employees we are as satisfied as with beneficiaries/ we often hear good thing about our activities and enthusiasm in our work that attract new people – the only problem is that there are not enough people that want to volunteer – so reputation doesn't mean much" (4) • "here we have some issues – as the majority of our funds come from government and we don't have donors' base, we think that our reputation is ok, money is the issue, if people would have money they would donate" (3) • "regarding reputation in government bodies there is not much to say, we are struggling and applying to project invitations, and we do it relatively ok, but we are a small organization and thus a kind of invisible to the local, county and state authorities / so let's say that we are too small to have a reputation" (1) • "our reputation among our competitors is not as good as we would like it to again, relatively small with not so visible impact although our programs are good, also, we are a kind of out of the sight and there are much stronger organizations in Split which is a much bigger city" (2)
AFFECTION	• "as affection is connected to reputation, it can be said that we would not have such a great reputation if there is no affection, our employees and volunteers are very attached to our goals, they are doing everything with heart and soul..so it reflects on our beneficiaries and their needs as well" (5) • "…and this is the main reason why our donors are supporting us, even in hard times for themselves / when there is not enough money to donate, they are offering material resources instead…we think it's great" (5)	• "problems that arise from reputation impact the affection of our key stakeholders, but we estimate that our beneficiaries are loyal and satisfied with our offering, they are not so easy on changing providers and majority "stick" with us (4), • "with donors is a different story – we don't have the base of donors so we can't say that they are loyal and satisfied, here we think about individual donors and firms, not counting governmental bodies in this sources of funds" (2)
	OVERALL PERFORMANCE SELF ASSESSMENT (Kaplan, 2001; Winand et al., 2014)	
REALIZATION	• "we are happy that our financial goals are completely achieved – but we are careful in shaping, so we have realistic goals and it is possible to achieve them and we are performing better than similar organizations" (5) • "same can be said for nonfinancial goal, only, here we are a little bit more ambitious..despite it..we achieved our non financial goals better than our competitors…" (5)	• "looking at the achievement of our goals comparing to competitors there is not much to say/ it could be better, or maybe we put our goals too high, both in financial, as we are in a lack of money" (2) • "and non financial as we didn't achieve all that we hoped for..from our perspective, some of our competitors probably did it better than us" (2)

HUMAN CAPACITY	• "we have capacity to attract new employees on a much higher level than our competitors" (4) • "luckily, the same stand for volunteers, we are well known and people are familiar with our work, so if someone wants to volunteer – we are often the first choice, but this pool of potential volunteers is not so big- this is a larger social problem " (4) • "regarding beneficiaries, we think that for this key stakeholders we are, again, first choice /our experience, and good reputation keeps us on the top of the list of potential service providers to beneficiaries " (5)	• "here we can say the same thing as for reputation among potential employees, from one side we don't have enough money to hire someone who is professional and from the other people are not so interested in working for small NGO… (3) • "we think that our capability is ok, but there is not much to offer if we don't achieve some of our goals in the future, so maybe our competitors are attracting volunteers better than us but we are certain that they are struggling regarding general volunteerism problems in Croatian society… (3) • " as we were pioneers in counseling service, in our community people know that, so we think that our capacity, based on established program, is really good, there are organizations that can offer and therefore attract beneficiaries with something better than us, but that kind of organizations are more exception than a rule" (4)
FINANCIAL CAPACITY	• "we have a good donors base – and we have a good relationship with them, our donors often are included in our activities, and they are spreading our good reputation, so our capacity to attract new donors comparing to competitors is great, but the problem is similar like with volunteers – the pool of potential donors is sot so big…and their resources are limited..." (5) • "let's say that we are approaching to fundraising intuitively, we are learning from previous experiences, and due to our competencies and unformal body of knowledge we can adapt and exploit new fundraising channels by applying new fundraising methods…Still we do not think that we are experts and our capacity can be improved comparing with countries where fundraising is more developed than in Croatia. If we compare ourselves with domestic organizations, then, once again our capability is better" (4)	• "this is one of our major problems and in future we have to take it very seriously and try to shape offerings for our potential donors so that they can really understand what is in it for them and not just giving money to charity /at this moment we think that our competitors are doing it better than us..much better" (2) • "we do all our fundraising activities intuitively, based on attempt and mistake approach, but the good thing is that we know that we have to make it more professional and build capacity to conduct new fundraising methods that will improve our performance in this area and comparing to competitors we think that almost all organizations are in this same situation-so we all are almost even" (3)

Source: empirical research

Comparing qualitative data from two NGOs regarding social entrepreneurship orientation, brand image and overall performance, some interesting findings should be emphasized. Firstly, regardless of size and scope of organizations, both are showing very strong intention toward social entrepreneurship in following elements: Commercial experience (Total score: MoST = 16 of 25; Duga =17 of 25); Social cause commitment (Total score: MoST = 14 of 15; Duga =15 of 15) and Innovativeness implementation (Total score: MoST = 13 of 15; Duga =12 of 15). Simultaneously both organizations are showing less tendency toward Risk taking (Total score: MoST = 8 of 15; Duga = 6 of 15) and are estimating problems in Resource availability for social entrepreneurship (Total score: MoST = 9 of 15; Duga = 5 of 15). The last element is the only one in which differences could be result of the size and the scope of all organizational programs and actions. It can be concluded that both NGOs have good potential for future development in social entrepreneurship orientation and that there would be no internal obstacles for future development. On the other hand, a relatively big gap is visible comparing Brand image elements; Reputation among key stakeholders (Total score: MoST = 25 of 25; Duga =14 of 25) and Affection (Total score: MoST = 10 of 10; Duga =6 of 10). As explained in Table 2, Duga is, self-perceived, in an inferior position comparing to MoST, and some serious action to improve current position should be taken. Oppositely, MoST is showing an excellent brand image that can be a good foundation for all future activities, including social entrepreneurship

initiatives and they have enough strength in their brand image to implement more risk taking activities oriented toward social entrepreneurship. Self-assessment of overall performance compared to competitors was the hardest thing to estimate according to both NGOs representatives. A common false assumption that the application of business practices is a betrayal of nonprofit principles slips through their answers. For example, both organizations are very careful in estimating their own advantage comparing to others and are trying to explain that all of them are doing great and important work, which is, without a doubt, unquestionable. In Realization of financial and non-financial goals compared to competitors big difference can be noticed (Total score: MoST = 10 of 10; Duga=4 of 10). This difference could be, once again, result of their size, scope, and, probably, brand image. Regarding Human (Total score: MoST = 13 of 15; Duga=10 of 15) and Financial capacity (Total score: MoST = 9 of 10; Duga=5 of 10) same differences, derived from the same assumptions, can be noticed. Both organizations declared that it was difficult to be objective and not over or underestimate their performance as there are no reliable data to compare in any set of performance indicators in the nonprofit sector in Croatia. Therefore, all their evaluations are subjective, as expected. Conclusively, organizations show good potential for social entrepreneurship, and the role of brand image is used in their activities in an intuitive level and not as an integral part of their strategic approach to social entrepreneurship initiatives that can improve their performance and strengthen their position.

Due to a new, unexpected situation with the COVID-19 pandemic, that makes the effort for sustainability for NGOs even harder, another in-depth interview was conducted in 2020 with the same representatives of two NGOs that participated in research in 2019. In this phase, respondents had to evaluate all previously elaborated and discussed elements of social entrepreneurship intentions, brand image and overall organizational performance, estimating whether they had improved or worsen. Additionally, they had to point out all elements that have changed so drastically, and that will impact their work even in post-COVID-19 pandemic times. The results are shown in Table 3.

Table 3: Social entrepreneurship orientation, brand image and performance of MoST and Duga organization in post-COVID-19 pandemic times

	SOCIAL ENTREPRENEURSHIP ORIENTATION					
	MoST		**Diff.**		**Duga**	**Diff.**
	Prep	**COVID-19 pandemic period**		Prep	**COVID-19 pandemic period**	
COMMERCIAL EXPERIENCE	(3) (4) (4) (3) (2)	• "the same. Although we had some plans to expand to social entrepreneurship – now it's on hold" (3) • (4) • "it is hard to know what to expect in this situation, our data are not as good as used to be" (3) • (3) • (2)	0 0 -1 0 0	(4) (3) (2) (3) (5)	• "it worsens…all our plans are focused on staying alive" (3) • (3) • "now nobody has good info and can't predict what will happen next, so all research will be waste of time and money" (1) • (3) • "now, everything has to wait for better times" (3)	-1 0 -1 0 -2
			-1			-4

SOCIAL CAUSE	(5) (5) (4)	• "..surprisingly still doing well, not so public, less interaction, but well.." (5) • "our intention is the same, we would like to expand the base of donors but are aware of the situation." (4) • "intention is the same, but it will have to wait" (4)	0 -1 0	(5) (5) (5)	• "not changed at all, we are even more determined to fulfill our social mission" (5) • "intentions are the same, but" (5) • "same thing, we really want to, but" (5)	0 0 0
			-1			0
RISK TAKING TENDENCY	(3) (3) (2)	• "..there is definitely drift in risk taking tendencies…now at this uncertain times risk became undesirable.. (2) • "..not brave, just smart and patient, wait.. (2) • "at first maybe the answer would be not at all, but we are more aggressive in some basic things– we have to be in order to survive…(3)	-1 -1 1	(2) (2) (2)	• "..all our activities are now framed to include as less risk as possible.. " (1) • "..it is hard to estimate, let's say that nobody sees it coming. So we are holding up, not taking brave actions… (1) • "..ok internally, maybe we are more aggressive in order to achieve goals as environmental impact is too high." (3)	-1 -1 1
			-2			-2
RESOURCE AVAILABILITY	(5) (2) (2)	• "It is impossible to evaluate – we had to make a lot of adjustments due to pandemic, definitely our resources are not sufficient at this moment.." (3) • "our employees are now focused on more activities than ever; multitasking is in everything they do, so we don't have the capacity for it" (1) • "not at all…now we are depending on support from government more than we want to" (1)	-2 -1 -1	(3) (1) (1)	• "it wasn't so good in the previous period. Now it's even worse (2) • "even harder" (1) • "not at all independent…unfortunately" (1)	-1 0 0
			-4			-1
INOVATIVENESS	(3) (4) (5)	• "culture stayed the same…but the situation is that innovativeness is shown in everyday activities" (4) • "with changed rules by which we all are living now, we definitely are more innovative in our work and we fulfill our goals that way…" (5) • "fortunately, still leaders, this impact all sector, so the roles are not changed" (5)	1 1 0	(4) (4) (4)	• "now we have to be innovative more than ever…and we are" (5) • "since we are cut off of some of our regular activities – we have to implement new innovative activities in our work…it is less in scope but more in efforts that we have to put in it" (5) • "our position stays the same, as all of us are adapting and offering same things in new ways…there is no change" (4)	1 1 0
			2			2
		BRAND IMAGE (Bennett & Gabriel, 2003; Michel & Rieunier, 2011)				
REPUTATION	(5) (5) (5) (5) (5)	• "simply don't know what to say..it probably stays the same among as we are all together in this."(5) (5) (5) (5) (5)	0 0 0 0 0	(4) (4) (3) (1) (2)	• (4) • "we can't reach to our volunteers so freely as we used to..so it might some impact on our reputation " (3) • "comparing to pre-pandemic period nothing changed..still, even donors now have some more important thing to think of..and it might impact their opinion and therefore ours and all NGOs reputation" (2) • (1) • (2)	0 -1 -1 0 0
			0			-2

AFFECTION	(5) (5)	• (5) • "donors are not so supportive as before, but mostly due to their own struggle to survive"(4)	0 -1	(4) (2)	• (4) • "it wasn't great earlier, so now it is probably the same" (2)	0 0
			-1			0
OVERALL PERFORMANCE SELF ASSESSMENT (Kaplan, 2001; Winand et al., 2014)						
REALIZATION	(5) (5)	• "we cannot predict what will happen till the end of the pandemic, for now, there are slight oscillations, but still doing very well in financial goals" (5) • "here we have more impact of pandemic, some of our recognizable actions had to be stopped due to restrictions and it impacts our activities, but we adapt and make other actions that were great , still we had ambitious goals so maybe we underperformed a bit" (4)	0 -1	(2) (2)	• "we have the same problems as before, now problems are just more visible than ever but all organizations are facing the same" (2) • (2)	0 0
			-1			0
HUMAN CAPACITY	(4) (4) (5)	• "we are managing it for now, and performing ok, maybe even better than before comparing to competitors, we have a lot of inquiries for volunteering due to the empathy that is shown in society" (4) • (5) • (5)	0 1 0	(3) (3) (4)	• "we are still holding on, basically all have the same problem so the situation is not so changed if we compare organizations within the sector" (3) • "we are aware that volunteers are hard to get these days due to everything, but, still…it is same for all " (3) • (4)	0 0 0
			1			0
FINANCIAL CAPACITY	(5) (4)	• "if you transfer some of your capacities in one direction there must be some impact, we have lost some of our capacities to attract donors and we hope it is only for short time" (4) • (4)	-1 0	(2) (3)	• "we are performing the same in this element, and we can think that we are lucky…due to all circumstances it could be much worse" (2) • (3)	0 0
			-1			0

Source: empirical research

Social entrepreneurship orientation elements in pandemic period changed analyzing difference of total score in all elements (pre-pandemic – pandemic period), as follows: Commercial experience (MoST=-1; Duga=-4); Social cause (MoST=-1; Duga=0); Risk taking tendency (MoST=-2; Duga=-2); Resource availability (MoST=-4; Duga=-1); Innovativeness (MoST=2; Duga=2). The major change was shown in resource availability for MoST and commercial experience for Duga. But, according to their answers, these changes are estimated on the presumption that no one can predict for certain exact end of the pandemic. In these circumstances, it is reasonable that both organizations showed less risk taking tendency (-2) and, not surprisingly, more innovativeness in their work (2). An increase in innovativeness also shows one of the basic determinants of successful NGOs – fast in action and adaptation to environmental impact in challenging times. It can be concluded that social entrepreneurship orientation had decreased in pandemic times, but more due to external impact and careful planning of limited resources exploitation, than ad hoc approach with no clear plan what to do in chaotic times. Brand image difference changed slightly in pandemic (MoST=-1; Duga=-2), and this is not (for now) reason to be worried, as it can be considered as the impact of external factors with limited duration. Results of overall performance self-assessment show a higher pandemic impact on MoST, than Duga. It can be explained with their size and scope and, thus,

more activities that had to be reduced. For example, the well-known action of MoST, annual auction with a lot of attendees and exhibitors collecting funds for a homeless shelter that include social interactions and a lot of people involved – had to be canceled.

5. Conclusion

This study investigates social entrepreneurship potential through social entrepreneurship orientation, brand image, and performance of nonprofit organization – it is argued that stronger brand image facilitates resource acquisition process which in turn affects positively value-generating capacity and overall performance. For that purpose, two comparable Croatian NGOs that are showing intentions toward social entrepreneurship were subjected to an in-depth analysis whereas key variables in qualitative research captured social entrepreneurial intentions, brand image, and overall performance. Also, COVID 19-pandemic effects are included in this study. The results indicate that a stronger brand image boosts social entrepreneurship orientation as it encourages NGOs to implement more risk taking activities (that bring higher rewards and will reflect in overall performance), but are less reluctant to do so in post-COVID-19 times. Research results indicate that brand image can contribute to the superior realization of financial and non-financial goals compared to competitors, and in crisis situations (post-COVID-19 pandemic times) can be a valuable assistance in compensating performance deterioration by increasing innovativeness (strong brand image and market position encourage experimentation). The presented study has limitations primarily in narrow scope – only two NGOs from one country were involved in in depth interviews, with limited experience in social entrepreneurship. Due to the pandemic, repeated interviews provided insight into organizational changes due to globally challenging times. In future studies, more NGOs with social entrepreneurship experience and defined brand image value should be included. Future qualitative studies could include focus groups of experts in social entrepreneurship from NGOs in order to make a framework for measurement instrument development taking into relation social entrepreneurship, overall performance and role of brand image in the nonprofit sector. To summarize, results of this study provide a good starting point for further investigation of marketing role in social entrepreneurship success regarding sustainability.

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A scientific paper

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LOVERS AND ENTHUSIASTS: THE ROLE OF VOLUNTEERS IN SOCIAL INNOVATION PROCESS – AN EXPLORARY ANALYSIS

ABSTRACT

Social innovation is a topic that has been gaining more expressiveness, with an exponential increase in research. Social innovations are social in their ends, because they are motivated by the objective of satisfying a social need and are social in their means, because they allow a stronger social capacity to act and are generally, but not exclusively, disseminated through organizations whose primary objectives are social (Mulgan, 2019).

One of the factors that most contributes to the social innovation process is the role of volunteers, as they may identify social needs and are praised for introducing new ways of thinking and working in organizations (Wit, Mensink, Einarsson & Bekkers, 2017), however, according to the same authors, it is not completely clear how volunteers play an active role in the process of social innovation. What is known is that their intrinsic motivations are related to contributions to social innovation (Reznickova & Zepeda, 2016).

In this way, our paper has two main objectives, the first one is designing a checklist that can help identify a certain project or organization as a social innovation project; and a second objective that is related to the comprehension of volunteer role and impact in a certain social innovation project. Being this paper an exploratory analysis, based on the literature, we developed a check list and we use document analysis as a source of information and apply it to our case studies, and, in a later stage of our research, interviews will be conducted to understand volunteer's role and impacts on these projects.

Key words: *Social Innovation; Volunteering.*

Acknowledgments

1. Introduction

Social change becomes increasingly necessary to provide answers to today's social problems, and the pace of social innovation may even become higher than that of technological innovation (Phillips, 2001). The concept of social innovation has been gaining much interest in the academic literature for addressing social issues (Rusciano et al., 2020), and there is an exponential increase in research in this area (Dias & Partidário, 2019). In addition, the association between the concept of social innovation and volunteering is still poorly explored in the literature. Thus, our paper aims to better understand this association and show the contribution that volunteers can have in social innovation processes, since it is important for the management of organizations to understand the motivations that lead individuals to donate their time to a specific organization, even if only occasionally, and to remain within the same organization (Ferreira et al., 2008). So, we intend to deepen the knowledge about the concept of social innovation and volunteering, as well as to understand the role of volunteers in social innovation projects. To this end, an analysis will be carried out through case studies, the first case study is a social innovation project related to COVID-19 and the second case study is related to an organization that brings together volunteers who are specialized in data analysis and help several non-profit organizations (NPOs) with data analysis.

2. Literature Review

2.1. Social Innovation

For Mulgan (2006), social innovation refers to innovative activities and services motivated by the objective of satisfying a social need and which are predominantly disseminated through organizations whose primary objectives are social. In this way, social innovation offers new solutions, which can consist of products and services, but also new models and processes (Cattivelli & Rusciano, 2020). The starting point for innovation will be the recognition of a need that is not being met, coupled with a new idea of how this need might come to be met (Mulgan, 2006). In other words, social innovation refers to new ideas that work in achieving social objectives (Mulgan et al., 2007; Rusciano et al., 2020), to provide answers to societal needs (Rochester, 2013) and produce lasting social change (Phills et al., 2008).

In this way, social innovation becomes an imperative when problems escalate and when systems are not working properly (Mulgan et al., 2007). To solve these problems, a new solution is needed that is more effective, efficient, sustainable, or fair than existing solutions and for which the social value created reverts primarily to the society as a whole and not just to individuals (Phills et al., 2008; Bock, 2012).

On the one hand, it is possible to affirm that social innovation corresponds to the creation of long-term social value, since it is concerned with social justice for society as a whole. Furthermore, it gives rise to innovative solutions that enable social change (Rusciano et al., 2020). In this way, social innovation is able to generate benefits for society and also increase the ability of society to act (Rusciano et al., 2020). In addition, social innovation promotes social inclusion to respond to social needs and challenges while creating changes in the system in which this process occurs (Dias & Partidário, 2019). In this sense, social innovation can be seen as a strategy for smart, sustainable and inclusive growth, supporting social change processes and also aimed at supporting the introduction of new solutions in response to the current needs and urgent challenges of the most vulnerable groups, promoting social benefits (Torre et al., 2020).

For Mulgan (2019), there is a simple definition that describes social innovations as innovations that are social in both their ends and means. They are social in their ends because they are motivated by the objective of satisfying a social need. They are social in their means because they enable a stronger social capacity to act and are usually, but not exclusively, disseminated through organizations whose primary objectives are social. Therefore, the ultimate goal of social innovation will be to assist in the creation of better futures, as society can reap the benefits emerging from this process (Pol & Ville, 2009), as social innovation projects provide social well-being and value in communities (Martins et al., 2020).

So, our first proposition is:
P1 – how can we identify a project/organization as a social innovation project

2.2. Volunteering and Social Innovation

Volunteers contribute to the social innovation process by recognizing new opportunities for the organizations where they volunteer (Monllor & Attaran, 2008) and successfully transfer some skills to other members of the organization (Reznickova & Zepeda, 2016). In addition, volunteers are particularly likely to operate as innovators and agents of social change (Wit et al., 2017). In this sense, great innovation ideas can arise from motivated and proactive people who insist on bringing about social change by taking the risks that may come with it (Mulgan, 2006).

It is also noted that volunteers have extensive social networks due to their involvement with various organizations, through which they can identify and report on social needs (Wit el al., 2017), which is the starting point for social innovation (Mulgan, 2006). When volunteers are provided with a considerable level of autonomy and local ownership, they can be motivated to contribute to projects that go beyond their actual duty, while they can mobilize the community for social innovation projects (Wit et al., 2017).

In the dissemination phase of the projects, volunteers can also be seen as the "voice" of the organization, as they are mostly the ones who participate in campaigns and who are in contact with the public (Wit et al., 2017). In addition, organizations can also stimulate the ability to generate ideas by giving volunteers autonomy and the possibility to actively participate in the decision-making process. At the same time, they are in this way stimulating volunteers' sense of belonging and commitment (Wit et al., 2017). If the organization is not receptive to new ideas, this can ultimately discourage volunteer participation.

It is important to distinguish between informal and formal volunteering. Informal volunteering is the most common and corresponds to actions that are unmanaged and occur in an interpersonal context, such as helping neighbors or the elderly (Parboteeah et al., 2004). In turn, the formal refers to similar behaviors, but developed within the framework of an organization.

Especially at a time like the present, due to the pandemic caused by the COVID-19 virus, it makes even more sense to study informal volunteering and how voluntary actions can give rise to new social innovation projects or encourage the development and growth of existing projects. Informal volunteering, especially in response to crises, is used as a quick, short-term response (Trautwein et al., 2020), constituting a reaction without an organizational context and without implying a specific orientation. These volunteers are usually motivated by feelings such as sympathy and empathy, and their actions are triggered based on individual

decision-making and their own resources. It is these kinds of actions that often give rise to innovative social responses capable of solving problems that arise in crisis situations, enabling lasting social change and the satisfaction of existing social needs. With the restrictions imposed by the pandemic, solidarity and volunteering actions are increasing significantly, fostering new initiatives (Cattivelli & Rusciano, 2020).

In this sense, social innovation initiatives imply a new philosophy of social intervention, to the extent that people do not depend only on the actions developed by the State, but consider that themselves can be the key to improving their own situation, as well as that of the society as a whole (Cattivelli & Rusciano, 2020). In this way, it is possible to show the relationship between the concept of social innovation and volunteering, since it is from voluntary actions that important social innovation projects can be born. Furthermore, since volunteers are characterized as motivated and committed people, their self-organized actions may end up increasing the capacity of communities to respond to locally identified problems (Cattivelli & Rusciano, 2020).

Regarding volunteers' motivations, several studies indicate that volunteers' individual behavior and their motivational structures are ultimately related to their ability to adopt and develop social innovation measures (Dietrich et al., 2016). In addition, the satisfaction of needs and intrinsic motivation of volunteers are associated with the creation of social innovation and the generation of new ideas (Reznickova & Zepeda, 2016).

Social innovation projects show how persistent and dedicated people can achieve their goals against all odds and serve as reminders of the courage and personal sacrifice that always accompany social change (Mulgan, 2019). It makes sense to relate this issue to the motivations and role of volunteers in social innovation projects, as people who volunteer are characterized by their dedication and commitment to the projects in which they are included (Wit et al., 2017) and they may be motivated to contribute to the projects with actions that go beyond their real roles. Social change is portrayed as being driven by a very small number of energetic and impatient individuals (Mulgan, 2019) and these are the characteristics that may be part of a volunteer's profile. Therefore, it is these types of characteristics that can make a volunteer a social innovator capable of developing new projects or participating in existing projects in order to contribute to their success and growth.

So, our second proposition is:
P2 – what is the volunteer role and impact in the social innovation project

3. Research Methodology

We use a qualitative analysis through two case studies: (1) a project related to COVID-19, namely the Community Support Association Tech4COVID19 (APCT); (2) Data Science for Social Good Portugal (DSSG) which aims to help NPOs through data analysis.

Initially, we intend to verify, through a checklist, if these two projects can be considered as social innovation projects, taking into account the concepts presented in the literature review, that have helped us to build a check list verification (Table 1).

Table 1: Verification Checklist

Check Item
Innovative activities and services motivated by the objective of satisfying a social need (Mulgan, 2019; Rochester, 2013)
Organization whose main objectives are social (Mulgan, 2019)
Offers new, more effective problem-solving solutions (Cattivelli & Rusciano, 2020)
Increases society's capacity to act (Murray et al., 2010; Rusciano et al., 2020)
Creating social value for society as a whole (Phills et al., 2008; Bock, 2012)

Source: Own Preparation

So, we use document analysis as a source of information and, in a later stage of our research, interviews will be conducted to understand the motivations of the volunteers involved in these projects.

APCT is an association that emerged in 2020 with the social objective of promoting and encouraging cooperation between entities, individuals and legal entities, public and private, linked to the technological sector, with a view to supporting the community in combating the COVID-19 pandemic (SARS-CoV-2). Initially it acted as a movement without legal personality, however, due to its growth, it was necessary to create a formal entity to formalize partnerships and raise funds. So, APCT was created as a private, non-profit association set up for an indefinite period of time, whose objective is to be the formal vehicle to support the community and the official projects of the Tech4COVID19 movement. With the constitution of the association, it became possible to receive donations, sponsorships, and other funds in a legal and transparent way. The association was born spontaneously, by the hand of the Portuguese technological community and differentiated itself by its "Human to Human - H2H" character, intending to mobilize efforts and inspire the Portuguese to join together to make an effective difference in the fight against the pandemic caused by COVID-19.

DSSG is a non-profit organization that brings together data professionals and institutions working with social projects. This organization presents itself as an open community of data scientists, lovers and enthusiasts who seek to solve problems of various institutions. Its activity is aimed at non-profit, non-governmental and governmental organizations, helping to harness the power of their data to improve their impact on the community and, consequently, improving society as a whole. Its mission is to make the connection between data experts and several institutions working on projects with social impact, helping them collect and transform data into additional knowledge to increase their impact on society and ultimately improve the future of society with more current data. In this way, institutions will benefit from the most effective use of data to solve their needs and challenges.

4. Results – Presentation and Discussion

4.1. APCT

Currently, APCT is an association with more than five thousand volunteers from the most varied areas (engineers, scientists, health professionals, among others) and continues to unite Portuguese talent with the aim of helping the population overcome the challenge imposed by the pandemic through the creation and implementation of several projects in different areas. Thus, platforms for raising funds to purchase medical equipment, online consultations, accommodation for health professionals, online shopping, and delivery and health tracking applications are some of the solutions created by the association.

Figure 1: Update APCT Data

Source: https://tech4covid19.org/
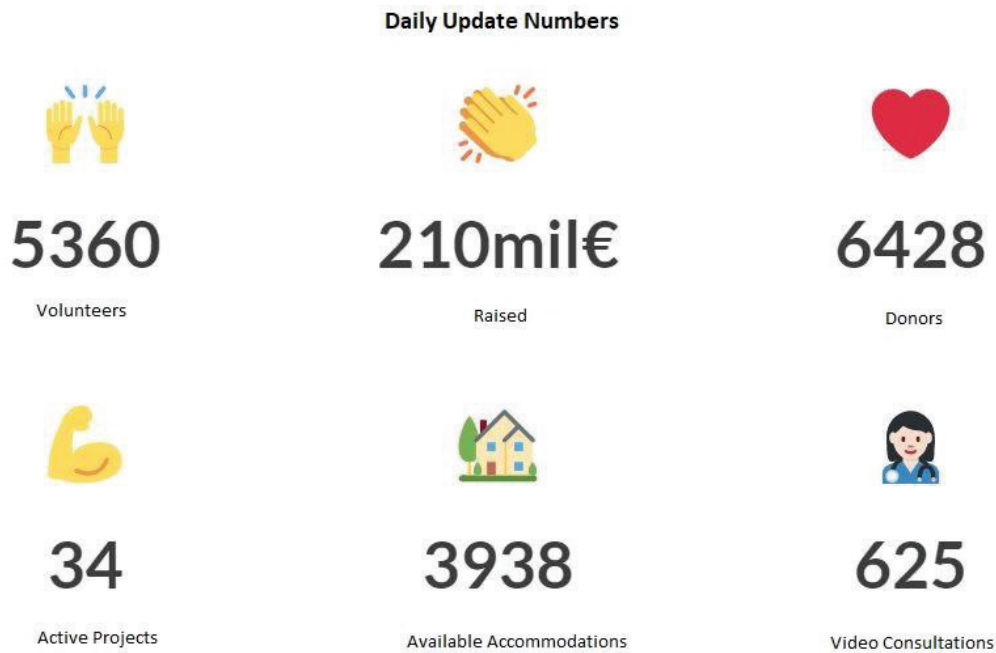
By analysing figure 1, it is possible to verify that since the beginning of its activity the association has already raised 210,000€ with the support of more than 6400 donors, with 34 active projects. In addition, it is possible to understand the numbers corresponding to the accommodation available for health professionals and the video consultations carried out through this project.

Therefore, the technological innovation developed by the association is evident, but we also intend to verify whether the #tech4COVID movement can be considered a social innovation project. To this end, the following checklist (Table 1) is presented, in which we intend to investigate this possibility.

Table 2: Verification Checklist – APCT

Check Item	Checking
Innovative activities and services motivated by the objective of satisfying a social need (Mulgan, 2019; Rochester, 2013)	✓
Organization whose main objectives are social (Mulgan, 2019)	✓
Offers new, more effective problem-solving solutions (Cattivelli & Rusciano, 2020)	✓
Increases society's capacity to act (Murray et al., 2010; Rusciano et al., 2020)	✓
Creating social value for society as a whole (Phills et al., 2008; Bock, 2012)	✓

Source: Own Preparation

Through the analysis of this checklist, it is possible to confirm P1 and to affirm that this can be considered a social innovation project, since it mainly aims at the well-being of society as a whole, through the creation of new solutions to the social needs caused by the pandemic

currently experienced. Since the pandemic crisis has exposed some needs, it is through social innovation that it becomes possible to provide answers to them.

In this sense, all the projects developed by the association are directed towards creating real impact on society. The creation of, for example, telemedicine services and assistance to patients by video call are innovative ideas that arise to meet the needs arising from the pandemic. On the other hand, the association has created projects in the areas of support to health professionals, getting temporary and free accommodation for professionals who are fighting the pandemic on a daily basis, namely the Rooms Against Covid project, which is one of the main projects with the greatest impact on society and more successfully.

This is also a good example that combines the two concepts under study: Social Innovation and Volunteering, and help us to answer to P2, since this association is mainly composed of volunteers, and it is possible to characterize this volunteering as informal, it is a project that it's born from an unmanaged voluntary action, in which there was not initially a formal organization. It is a project that arose spontaneously to respond to emerging needs and only later was the APCT formally established. The role of volunteers is evident because they are, in fact, the workforce of the organization, which shows us that people interested in volunteering can organize themselves into solidarity networks in order to help the community and society as a whole, a factor that characterizes a process of social innovation. In this case, volunteers have worked on developing innovative solutions to mitigate the consequences caused by the pandemic.

At a later stage, we intend to better understand the role of volunteers and their impacts through interviews with some volunteers who are part of the project.

4.2. DSSG

DSSG is a non-profit organization that brings together the volunteer work of several specialists with NPOs that need help to improve their data management. In this way, it helps beneficiaries by optimizing their resources and maximizing their efficiency. The specialists are from various areas such as informatic, management, marketing, communication, and engineering, among others.

This organization consists of a leadership team, a group of volunteers, a group of advisors, and an ethics committee. The leadership team is responsible for the following functions:
1) Volunteer Management: volunteer recruitment, managing the relationship with volunteers and organizing events for volunteers;
2) Communication: develop and implement the communication strategy, manage the communication channels (website, blog, social networks) and support volunteers in communicating the results of their projects;
3) Partner and Sponsor Management: ensure financial stability, manage the relationship with partners and sponsors, and define a sustainability strategy;
4) Beneficiary Management: manage the relationship between volunteers and beneficiaries, define the beneficiaries and the projects to be carried out according to the existing problems.

The projects developed by the DSSG can have variable durations, depending on the type of problem and the existing challenge. There are already three completed projects of longer duration. Table 2 presents a summary of the longer duration projects developed to date.

Table 3: Longer Duration Projects

Beneficiary	Project	Objectives	Duration	Team Size	Results
Rotaract Santo Tirso	Exploratory Analysis of Data from the National Fundraising for the Portuguese League Against Cancer in Santo Tirso	- Increase the credibility of Rotaract; - Improve the fundraising process.	December 2018 - May 2019	4 members	- Heatmap with information about the amount collected in each parish; - Financial results analysis report; - Better exposure of the financial results, which is expected to result in a greater allocation of resources.
Portuguese Zoophilic Association (PZA)	Identification of causes and optimization of waiting times for appointments	- Dashboard with key metrics visualizations; - Forecast of the number of appointments.	February 2020 - November 2020	9 members	- Installation of a dashboard in the PZA building; - Forecasting the number of appointments per day for the next 15 days. - Analysis of the main variables that influence the duration of a appointment.
CAIS Association	Evaluation and communication of the social impact of CAIS Magazine in Portugal	- Analysis and validation of data collected by CAIS; - Descriptive analysis of the salespeople profile.	April 2020 - December de 2020	10 members	A report presenting with the analyses performed that was delivered to the CAIS and served as the basis for an awareness campaign launched to celebrate the 25th anniversary of the CAIS.

Source: Own Preparation

In addition, there are also 4 short projects developed by the DSSG, which aim to process data related to various problems in society, but which do not have a specific beneficiary.

Table 4: Short Projects

Project	Objectives	Duration	Team Size	Results
SICO-eVM data (mortality surveillance platform)	Creation of a set of files and data dictionaries with relevant sources for studies of the impact of COVID-19 on mortality in Portugal.	July 2020 – August 2020	3 members	- Create a script to extract data from the SICO-eVM portal and a data dictionary with the description of each variable; - Create daily update and test scripts to test the validity of the data and the functioning of the script.
Data on COVID-19's impact on the labour market	Creation of a set of files and data dictionaries with relevant sources for studies on the impact of COVID-19 on the labour market in Portugal.	July 2020 – August 2020	3 members	- Create a file with relevant data (Leaves for isolation, layoff requests, redundancies); - Create a data dictionary with the meaning of each variable; - Create daily update and test scripts to test the validity of the data and the functioning of the script.

Project	Objectives	Duration	Team Size	Results
Sentiment analysis throughout the pandemic period	Creation of a timeline that reflects the emotional state of the Portuguese population and integrates information about the measures that may have contributed the most to this state.	July 2020 - October 2020	3 members	- Selection of relevant data sources for population sentiment analysis; -Development/use of pre-existing algorithms for classification in terms of positive/negative feelings; - Presentation of results through relevant and explicit visualizations.
Domestic Violence Data Observatory	Repository with data on domestic violence in Portugal, if possible, with automatic update mechanisms.	January 2021 (developing)	5 members	Developing

Source: Own Preparation

As in the first case study, and in order to verify P1, the checklist used previously is presented and applied to DSSG.

Table 5: Verification Checklist – DSSG

Check Item	Checking
Innovative activities and services motivated by the objective of satisfying a social need (Mulgan, 2019; Rochester, 2013)	✓
Organization whose main objectives are social (Mulgan, 2019)	✓
Offers new, more effective problem-solving solutions (Cattivelli & Rusciano, 2020)	✓
Increases society's capacity to act (Murray et al., 2010; Rusciano et al., 2020)	✓
Creating social value for society as a whole (Phills et al., 2008; Bock, 2012)	✓

Source: Own Preparation

Through the analysis of the checklist, it is possible to verify that we are facing a case of social innovation, because the projects and the activity developed by the organization are mainly aimed at solving problems through measures with social impact and that aim to improve society as a whole. In this sense, the projects are created with the intention of creating real impact on society.

This is also an example that combines the two concepts studied throughout this article, because it relates the concept of social innovation with the issue of volunteering. Considering P2 we can say that the work of volunteers and the role they play in the development of this organization's activity is evident, since all its work is developed by volunteers. The relationship between the two concepts is clear, because we have volunteers developing innovative solutions to real problems existing, with the aim of improving organizations impact on society.

In a later stage, we intend to better understand the role these volunteers play and their motivations through interviews with some volunteers who are part of the project.

5. Conclusions

Through the literature review carried out throughout this article, it can be seen that social innovation is an increasingly current and growing topic, and that it is an important means of implementing changes and transformations at the social level.

At the same time, this article shows, through two real case studies, the association between the concepts of social innovation and volunteering. This symbiosis is still little studied, but when explored, it proves that volunteers are able to introduce new ideas and changes in society, with the aim of improving the well-being of society as a whole.

These examples corroborate the literature review carried out, showing that persistent and dedicated people (Mulgan, 2019) can achieve significant results in creating social innovation and generating new ideas (Reznickova & Zepeda, 2016). Their motivation, dedication and commitment mean that volunteering can be seen as an asset in third sector organizations and in the creation of new projects.
At a later stage, by studying the motivations of volunteers involved in various projects, it will be possible to deeply understand the role and impacts that volunteering can have in the creation of solutions that give rise to new social innovation projects.

Every research has limitations, in our work (i) the existence of few authors relating the two concepts makes our approach more difficult; (ii) the fact that we consider only online platforms narrow our general conclusions. Future studies may try to overcome these limitations through a better understanding about the work done by the volunteers that are particularly related with social innovation projects, measure its contribution, identify main motivations and barriers; the identification of more case studies that link the two concepts, including the international scenario; and outline strategies that can serve as models of good practice for other projects.

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ENTREPRENEURIAL ORIENTATION, MARKET ORIENTATION AND BUSINESS PERFORMANCE IN CROATIAN COMPANIES

ABSTRACT

In recent decades, entrepreneurial orientation and market orientation have received much attention when researching strategic management literature. Many scholars agree that both orientations are crucial to increasing any company's success in the marketplace. This paper aims to examine the relationship between entrepreneurial orientation (EO), market orientation (MO) and business performance (BP) on a sample of 158 Croatian export companies. The statistical methods of descriptive and correlation analyses were applied to process the collected data, and appropriate tests were used to examine the proposed hypotheses. The relationships between the components of entrepreneurial orientation, market orientation, demographic characteristics (such as a company' age, size, export orientation, type of ownership) and business performance indicators were examined. Likewise, the importance that companies attach to the components of entrepreneurial and market orientation was also examined. The results indicate a significant relationship between entrepreneurial and market orientation and business performance. The research limitations are those related to the sample because only Croatian companies are included in the study. Future research should involve a more extensive sample survey in several countries to identify the similarities and differences in the relationships of entrepreneurial orientation, market orientation, and business performance. Another drawback is that the statistical set does not include micro-enterprises, so part of any future research could focus on the differences in entrepreneurial orientation and market orientation and their impact on micro-enterprises' performance compared to larger enterprises. This research provides further evidence of the importance of entrepreneurial orientation and market orientation that needs to be strongly promoted and developed to allow companies to be more competitive in the international market.

Keywords: *entrepreneurial orientation, market orientation, business performance, Croatian companies.*

1. Introduction

This study will address the concept of entrepreneurial orientation and market orientation in the context of Croatian companies. The purpose of this paper is to enrich the literature on the relationship between entrepreneurial orientation, demographic parameters and market orientation, and the relationship between market orientation and a company's performance. To achieve this aim, three research questions were formulated:

1. Is there a dependence between demographic indicators of companies and market orientation?
2. Is there a relationship between entrepreneurial orientation and market orientation?
3. Is there a dependence of a company's success on market orientation?

The aim of this paper is to identify all the associations between the demographic characteristics, entrepreneurial orientation, market orientation and business performance. A research model consisting of 3 hypotheses will be used to address all the research questions.

1.1. Aspect of entrepreneurial orientation

In the last three decades, the notion of entrepreneurial orientation has attracted scientists' huge attention. Different criteria have been used in structuring the aspects of entrepreneurial orientation. For example, Miller (1983) set the starting point for research on entrepreneurial orientation and conceptualized three fundamental dimensions: innovativeness, risk-taking, and proactiveness. Innovativeness is the tendency to dedicate oneself to creativity and experimentation by introducing new products and services and the technological leadership of R&D in a new process. Risk-taking involves the degree to which managers are willing to engage resources in an effort that may fail. Proactiveness is an opportunity-seeking, forward-looking perspective characterized by introducing new products and services ahead of the competition and acting in anticipation of future demand (Rauch et al., 2009). Covin and Slevin (1991) developed a conceptual model of entrepreneurship as an organizational-level phenomenon, and the purpose of the model is to show the elements of an organizational system that are associated with the large companies' entrepreneurial behaviour. Lumpkin and Dess (1996) investigated and validated the nature of the entrepreneurial orientation construct and proposed a framework for exploring the relationship between entrepreneurial orientation and company performance. Lumpkin and Dess (2001) investigated how proactiveness and competitive aggressiveness are interrelated, how they relate to performance, and how their function differs in the environment in which companies used these approaches in strategy creation. These differences are essential because proactiveness and competitive aggressiveness are fundamentally different elements that lead to entrepreneurial success. The results suggest that proactiveness is positively related to performance, but competitive aggressiveness is poorly associated with performance. The literature on entrepreneurial orientation where all five dimensions are used is very limited, for example George et al. (2001), Šlogar, Šokčević and Jerin, (2018) compared to the number of studies with three dimensions Covin and Slevin (1989).

1.2. Aspect of market orientation

Market orientation research began in the 1990s. Measuring market orientation started with the works of Narver and Slater (1990) and Kohli et al. (1993). Narver and Slater (1990) dealt with developing a model for measuring market orientation and analysing its effects on business profitability. They presented three essential components for measuring the market orientation of MKTOR: customer orientation, competitor orientation and inter-functional coordination.

Another group of researchers developed the MARKOR scale (Kohli et al., 1993). The results of a study by Jaworski and Kohli (1993) confirm that market orientation is related to business performance. The relationship between market orientation and performance appears to be strong and resilient in various environmental contexts that vary due to market turbulence, competitive intensity and technological turbulence. In numerous studies, Oczkowski and Farrell (1998), Mavondo and Farrell (2000), Canon et al. (2004) proved that the MKTOR scale is more suitable for determining the relationship between market orientation and business performance (Božić and Rajh, 2008). In this paper, the measurement of market orientation is classified according to the MKTOR scale of Narver and Slater (1990). Slater and Narver (2000) identified strong evidence supporting a positive association between market orientation and company profitability. The relationship of the market orientation concept with the company's innovative strategies was explored by Vázquez et al. (2001). They confirmed that market orientation is positively related to a company's innovativeness or its cultural predisposition to innovativeness. In their study Leko-Šimić and Horvat (2006) analyze company size, age and the type of business as determinants of risk-taking propensity in Croatian export companies. Božić and Rajh (2008) analysed the psychometric characteristics of the MKTOR scale for measuring market orientation developed by Narver and Slater (1990). The analysis was carried out to determine whether this scale is suitable for measuring Croatian companies' market orientation. The results indicate that the MKTOR scale has the properties of reliability, convergent and discriminatory validity and is suitable for measuring market orientation in Croatian companies.

Sheppard (2011) provided an overview of the development of market orientation and presented frameworks of different concepts (Deshpande et al. 1993; Narver and Slater, 1990; Kohli and Jaworski (1990) offering a synthesis of market orientation components related to the importance of information, inter-functional coordination when taking action with a special emphasis on customer relationships. Carrizo-Moreira and Silva (2013) identify that market orientation has a direct positive impact on business performance. Jaiyeobai and Amanze (2014) explored correlations between market orientation and a company's performance and found a positive correlation between market orientation and business performance.

2. Review of the literature on the research of the relationship between EO and MO orientations and business performance

A review of the existing literature shows that entrepreneurial orientation and market orientation have attracted scientists' attention in many countries. In a study by Kropp et al. (2006), the results show that an international entrepreneurial venture's success is positively related to entrepreneurial orientation (EO) and the enterprise's market orientation. In 2011, Grbac and First surveyed the dynamics of the Croatian economy's market orientation. Their research had two goals: to examine the dynamics of the transformation of the Croatian economy towards market orientation and to determine whether the market orientation model changes over time following changes in the business environment. The obtained results supported the conclusion that the market orientation in Croatian companies is incompletely implemented. Croatian companies are aware of the importance of market orientation and its implementation in their business and that it is more difficult to implement but still leave room for further improvements. Grbac and First (2011) and Bodlaj (2010) investigated the impact of proactive market orientation on innovativeness and business performance in Slovenian companies. Proactive market orientation is positively related to the degree of novelty, whereas no evidence has been found in support of direct impacts of market orientation on innovation performance and on business performance.

A study by Suliyanto and Rahab (2012) stated that innovativeness affects business performance, and market orientation can strengthen learning and innovation orientation. Many scholars suggest that harmonizing entrepreneurial orientation and market orientation on social networks significantly shape the business activities of SMEs (Boso et al., 2013; Presutti and Odorici, 2019). On the other hand, there are positive and statistically significant relationships between market orientation and a company's performance, while entrepreneurial orientation has no direct impact on a company's performance (Veidal & Korneliussen, 2013). Examining market orientation and innovativeness and their relationship to the success of medium and large enterprises Łobos and Szewczyk (2018) found that the enterprise market orientation is an essential factor in bringing success. At the same time, however, it shows a weak, negative impact on organizational and marketing innovation. Nevertheless, it was found that the entrepreneurial learning intensity partly mediated the relationship between market orientation and entrepreneurial success (Juhdi, Hong & Juhdi, 2015). Rahomee et al. (2015) examined the mediating role of market orientation in the relationship among entrepreneurial orientation, absorptive capacity and technological innovation capacity among SMEs. Entrepreneurial orientation and absorptive capacity were found to have a significant impact on technological innovation capabilities.

Furthermore, the results show that market orientation has a partial mediation mechanism operating between absorptive capacity and technological innovation capacity. Bucktowar, Kocak and Padachi, (2015) suggest that networking among companies positively impacts entrepreneurial orientation (EO), market orientation, and business success. Choi and Williams (2016) investigate the relationship between EO and business performance and claim that this relationship is mediated by company technology and marketing activities and assume that the mediation effects differ by the SME industry. The results suggest that technology and marketing action mediate the impact of EO on performance.

Likewise, in the manufacturing industries, technological action has a stronger intermediary effect than marketing. Furthermore, it is interesting that Neneh (2016) points to a relationship between MO and business performance moderated by external environmental factors. It is also emphasized that the two dimensions of MO - customer orientation and focus on competition - are significant drivers of business success. The results of research on the impact of entrepreneurial orientation on business operations show that entrepreneurial orientation significantly contributes to the success of business operations (Šlogar, Šokčević & Jerin, 2018). Cantaleano et al. (2018) researched micro and small food industry companies and pointed to the existence of an intermediary effect of proactive market orientation (PMO) in the relationship between entrepreneurial orientation (EO) and service innovation. Indriyani, Suprapto and Calista (2019) found that market orientation has a positive impact on entrepreneurial orientation in the food industry and business performance. "Canonical analysis shows a statistically significant positive relationship between entrepreneurial orientation, market orientation, learning orientation and innovativeness and business performance" (Šlogar & Bezića, 2020a:68). According to (Šlogar & Bezić, 2020b:71), it is "likely that the entrepreneurial orientation associated with the innovative activities of the company can be positively reflected in the creation and maintenance of a good business climate and can strengthen competitiveness in the international market." Nuvriasari et al. (2020) suggest that entrepreneurial orientation and market orientation positively and significantly impact entrepreneurial marketing viewed as an intermediary of EM. Likewise, entrepreneurial marketing has been found to play a vital role in mediating SMEs' market orientation and performance. Furthermore, Wibisono, Universari and Budiati (2020) also examine the effect of market orientation and entrepreneurial orientation on SMEs' performance in the Indonesian

province of Demak Regency. The results of the research showed that market and entrepreneurial orientation have a positive effect on company performance.

3. Methodology

Data collection was conducted using a survey questionnaire. The survey was conducted from October 2019 to January 2020 by sending emails to 900 Croatian companies randomly selected from the Register of Business Entities of the Croatian Chamber of Commerce. The response rate was 17.56%, and all responses were accepted as valid. A total of 158 answers were collected. The survey areas analysed in this research paper are demographic data, entrepreneurial orientation, market orientation and business performance.

The scale adapted from Covin and Slevin's study (1989) was used to measure entrepreneurial orientation. It consists of 9 items and measures the subfactors of innovativeness, risk-taking and proactiveness. The scale developed by Narver and Slater (1990) consisting of 15 items and assessing the subfactors of customer orientation, competitor orientation and inter-functional coordination was used to measure market orientation. A 5-point Likert scale was used to specify the respondents' level of agreement to each statement.

MS Office 365 Excel was used to perform statistical data processing. Some of the statistical methods used are tabular and graphical data representation, absolute and relative dispersion measures, Pearson's linear correlation coefficient, F-test and the corresponding T-test.

3.1. Research model

Many researchers have presented theoretical models that link various orientations (entrepreneurial orientation, market orientation, learning orientation, export orientation) and their subfactors to business performance, some of which were mentioned in chapters 1 and 2.

In this paper, the focus is placed on the impact model of market orientation on business performance. Furthermore, the relationship of company demographic indicators and entrepreneurial orientation to market orientation was investigated.

Figure 1: Authors' research model
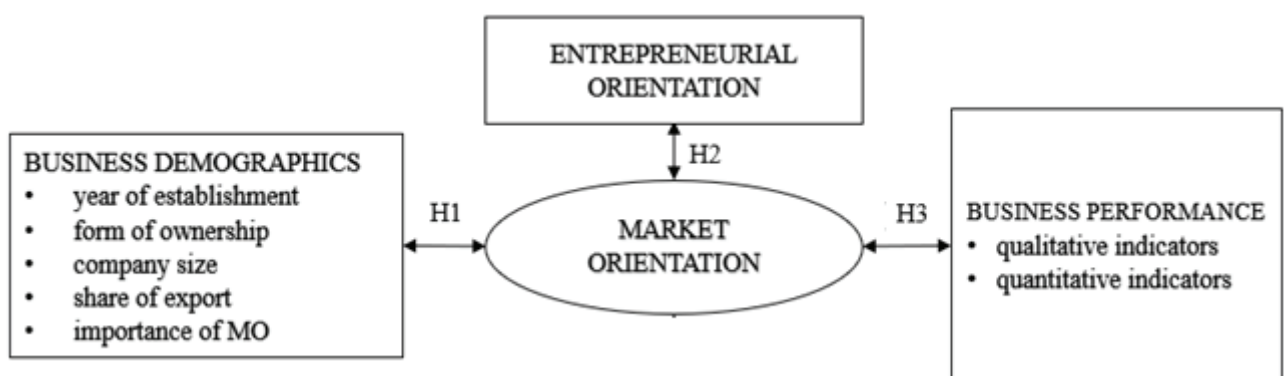
Source: Authors

Figure 1 shows the model of the conducted research. To answer the research questions, the following hypotheses were formed:

- H1 - There is a relationship between market orientation and demographic indicators of the company.
- H2 - There is a relationship between entrepreneurial orientation and market orientation.
- H3 - There is a relationship between market orientation and business performance of the company.

3.2. Sample

The statistical set consists of 158 Croatian companies. The majority of the observed companies, 138, have declared to be privately owned, only 4 to be state-owned, and 16 to be foreign-owned. As it stands, the size of the sample comprising foreign-owned and state-owned companies was too small for conducting our study successfully and for getting accurate and statistically significant results. In the questionnaire, companies were asked to state their total income, total assets and number of employees. Based on these figures, the companies were divided into four categories (according to the Croatian Accounting Act, Official Gazette No 78/15, 134/15, 120/16, 116/18, 42/20 and 47/20). Out of 158 companies, 35 were classified as large companies, 75 as medium companies and 48 as small companies. No micro-sized companies were identified, thus none of the research results can be generalized to micro-sized companies. Almost all the companies had been established during the period 1992 – 2016, the oldest of them established in 1690 and the newest of them established in 2016.

In terms of export volumes, one-third of the observed companies (29.85%) export less than 10% of their products or services. The slightly lower percentage of companies (27.85%) reported to export between 10 and 20% of their production volumes. Together these two groups make up more than half of the sample (57.59%) indicating quite low aggregate export volumes. The share of companies with export volumes falling in the other categories was negligible, with the notable exception of the group of companies with export volumes between 70 and 80% (14.56%, 23 companies).

4. Research results

Figure 2: The distribution of assessments related to entrepreneurial orientation and market orientation of the observed companies (*N = 158*)
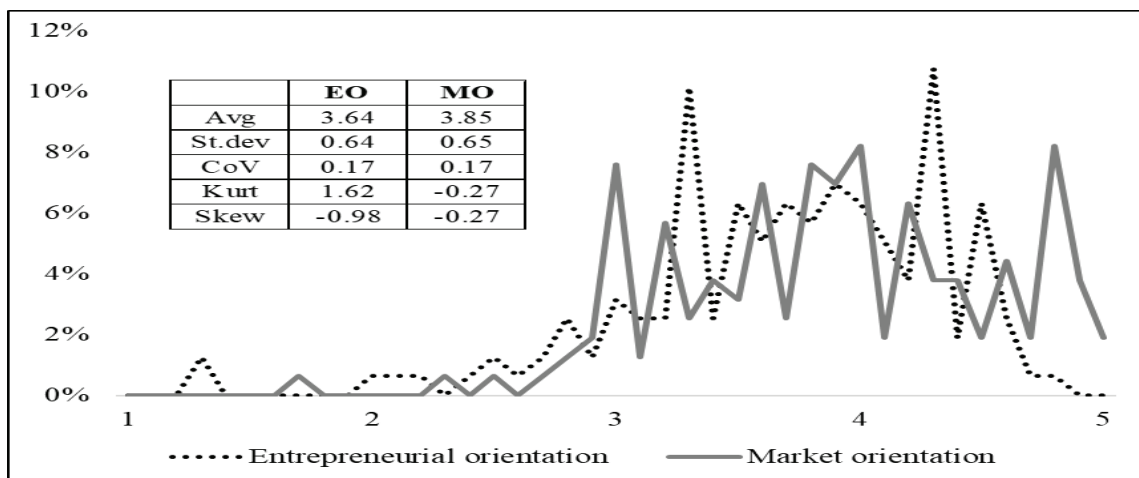
	EO	MO
Avg	3.64	3.85
St.dev	0.64	0.65
CoV	0.17	0.17
Kurt	1.62	-0.27
Skew	-0.98	-0.27

······ Entrepreneurial orientation ——— Market orientation

Source: Authors

Figure 2 shows the distribution of entrepreneurial orientation and market orientation and the selected results of descriptive statistics for each of the distributions. The arithmetic mean served as a measure of central tendency. The average value of entrepreneurial orientation amounts to 3.64, while market orientation value is slightly higher and amounts to 3.85. The results indicate that the average deviation from the arithmetic mean is almost identical for both distributions and amounts to 0.64 for entrepreneurial orientation and 0.65 for market orientation. The coefficient of variation, which is equal to the quotient of the arithmetic mean and standard deviation, was used to measure the relative measure of dispersion. For both distributions, a variation coefficient of 17% was obtained, i.e. a relatively small deviation from the average. The majority of ratings range from 3.00 to 4.28 for entrepreneurial orientation and from 3.20 to 4.50 for market orientation.

The coefficient of kurtosis is 1.62 for entrepreneurial orientation and -0.27 for market orientation, which indicates that the distribution of entrepreneurial orientation is sharper than the normal distribution, while the distribution of market orientation is slightly flatter than the normal distribution. As both kurtosis coefficients range from -2 to 2, the authors believe that the stated deviation is not significant for a more detailed analysis of this particular sample. The asymmetry coefficient is negative in both cases, i.e. the assessments' values higher than the arithmetic mean prevail in both distributions.

In the following part, the tested hypotheses (Table 1) and their components are presented, along with the performed tests' description and their results. A detailed description of each of the tested positions is also provided.

Table 1: Summary of hypotheses analysis results

Hypotheses	1st. Variable	2nd Variable	F-test: p - value	T-test: p - value	Pearson coefficient	Parson: p - value
H1	MO	year of establishment	0.4073	0.0518	n/a	n/a
		company size	0.0801	0.0060	n/a	n/a
		type of ownership	n/a	n/a	n/a	n/a
		share of export	n/a	n/a	-0.06	0.7345
		importance of MO	n/a	n/a	0.4493	0.0000
H2	MO	EO trend	n/a	n/a	0.7109	0.0000
		EO average	0.8192	0.0041	n/a	n/a
H3	MO	qualitative BP	n/a	n/a	0.69	0.0000
		quantitative BP	n/a	n/a	0.46	0.0000

* EO = entrepreneurial orientation, MO = market orientation, BP = business performance, n/a = not available
Source: Authors

The relationship between market orientation and the age of the company was tested by a two-way t-test with the assumption of equal variances (F-test >0.05) with a confidence level of 95% and a p-value > 0.05 was obtained, i.e. there is no statistically significant difference in market orientation between the companies established before and after 2000. To examine the relationship between market orientation and company size, a two-way t-test with the assumption of equal variances (F-test> 0.05) with a confidence level of 95% was used, and a p-value <0.01 was obtained, i.e. it was found that there is a statistically significant correlation between a company's size and market orientation. In particular, the average assessment of the market orientation of small enterprises is 3.64, and of medium and large it is 3.95. The authors' assumption is that larger companies have more capital, easier access to sources of finance and strongly developed market relations, which all result in a simpler opportunity for market orientation. As previously mentioned, 87.34% of enterprises stated to be privately owned. The

rest of the enterprises that are not privately owned represent too small a sample for a statistically significant conclusion about the dependence of entrepreneurial orientation and the type of ownership, so the association of market orientation with ownership was not tested.

The relationship between market orientation and perception of the importance of market orientation was examined using correlation analysis and the value of Pearson's linear correlation coefficient (r) of 0.45 was obtained with p-value <0.01, i.e. a statistically significant positive correlation between market orientation and perception of market orientation importance was determined. It follows from the above result that companies that consider market orientation to be important have mechanisms by which they can implement market orientation in their business. A correlation analysis was performed analogously of the relationship between exports of products or services and market orientation. The Pearson coefficient value of -0.06 was obtained with p– value >0.05, i.e. the relationship between export and market orientation was not determined. The obtained result is not intuitive, and it seems that the observed companies mainly dedicate their market orientation to the domestic market. From these results, the hypothesis H1 cannot be fully accepted or rejected - market orientation depends on some demographic indicators such as a company's size and perceived importance of market orientation and does not depend on the establishment year or the share of exports.

Figure 3. The relationship between entrepreneurial orientation and market orientation

$$y = 0.7238x + 1.2157$$
$$R^2 = 0.5051$$
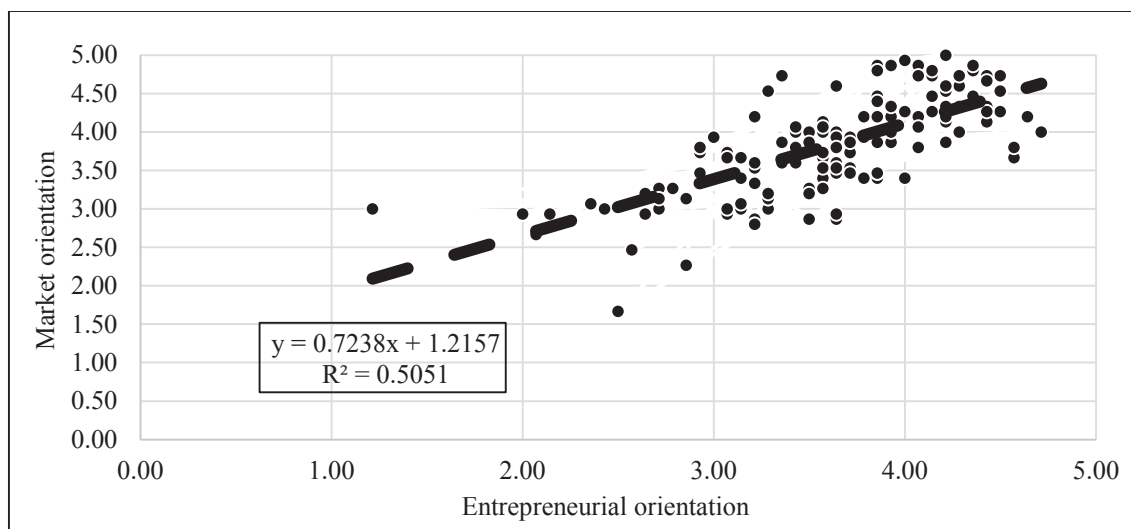
Source: Authors

To test hypothesis H2, a correlation analysis served to analyse the relationship between entrepreneurial orientation and market orientation (Figure 3). The correlation analysis result was $r = 0.67$ with $p<0.01$, which confirmed that more entrepreneurially oriented companies are more market oriented. The hypothesis H2 is thus accepted - there is an association between entrepreneurial orientation and market orientation. A two-way t-test was performed under the assumption of equal variances (F-test >0.05) with a confidence level of 95%, and a p-value <0.05 was obtained. The average assessment of market orientation is statistically significantly higher than the average assessment of entrepreneurial orientation.

Lastly, hypothesis H3, which observes the relationship between market orientation and business performance, was examined. In the survey questionnaire, both qualitative and quantitative indicators were used to measure business performance. Pearson's linear correlation coefficient between market orientation and qualitative business performance data is $r = 0.69$ with $p <0.01$

and r = 0.46 with p <0.01 for the relationship with quantitative business performance data. This confirmed hypothesis H3 - there is a positive and statistically significant relationship between market orientation and business performance.

Both entrepreneurial orientation and market orientation consist of three factors. Entrepreneurial orientation consists of risk-taking, proactiveness and innovativeness, while market orientation consists of and competitor orientation, consumer orientation, inter-functional coordination.

Table 2: The correlation matrix for entrepreneurial orientation subfactors

	Innovativeness	Proactiveness	Risk-taking
Innovativeness	1		
Proactiveness	r = 0.79 p < 0.01	1	
Risk-taking	r = 0.39 p < 0.01	r = 0.40 p < 0.01	1

Source: Authors

Table 2 shows the results of correlation analysis using the Pearson coefficient of linear correlation. There is a strong, positive and statistically significant relation among all entrepreneurial orientation subfactors. Very strong relation was found between proactiveness and innovativeness (r = 0.79) and somewhat weaker relationship was identified between proactiveness and risk-taking (r = 0.40) and between risk-taking and innovativeness (r = 0.39).

Table 3: The correlation matrix for market orientation subfactors

	Competitor orientation	Consumer orientation	Inter-functional coordination
Competitor orientation	1		
Consumer orientation	r = 0.62 p < 0.01	1	
Inter-functional coordination	r = 0.55 p < 0.01	r = 0.72 p < 0.01	1

Source: Authors

Similarly to the results of entrepreneurial orientation subfactors analysis, a strong, positive and statistically significant relation among all market orientation subfactors was found, indicating that the companies that are more oriented towards one of the subfactors are usually oriented more towards other subfactors (Table 3).

5. Conclusion

The aim of the research was to analyse the theoretical concepts of relations between market orientation and business performance on a sample of Croatian companies and to analyse the relations between demographic indicators, entrepreneurial orientation and market orientation. The research shows that some of the demographic indicators are related to market orientation, while others are not. Medium and large companies tend to be more market-oriented than small companies. The authors suggest that the probable reason is that larger companies have more financial capabilities and have specialized departments oriented towards market research. The positive relations are identified between market orientation and perceived importance of market orientation, meaning the companies that find the market orientation important have the instruments to make their business more market- oriented. Previous market research has often dealt with the identification of key factors influencing a company's export performance. (Leko-Šimić, Horvat & Mijoč, 2006). Furthermore, a positive and statistically significant relation was

identified between entrepreneurial orientation and market orientation, i.e. companies that are more entrepreneurial oriented are also more market oriented.

All three subfactors of entrepreneurial orientation (proactiveness, risk-taking, innovativeness) as well as all three subfactors of market orientation (competitor orientation, consumer orientation, inter-functional coordination) show a strong and positive relationship. Results for entrepreneurial subfactor are similar to the results of the research carried by Petković and Sorak (2019) which indicate that the least pronounced dimension is risk-taking and the most pronounced dimension is proactiveness, in our research proactiveness pronounced almost as same as innovativeness.

Lastly, the relation between market orientation and business performance was tested. Business performance was measured by two indicator types, quantitative and qualitative indicators. A strong and positive relationship was established between market orientation and both business performance indicators. The results confirm that the theory presented by many authors linking market orientation with business performance does apply to Croatian companies. The results also correspond to the research carried by Crvelin and Bakula (2006) who have shown the importance of market orientation for business survival. Two shortcomings of this research are an insufficient sample size of the micro-sized companies and an insufficient sample size of state-owned and foreign-owned companies. The authors' recommendation for further research would be to conduct a similar research on micro-sized companies in Croatia. To obtain comparable results a standardized measurement scale should be used, e.g. the scale proposed by Miočević and Crnjak-Katanović (2009). Most companies in Croatia are classified as micro-sized. The results of this research should be compared with the results of any similar research conducted on companies in other countries.

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DEALING WITH ENVIRONMENTAL UNCERTAINTY: THE ROLE OF COMPETITIVE STRATEGIES

ABSTRACT

The aim of this paper is to explore relationship between Porter's generic strategies and the level of uncertainty in company's external environment. In order to gain and sustain competitive advantage in an industry, companies must understand environment in which they are operating and build competitive strategies that will enable them to be better than competitors. However, cost leadership and differentiation, i.e., generic strategies, are not equally appropriate for all types of markets and industries. In industries with high environmental uncertainty, it is assumed that differentiation strategy will be more suitable. On the other hand, using cost leadership strategy will probably be more suitable for companies operating in an environment with lower level of uncertainty and change...
Data is collected through questionnaire that is sent by e-mail to CEO's of Croatian large companies. Such companies are identified from the data provided by the Croatian Chamber of Economy. A total of 40 usable completed surveys is collected, which resulted with the response rate of 12.05%. The questionnaire includes 25 Likert type questions. There are 13 questions describing environmental uncertainty, 5 questions about differentiation through innovation, 2 questions about marketing differentiation and 5 questions regarding cost-advantage strategy. Hypotheses are tested using SPSS 17.0. According to the results of empirical analysis, differentiation through innovation is positively associated with environmental uncertainty, as well as differentiation through marketing. On the other hand, cost leadership strategy is not associated with the level of environmental uncertainty.

Keywords: *competitive strategies, differentiation, environmental uncertainty, generic strategies, innovation.*

1. Introduction

The aim of this paper is to investigate the link between generic competitive strategies and the uncertainty of the environment in which company operates. Stacey (1997) defines strategy as patterns that are observed in a series of actions by the company. These patterns are result of group processes with feedback between discovery, choice and action. Thus, strategic

processes refer to the methods and practices that organizations use to interpret opportunities and threats and decide on the use of its capabilities and resources (Hitt & Freeman, 2006).

According to Porter (1985), attractiveness of the industry is the fundamental determinant of company's profitability. In this sense, a competitive strategy must stem from an understanding of the competition rules that determine the attractiveness of an industry. The goal of a competitive strategy is to deal with these rules or adapt them to the needs of the company. For each industry, the assumption is that competition rules are embodied within five competitive forces: new entrants, substitute products/services, buyers' bargaining power, suppliers' bargaining power and rivalry among existing competitors (Porter, 1985). Understanding these competitive forces is the prerequisite for choosing the appropriate competitive strategy. Porter's model of competitive strategies is based on three generic strategies: differentiation strategy, cost leadership and focus. The differentiation strategy emphasizes the uniqueness of company's products or services in relation to the products of the competition. However, product differentiation is usually costly. Market research, introduction of a new product or service and promotion usually require high costs with questionable rates of return, since it is questionable will new products be accepted on the market. Cost leadership strategy assumes minimizing operating costs and in turn lowering product prices. The focus strategy has two variations: focus on costs and focus on differentiation. In the first case, the company seeks to achieve a cost leadership in its target segment, and in the second seeks to differentiate in the target segment. In both cases, differences between the targeted segments on which the company focuses and other segments in the industry are evident (Porter, 1985).

It is therefore very important to pay attention to the basic principles that determine generic competitive strategies, as well as their impact on competition and competitive advantage. Market conditions today are determined by a series of events and thus represent challenges that companies must successfully face in order to be competitive and continue to operate successfully. According to Pulaj, Kume and Cipi (2015), due to increased competitiveness, relationship between competitive strategies and the environment dynamics should be analysed. Therefore, this paper will discuss generic competitive strategies and their relationship to environmental uncertainty.

2. Theory and hypotheses

The choice of business strategy depends on the attractiveness of the industry and the relative competitive position of the company within the industry. The attractiveness of the industry is determined by five competitive forces: competitors, buyers, suppliers, new entrants and substitutes (Porter, 1985). Competitive forces reveal the most important aspects of a competitive environment and provide a basis for determining a company's strengths and weaknesses. Understanding the structure of the industry leads to strategic action, which can include (Porter, 2009): positioning the company, where the strategy can be considered as a defence against competition, or finding a position in the industry where the forces are weakest; taking advantage of changes within the industry, which provides an opportunity to identify new strategic positions; shaping the structure of an industry in cases where the company introduces new methods of competition; defining the industry.

Industry structure is not completely exogenous and stable. It is partly exogenous and partly influenced by the company's actions. According to Porter (1991), industry in which company operates can be source of competitive advantage. The weaker the competitive forces, the

greater the ability of the company to achieve superior performance. Today, most companies operate in a turbulent environment with complex strategies that, although valid at the time they are launched, can lose on validity with changing business conditions (Porter, 2009). While successful companies grow when more customers buy their products due to lower price or special characteristics, less successful companies leave the industry or improve their products (Kunc, 2010). Competitive strategy positions the company in order to provide the best defence against the competitive forces (Porter, 1979). After assessing competitive forces and their causes, it is necessary to define a strategy that will lead to a competitive advantage.

There are two basic types of competitive advantage that a company can possess: cost leadership and differentiation. When two basic types of competitive advantage are considered in relation to a competitive area (entire market or market segment), three generic strategies are obtained: cost leadership strategy, differentiation strategy, and focus strategy (Porter, 1985). A company can maximize efficiency through these strategies. Any company that fails to make a strategic decision on choosing one of these strategies is in danger of remaining "stuck in the middle" (Porter, 1985, Bordean, et al., 2010). Competitive strategy defines how company will compete in an industry and generic competitive strategies are a way of positioning company within an industry in which it operates (Porter, 1979). When choosing which generic strategy to implement in order to be competitive, two dimensions should be considered: market in which it operates and type of competitive advantage. However, there is no unified process for defining and creating strategies, and the profitability of each company depends on the ability to choose the strategy that is most appropriate (Pulaj, Kume & Cipi, 2015).

Differentiation strategy targets a broad market and is based on creating products or services that are perceived as unique. Differentiation is a sustainable strategy for generating above-average returns since it results in brand loyalty. Brand loyalty usually reduces price sensitivity so increased costs can usually be passed down to customers. Loyalty can also serve as an entry barrier because new entrants need to develop their own competencies to differentiate products in order to compete successfully (Tanwar, 2013). Dess and Davis (1984) state that implementing this strategy creates a unique product that is recognized throughout the industry, allowing to set above average prices as well. Companies that are pursuing this strategy need to assess what is important to customers and how much they are willing to pay for it. The most attractive approaches in differentiation include those that are too expensive or too complicated for competitors to copy. In other words, the differentiation strategy assumes differentiation of products or services from competitors, but also the recognition of these differences by customers. In this situation customers will be willing to pay more for a differentiated product, while for competitors reconciling these differences with their products will be difficult (Dobson, Starkey & Richards, 2004). Since, more dynamic environment will need more adaptation, in stable and predictable environment differentiation will probably not be needed. Since differentiation strategy is more likely to fit a dynamic environment (Fainshmidt et al., 2019), we propose following hypothesis:

H1: The differentiation strategy is positively related to the uncertainty of the environment in which the company operates.

According to Miller (1986) there are at least two types of differentiation: differentiation based on marketing and differentiation based on innovation. Differentiation through product innovation is more useful in a dynamic environment where products and services change frequently. Without innovation, companies in such an industry lose market share and cannot survive. When innovation stimulates a competitive response, the result is an even more

dynamic and unpredictable environment that requires additional changes to maintain effective differentiation (Scherer, 1980; Miller, 1988), so we state that:

H11: Differentiation strategy through innovation is positively associated with environmental uncertainty.

The marketing differentiation strategy tries to create a unique image of the product through marketing, advertising, price increase and market segmentation. This strategy requires a good knowledge of customer preferences and competing products (Porter, 1980; Miller, 1988), and is most useful in an unpredictable and dynamic environment (Miller, 1988), hence:

H12: Marketing differentiation strategy is positively associated with environmental uncertainty.

However, it there is no certainty that implementation of differentiation strategy will result in competitive advantage. This strategy will fail if: competitors can quickly and easily copy attractive features of the product, differentiation does not improve customer welfare, the price is too high, or there are only small differences between rival offers (Thompson, Strickland & Gamble, 2008). Also, additional costs may arise when adding certain attributes to a product to achieve differentiation, which can result in too high selling price, which in turn can lead to customers switching to a competitor with cheaper products. Customers can decide after a certain period that they do not want or do not need additional product features and conclude that the basic models adequately suit their needs. Continuous product innovation is costly, but may be necessary to maintain a competitive advantage. Moreover, broad-based differentiation can be outwitted by specialized companies focusing on a particular segment (Dobson, Starkey & Richards, 2004).

Cost leadership strategy emphasizes efficiency. The product is produced at a relatively low price and is available to a wider range of users. Maintaining this strategy requires a continuous search for cost reductions in all aspects of the business (Tanwar, 2013). More specifically, cost leadership strategy tries to achieve a sustainable competitive advantage by reducing and controlling costs. Ways to do so can include economies of scale, control and reduction of administrative costs, the curve of experience or technology (Pulaj, Kume and Cipi, 2015). To be successful, this strategy usually requires significant market share or preferential access to raw materials, components, labour, etc. The problem is that this strategy can easily be imitated by competitors (Tanwar, 2013). A company that has a cost leadership, in order to achieve above-average performance, must have parity in sources of differentiation or differentiation proximity in relation to competitors. A company has parity in the sources of differentiation if it is able to offer a product that customers will perceive as high quality as competitor's product, but at lower prices. Differential proximity exists if a company delivers somewhat less benefit to customers and therefore sets lower prices (Porter, 1985).

Companies that use a cost leadership strategy are most likely to operate in an environment with less unpredictability and change. Such companies are looking for customers who prefer a low price and innovation and large investments in marketing are therefore inefficient and unnecessary in such markets (Miller, 1988). Based on that, hypothesis H2 is proposed:

H2: The cost leadership strategy is negatively related to the uncertainty of the environment in which the company operates.

Focus strategy can be based on cost leadership or differentiation, and it will not be separately investigated in this paper. A focus strategy based on cost leadership includes meeting customer needs in a target market with lower costs and prices, with the same rules as for a cost leadership strategy (Thompson, Strickland & Gamble, 2008). The focus strategy based on differentiation includes offering unique products that will meet the needs of the target market. Some companies invest their efforts in specific sales channels, such as selling products exclusively over the Internet, while some companies target specific demographic groups, such as childless couples (Edwards et al., 2015). Focus strategy is most suitable for smaller companies focused on a narrow market segment (Yamin, Gunasekaran, & Mavondo, 1999). This strategy assumes that focusing efforts on one, or possibly two narrow market segments, will better meet the needs of that market (Tanwar, 2013). Focusing is especially suitable if: completely different market segments exist, no competitor tries to dominate on that segment, the market segments are different in size, growth rate, profitability and the intensity of competitive forces (Dobson, Starkey & Richards, 2004).

The link between generic strategies and environment has been empirically validated in several studies. Murray (1988) links competitive forces to generic strategies and concludes that exogenous preconditions for a cost leadership strategy derive from the characteristics of the industry, while preconditions for a differentiation strategy derive from customer preferences. Song, Calantone, & Di Benedetto (2002) link the probability of choosing each of the generic strategies to the intensity of each competitive force. They have proven that high buyer power and the threat of substitutes will lead to the implementation of a cost leadership strategy. Furthermore, they assumed that the company is more likely to implement differentiation strategy when there is high threat of existing and new competitors. However, these propositions have not been proven empirically. Dess and Davis (1984) empirically confirmed that a company who successfully implements one of the generic strategies will achieve a higher level of performance than a company that fails to implement any generic strategy. The results obtained by Zajac and Shortell (1989) show that companies change generic strategies to adapt to changes in the environment. However, in conditions of major environmental changes, it is important not only to change the strategy, but also to choose a good strategy. Liu and Atuaheme-Gima (2018) explained that not the same logic is applicable in all types of industries. They assessed the utility of generic strategies (cost leadership and differentiation) for their ability to help an innovating firm deal with dysfunctional competition and improve the returns from innovation. According to their results, in environments with a high level of dysfunctional competition, differentiation is less effective in predicting product innovation. The results by Mustafa and Topuzovska Latkovikj (2020) suggest that pursuing differentiation strategy provides higher firm performance compared to cost leadership strategy or focus strategy, although they that have a positive impact on performance as well.

3. Empirical analysis

Data is collected through questionnaire that is sent by e-mail to CEO's of Croatian large companies from all industries. Based on data from Croatian Chamber of Economy, that includes 332 large companies. The survey is conducted during July and August 2018. A total of 40 usable completed surveys is collected, which resulted in the response rate of 12.05%. The questionnaire consists of 25 Likert type questions. There are 13 questions describing environmental uncertainty, 5 questions about differentiation through innovation, 2 questions about marketing differentiation and 5 questions regarding cost leadership strategy.

Environmental uncertainty is measured using scale from Miller and Droge (1986) through following elements: The need to frequently change products and practices in order to stay competitive (ENV1); products (services) are quickly becoming obsolete in the industry (ENV2); easiness of predicting customer preferences (ENV3); the speed of technological changes (ENV4); external threats (ENV5); the availability of investment capital (ENV6); availability of economic development programs (ENV7); amount of profitable opportunities in a market (ENV8); industry threats (ENV9); dynamism and speed of change in technical, economic and cultural dimension of the environment (ENV10); environmental risk (ENV11); expansion of old markets and the emergence of new markets (ENV12) and environmental hostility (ENV13).

Generic strategies scales are adapted from Miller (1988). Innovative differentiation scale consists of following elements: frequency of product/service innovation (IN_D1); being ahead of competitors in product novelty of innovation speed (IN_D2); being growth-, innovation- and development-oriented (IN_D3); cooperating with competitors (IN_D4) and undoing the competitors (IN_D5). Marketing differentiation is measured using two elements: extensive advertising (MK_D1) and market segmentation (MK_D2). Cost leadership strategy is measured using following dimensions: the importance of cost leadership strategy for the company (COST1); price reduction strategy (COST2); propensity to implement low-risk projects with a safe return (COST3); incremental behaviour (COST4) and boldness of decisions (COST5).

Respondents had to evaluate on a scale 1-5 to what extend each statement refers to their company (from 1-strongly disagree to 5-strongly agree). Hypotheses are tested using SPSS 17.0.

Prior to hypothesis testing, measurement scale analysis is conducted. For variable environmental uncertainty (ENV1-ENV13), Cronbach Alpha indicator equals 0.759, which proves good internal consistency. For differentiation through innovation (IN_D1-IN_D5), Cronbach Alpha analysis has shown the need to exclude some items from the measure. After excluding items IN_D4 and IN_D5, Cronbach Alpha for differentiation through innovation equals 0.801, which shows reliable internal consistency. Variable marketing differentiation has only two items (MK_D1 and MK_D2) and a Cronbach Alpha of 0.548, which is not so good. The Cronbach Alpha analysis of cost leadership variable (COST1 – COST5) has shown the need to exclude the item COST5, leading to Cronbach Alpha value of 0.610 which is satisfactory.

In Table 1 correlations between environmental uncertainty and differentiation through innovation are presented.

Table 1: Environmental uncertainty and differentiation through innovation

		IN_D1	IN_D2	IN_D3
Spearman's rho	ENV1	,461**	,341*	,460**
	ENV2	,006	-,062	,070
	ENV3	,484**	,193	,289
	ENV4	-,081	,192	,067
	ENV5	,222	,155	,326*
	ENV6	,354*	,174	,368*
	ENV7	,169	,043	,245
	ENV8	,405**	,213	,302

ENV9	-,019	,053	,284
ENV10	,471**	,197	,466**
ENV11	,080	,325*	,299
ENV12	,435**	,305	,480**
ENV13	,106	,065	,207

*-Correlation is significant at the 0.05 level (2-tailed)
**-Correlation is significant at the 0.01 level (2-tailed)
Source: Author

Following dimensions of environmental uncertainty variable do not have statistically significant relationship with any of the differentiation through innovation elements: products (services) are quickly becoming obsolete in our industry (ENV2); there are many profitable opportunities in our markets (ENV8); we operate in a very stressful, demanding and hostile (external) environment (ENV13). The statements "We are forced to change products and practices frequently to stay competitive" (ENV1) and "Our environment is increasing through the expansion of old markets and the emergence of new markets" (ENV12) are most related to the elements of differentiation through the innovation. ENV1 has statistically significant relationship with all 3 elements of differentiation through innovation. Based on the results from Table 1, hypothesis H11 stating that differentiation strategy through innovation is positively associated with environmental uncertainty can partially be accepted.

In Table 2 correlations between environmental uncertainty and differentiation through marketing are shown.

Table 2: Environmental uncertainty and marketing differentiation

		MK_D1	MK_D2
Spearman's rho	ENV1	,387*	,259
	ENV2	,104	,281
	ENV3	,160	,261
	ENV4	,056	-,215
	ENV5	,291	,414**
	ENV6	,145	,020
	ENV7	,037	-,029
	ENV8	,330*	,073
	ENV9	-,071	,279
	ENV10	,333*	,453**
	ENV11	,117	,327*
	ENV12	,329*	,147
	ENV13	,203	,190

*-Correlation is significant at the 0.05 level (2-tailed)
**-Correlation is significant at the 0.01 level (2-tailed)
Source: Author

Extensive advertising (MK_D1) has statistically significant positive relationship with the need to frequently change products and practices in order to stay competitive" (ENV1); the amount of profitable opportunities in a market (ENV8), the dynamism and speed of change in technical, economic and cultural dimension of the environment (ENV10) and the expansion of old markets and the emergence of new markets" (ENV12). The relationship between market segmentation (MK_D2) and external threats (EN5), the dynamism and speed of change in technical, economic and cultural dimension of the environment (ENV10) and environmental risk (EN11) is positive and statistically significant. Six dimensions of environmental uncertainty are not statistically significant related with the elements of marketing differentiation. Based on the results from Table 1, hypothesis H12 stating that marketing

differentiation strategy is positively associated with environmental uncertainty can partially be accepted. Also, since H11 and H12 are partially accepted, it can be concluded that H1 is also partially accepted.

In Table 3 correlations between environmental uncertainty and cost leadership strategy are presented.

Table 3: Environmental uncertainty and cost leadership strategy

		COST1	COST2	COST3	COST4
Spearman's rho	ENV1	,276	,081	,165	,204
	ENV2	,100	,018	-,027	-,337*
	ENV3	,355*	-,052	-,085	-,061
	ENV4	,053	-,038	,056	,200
	ENV5	,305	,193	,317*	,215
	ENV6	,343*	,155	,018	-,028
	ENV7	,316*	,227	-,064	-,060
	ENV8	,196	-,096	-,018	,117
	ENV9	,282	,048	,222	,230
	ENV10	,243	,092	,154	-,017
	ENV11	,277	,168	,361*	,037
	ENV12	,101	,198	-,097	,275
	ENV13	,385*	,311	-,047	,366*

*-Correlation is significant at the 0.05 level (2-tailed)
**-Correlation is significant at the 0.01 level (2-tailed)
Source: Author

The importance of cost leadership strategy for the company (COST1) is positively and s significantly related to easiness of predicting customer preferences (ENV3) and availability of economic development programs (ENV7) and environmental hostility (ENV13). Price reduction strategy (COST2) is not positively and significantly related to any dimension of environmental uncertainty. Incremental behaviour (COST4) is positively and significantly related to the fact that products (services) are quickly becoming obsolete in the industry (ENV2) and that the industry is stressful, demanding and hostile (external) environment (ENV13), the only two dimensions that are not related to differentiation. Results from Table 3 show that hypothesis H2, stating that cost leadership strategy is negatively related to the uncertainty of the environment in which the company operates, can be rejected.

It can be observed that different strategies are related to different dimensions of environmental uncertainty, but it seems that in certain types of environmental dynamism certain strategies are more prominent. According to the results of empirical analysis, differentiation through innovation is positively associated with environmental uncertainty, as well as differentiation through marketing. On the other hand, cost leadership strategy is not negatively associated with the level of environmental uncertainty.

4. Conclusion

The strategy defines how to achieve company's goals. In doing so, different concepts and techniques are used. It is therefore very important to pay attention to the basic principles that determine generic competitive strategies, but also the strategy in general, and their impact on competition and achieving competitive advantage. Market conditions today are determined by a series of events and thus represent challenges that companies must successfully respond to, or face them, in order to be a competitor in the market and to continue to operate successfully.

The environment becomes extremely dynamic and requires the ability to adapt to new circumstances.

The objective of this research is to determine the extent in which the differentiation strategy is related to the uncertainty of the environment in which the company operates, through innovation and marketing, as well as examine the impact of cost leadership strategy in the context of uncertainty of the environment in which the company operates. The conducted analysis confirmed that differentiation through innovation and marketing differentiation are positively related to environmental uncertainty, while the hypothesis that cost leadership strategy is negatively related to environmental uncertainty is rejected.

The main limitation of this research is related to the research instrument, i.e. questionnaire, since respondents' answers can sometimes be biased. The sample size of only 40 companies is also one of the limitations of this research. Future research should focus on the relationship between competitive strategies, performance and industry in which company operates, in order to compare the results of companies in different industries implementing different strategies. The data in this research is from 2018, so future research could analyse environmental uncertainty and competitive strategies in relation to Covid-19, since during Covid-19 pandemic the level of uncertainty has increased leading companies to revisit their strategies and way of positioning within an industry.

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COMPARISON OF INDICATORS OF ENTREPRENEURIAL ACTIVITY IN CROATIA AND SELECTED EUROPEAN COUNTRIES

ABSTRACT[1]

In today's economic, business and social spaces, communities and societies around the world constantly face a set of challenges related to growing unemployment, economic development, changing market dynamics and tough business conditions amongst others. As the business environment becomes more complex and competitive, the entrepreneurs must become more creative and receptive to what is new and innovative. Keeping in mind the diversity and complexity of the phenomenon of entrepreneurship, one must in particular consider its integral relationship with economic activity and development, both of the individual and of the society at large. Entrepreneurship is a socio-economic phenomenon of great complexity, defining the market economy system. For Croatia the promotion and development of entrepreneurship were a central objective in the last decade for job creation, competitiveness growth and sustainable economic development. Regardless of the method chosen to develop a business, the entrepreneur must operate with criteria of rationality in terms of choices, decisions and performance evaluation. In economic terms, entrepreneurship is usually interpreted as the ability to creatively and innovatively solve business problems, combined with the ability to use opportunities arising from economic activity. Thus, the aim of this paper is the comparative analysis, both theoretical and empirical, of selected aspects of entrepreneurship in selected European countries and Croatia. The significance of the selected topic, most of all, results from the role and impact entrepreneurial activities have on the welfare of societies, both economically and socially.The study is based on the secondary data obtained from the Global Entrepreneurship Monitor. Particular emphasis was placed on assessing Croatia's situation compared to that of selected European countries.

Keywords: *entrepreneurship, the grounds for entrepreneurial activities, Croatia.*

1. Introduction

Entrepreneurship is the dynamic process of creating incremental wealth by individuals who assume the major risks in terms of equity, time and career commitment of providing value for some product or service. The product or service itself may or may not be new or unique but value must somehow be infused by the entrepreneur by securing and allocating the necessary skills and resources. Entrepreneurs are considered to be important in the move to a "global village" and the development of entrepreneurial skills are being encouraged in all sectors of the economy in order to take advantage of the creativity, innovation and job generating attributes entrepreneurs offer society. Not only can entrepreneurial activity create more jobs Harding (2003) claims there is perception that it can contribute to higher economic growth, regeneration and productivity.

Entrepreneurial activity and each of its characteristics is characterized by basic features: innovation and setting one's own current goals based on the purpose of changing the market situation (proactivity); initiative and sustainability in achieving the goal (effectiveness); focusing on overcoming the internal and external barriers of environmental uncertainty in their market to achieve their goals (transversality); riskiness and ability to act in accordance with the existing and non-standard economic situation (in contrast to reactivity) (Stasyuk, 2008: 24). Although there are a lots of criteria in order to evaluate the entrepreneurial activities in a country level, but this diversity makes it more fuzzy as there are some different outputs for each of these indicators in real world. Entrepreneurial aspects can be classified as individual and functional qualifications, as well as the social and economic conditions of countries. The entrepreneurial decision makes an impact on society and the economy (Singh, 2021: 2326). Being proactive rather than reactive and close to innovation are some examples of individual qualification (Aksu et al., 2019: 2).

Many researchers collected data by Global Entrepreneurship Monitor to do analysis on country or a groups of countries, and some of them have done analysis on multi country level. Wach (2015) conducted a research on the countries of EU according to GEM 2013 report. Alexandrova and Verkhovskaya (2015) evaluated various groups of indicators affecting new businesses and mentioned that individuals' perception indicators are the strongest tool in predicition of the individuals' ability to show entrepreneurial initiatives again using GEM data. Hessels et al. (2008) evaluated some criteria including motives for starting one's own business and the level of social security of 29 countries all over the world and suggested these indicators as most influencing indicators on entrepreneurial intension of citizens of these countries, used GEM 2005 report. Similar studies on different countries were done to evaluate some key global trends in the business environment of countries such as Wennekers et al. (2002) and Amorys et al. (2013) or Bosma and Schutjens (2009).

Despite all these studies and development of too many different indices for evaluating entrepreneurial activities in different context, there is still a need for a more global and unique criteria to be used in global decision making. In this regard, this paper on GEM report compare indicators of entrepreneurial activities in Croatia and five selected countries (Germany, United Kingdom, Switzerland, Netherlands and Ireland).

2. Theoretical framework: entrepreneurship and entrepreneurial aspects from an economic perspective

Entrepreneur, entrepreneurship and description of different indicators of entrepreneurial activity are closely connected with: creativity, action orientation, diversity, independence, spirit of initiative, innovativeness, prompt reactions and decision-making, adaptability to changing conditions or complex situations, flexibility and risk of success or failure. According to Pendiuc and Lis (2013) the decision to start/take over a business is influenced by many factors, such as: economic and social situation as a whole, the legislative and bureaucratic difficulties, the existence of a suitable market opportunities, financial obstacles; need to acquire new skills to manage a business.

There is no universal definition of entrepreneur and entrepreneurship. According to Schumpeter (1965) entrepreneurs are individuals who exploit market opportunity through technical and/or organizational innovation.

Peter Drucker (1970) defines entrepreneurship as a risk taking activity. Initiative and creative thinking have been identified by Hisrich (1990) who defined entrepreneur as someone who demonstrates initiative and creative thinking and is able to organize social and economic mechanisms to turn resources and situations to practical account, and accepts risk and failure.

Herbert and Link (1989) have identified at least twelve distinct themes in the economic literature about possible definitions and explanations of entrepreneur:
- The entrepreneur is a person who assumes the risk associated with uncertainty;
- The entrepreneur is a person who supplies a financial capital;
- The entrepreneur is an innovator;
- The entrepreneur is a decision maker;
- The entrepreneur is an industrial leader;
- The entrepreneur is a manager or a superintendent;
- The entrepreneur is an organizer and coordinator of economic resources;
- The entrepreneur is an owner of an enterprise;
- The entrepreneur is an employer of factors of production;
- The entrepreneur is the contractor;
- The entrepreneur is an arbitrageur;
- The entrepreneur is an allocator of resources among alternative uses.

In the literature that examines entrepreneurship and entrepreneurial activity numerous approaches can be noticed with different perspectives and different determinants. Beginning from the early stages of entrepreneurship examination until the entrepreneurship perspectives in 21st Century. Summary of the entrepreneurship definitions is presented in table 1.

Table 1: Summary of the entrepreneurship definitions

Contributor	Period	Definition
Richard Cantillon	1710	Buying and selling at certain prices, thus undertaking a risk in exchange for profit
John-Baptiste Say	1801/1810	Using management talent to co-ordinate production

Contributor	Period	Definition
Carl Menger	1871	Entrepreneurship involves obtaining information, calculation, an act of will and supervision
Joseph Schumpeter	1910	Entrepreneurship is in its essence the finding and promoting of new combination of productive factors
Frank Knight	1921	Directing and controlling whilst bearing uncertainty
Harvey Leibenstein	1970	Entrepreneurship is the reduction of organizational inefficiency and the reversal of organizational entropy
Israel Kirzner	1975	The identification of market arbitrage opportunities
William Gartner	1985	The creation of a new business
Howard H Stevenson	1988	Entrepreneurship is the pursuit of opportunity beyond the resources currently under your control
Scott Shane and Sankaran Venkataraman	2000	It involves the sources of opportunity; the processes of discovery, evaluation and exploitation of opportunities; and the set of individuals who discover, evaluate and exploit them
Zoltan Acs and Lazlo Szerb	2009	Entrepreneurship is the dynamic interaction of entrepreneurial attitudes, entrepreneurial activity, and entrepreneurial aspiration that vary across stages of economic development

Source: Reddy, C. D. (2012), Entrepreneurship, Institutions and Economic Development: A Configurational Approach, Doctoral Thesis, University of Cape Town, Cape Town, 20. adapted from Kao, R. W., Kao, R. R. & Kao, K. R. (2011) Evolution of Entrepreneurship: Towards Stewardship-Based Economics. IN DANA, L. P. (Ed.) World Encyclopedia of Entrepreneurship. Cheltenham, UK; Northampton, MA, Edward Elgar.

The individual aspects of self-employment have been studied in the literature extensively during the 21st century (Gerber, 2001, Parker, 2004; Ekelund et al., 2005, Block & Sandner, 2009).

Entrepreneurship can be extensively analysed on micro, mezzo and macro level as well as on the individual and organizational level depending on the different approaches and different aspects of entrepreneurship.

Number of entrepreneurship aspects is wide and to perform analysis of the certain aspect of entrepreneurship in different countries, it is necessary to define different measures of that aspects and the sources where the secondary data can be found and later analysed (table 2).

Table 2: Measures of entrepreneurial aspects

Measure	Definition	Source
Nascent entrepreneurship	Percentage of adult population that have taken action to create a new business in the past year but have not paid any salaries for more than 3 months.	GEM
New business start-ups	Percentage of adult population that own or manage a new business from 3 to 42 months old.	
Total entrepreneurial activity (TEA)l	Nascent entrepreneurship + New business start-ups. Also called "Early-stage Entrepreneurial Activity Index" (EA).	
Opportunity-based entrepreneurs	Entrepreneurs who have taken action to create a new venture in pursuit of perceived business opportunities.	
Necessity-based entrepreneurs	Entrepreneurs who have taken action to create a new venture because of the lack of better employment alternatives	
Entry density	Number of newly registered limited-liability firms per 1000 working age population.	WB Group Entrepreneurship Survey (WBGES)
Entry rate	New firms over the total number of lagged registered businesses.	
Business density	Number of existing registered companies with limited liability per 1,000 working age population.	
Entry rate	Number of new firms as a ratio of the total number of incumbent and entrant firms in a given year.	Distributed micro-data analysis (Bartelsman et al. 2004)
Complex Entrepreneurship Context index	Based on 26 variables that measure entrepreneurial activity, strategy and attitudes for 54 countries across 2003–2006.	Acs et al. (2008)

Source: Calá, D. C., Arauzo-Carod, J. M, Manjón-Antolín, M. (2015), The Determinants of Entrepreneurship in Developing Countries, Working Papers, DEPARTAMENT D'ECONOMIA – CREIP Facultat d'Economia i Empresa, 23.

Even though there are lot of different sources of secondary data, because of the possibility to perform comparative analysis of different data for different European countries and Croatia, this paper is based on GEM research.

3. Entrepreneurial indicators in Croatia

Focus of the paper is on the analysis of selected aspects of entrepreneurship in Croatia and the five European countries: Germany, United Kingdom, Switzerland, Netherlands and Ireland. The survey was conducted based on GEM survey data in 2017 and 2019. The GEM report provides important information on various indicators of entrepreneurship that relate, among others, to entrepreneurial attitudes, levels of entrepreneurial activity, and reasons for starting a business. Entrepreneurial attitudes can be measured using four indicators: entrepreneurial intentions, recognizing a business opportunity, entrepreneurial skills and fear of failure. The listed indicators are individual attributes, but they are dependent on many conditions: social, economic, cultural etc. So, it can be reasonable to compare entrepreneurial attitudes in different countries. Since Croatia in relation to the five European countries is in different stage of economic development, the comparison is justified and enables the provision of guidelines.

In Table 3, the percentages of the respondents declaring the entrepreneurial attitudes in Croatia and five selected European countries were listed.

Table 3: Entrepreneurial indicators in Croatia and selected European Countries (%)

Country	entrep. intention		good opportunity		skills and knowl		fear of failure	
	2017	2019	2017	2019	2017	2019	2017	2019
GERMANY	7,2	9,1	42	52,2	37,5	45,8	36,3	29,7
UK	7,3	7,6	43	43,8	48,2	55,2	35,9	44,5
SWITZERLAND	10,5	10,7	47,2	40,7	42,1	49,2	29,5	23,9
NETHERLANDS	8,1	9,2	64,1	64,6	44,6	41,9	29,7	27,1
IRELAND	11,9	14,6	44,5	50,2	42,2	42	39,2	31,4
CROATIA	17,5	20,6	33,6	55,7	59,8	71,2	26,6	50,7

Source: Author's creation based on secondary data from GEM research

The indicator associated with business start-up initiatives is described in the research as "entrepreneurial intentions". It is defined as the percentage of people aged 18 to 64 years who intend to start a business activity over the next three years, and at the same time they are not involved in the implementation of one currently.

The entrepreneurial intentions associated with the business start-up initiative are significantly different in Croatia and the selected group of countries. In Croatia, the share of people who choose aspects of entrepreneurship ready for their own business activity was significantly higher than in the best European countries, this was recorded in both 2017 and 2019. Moreover, in all analysed countries there was a trend of increasing the share of people with entrepreneurial intentions.

Another indicator associated with entrepreneurial attitudes is the recognition of business opportunities. This is measured by the percentage of people who assume that there are favourable conditions in their environment for starting a business. In 2017, Croats were the least optimistic, 33% of them thought that there were favourable conditions for business activities, while in the group of selected European countries this share was between 42% and 47%, except for the Netherlands with a share of 64%. The share of respondents who believe that there are favourable conditions for business activities in 2019 increased in all countries except Switzerland, where it was 7% lower. The largest increase is in Croatia, it is higher by 22.1% and amounts to 55.7%. Only the Dutch are more optimistic than the Croats with a share of 64.6%.

Respondents rated their own abilities in terms of relatively high skills and knowledge for running a business and they were defined as entrepreneurial skills and knowledge. The largest share of respondents with such an opinion was recorded in Croatia, amounting to 60% in 2017 and 71% in 2019. In the five selected European countries in 2017, the share ranges between 37.5% and 48%, and in 2019 between 42% and 55% of respondents with such an opinion. In the observed years, in Ireland the attitudes of the respondents did not change, in the Netherlands there was a slight decrease in the assessment of their own abilities, and in other countries there was an increase of 8% on average.

Fear of failure has been recognized as a factor limiting the level of entrepreneurial activity and it is the last of the identified indicator related to entrepreneurial attitudes.

In the analysed period, in five European countries, the share of respondents stated such fear is between 30% and 40% in 2017 and between 23% and 45% in 2019. In the selected European

countries there is a downward trend in the share of respondents with fear of failure, except in the United Kingdom where an increase of 10% was observed. In Croatia, in 2017, the lowest share of respondents with fear of failure was 26.6%, while this value was a high share of 50.7% in 2019.

The following research area related to individual levels of entrepreneurship relates to the phases of organisational life cycle. The first phase refers to activities related to the intention to start a business activity and the beginnings of its functioning (emergence of entrepreneurs). The second are the phases of new entrepreneurs (activity lasts from 3 to 42 months), the third are established entrepreneurs who have been operating in the market for more than 3.5 years. Table 4 shows the corresponding data showing the levels of entrepreneurial activity in the five selected European countries and Croatia.

Table 4: The levels of entrepreneurial activity in Croatia and selected European Countries (%)

Country	Nascent entrepreneurs		New companies		Established companies	
	2017	2019	2017	2019	2017	2019
GERMANY	3,4	5,3	2	2,6	12,4	5,2
UK	4,4	6,5	4,2	5,9	6,7	8,2
SWITZERLAND	4,7	6,2	3,9	3,7	10,5	11,6
NETHERLANDS	4,7	5,6	5,4	4,8	8,6	10,8
IRELAND	5,8	8,4	3,3	4,3	4,4	6,6
CROATIA	6,1	7	2,9	3,5	4,4	3,6

Source: Author's creation based on secondary data from GEM research

Based on the data from table 4, it can be concluded that in 2017 in Croatia in the first phase of entrepreneurial activity - the intention to start a business- was a higher percentage than in five selected European countries. Although, the share of people in the first phase increased in Croatia in 2019, Ireland had the largest increase and it has the largest share of people who intend to start a business. An upward trend at this stage was recorded in all observed countries.

Table 5: The reasons for undertaking a business activity (% of entrepreneurs)

Country	Build great wealth		Necessity	
	2017	2019	2017	2019
GERMANY	79	32	11,1	42,6
UK	82,2	51,6	13,6	64,4
SWITZERLAND	78,7	38,1	13,9	50,4
NETHERLANDS	83,8	22	7,2	23,6
IRELAND	76,5	28,3	20,9	40,7
CROATIA	63,2	49,1	34,7	74

Source: Author's creation based on secondary data from GEM research

Table 5 shows data by level of entrepreneurship based on opportunities related to improving living standards, as well as those taken out of emergency. Based on the above, there are significant differences in the field of entrepreneurial incentives, characteristic of Croatia and selected European countries. A significant decline in the share of respondents who saw an

opportunity associated with the improvement of living standards in entrepreneurship in 2019 compared to 2017 in all analysed countries can be observed. The smallest decline was recorded in Croatia and amounted to 14%, and in selected European countries it ranged between 30% and 60%. On the other hand, a relatively low percentage of respondents (7%-20%) indicated the necessity as the main motivation to start a business in selected European countries in 2017.

The results of the research for Croatia show a clear division into two extremely different groups of reasons for undertaking business activities. In 2017, more than 63%, and in 2019, over 49% of Croatian entrepreneurs stated that they had established their companies with the intention of taking advantage of the opportunity associated with improving living standards. The need as the main motive for starting a company was stated by 34.7% of respondents in 2017 and as many as 74% of respondents in 2019. At the same time, in the conducted studies there was a significant decrease in positive and an increase in negative stimulation. Fewer and fewer Croats recognize the opportunities to start a business, and at the same time more and more people feel compelled to take these activities due to the lack of other opportunities.

4. Entrepreneurial environment in Croatia and selected European Countries

The entrepreneurial environment of all five analysed European countries has highly above-average results on all pillars. A broader overview on the entrepreneurial environment can be seen in Figure 1. The best evaluated elements of entrepreneurial environment in Germany are government programs that allow entrepreneurs to facilitate the environment for start-up, growth and prosperity and the dynamics of the internal market. The physical and service infrastructure, which is one of the best according to the indices used in this research combined with the openness of the internal market, commercial and professional infrastructure and internationally friendly environment makes the Netherlands and Switzerland attractive for entrepreneurs and entrepreneurial ventures.

Figure 1: GEM Comparison entrepreneurial environment Croatia and five selected European countries
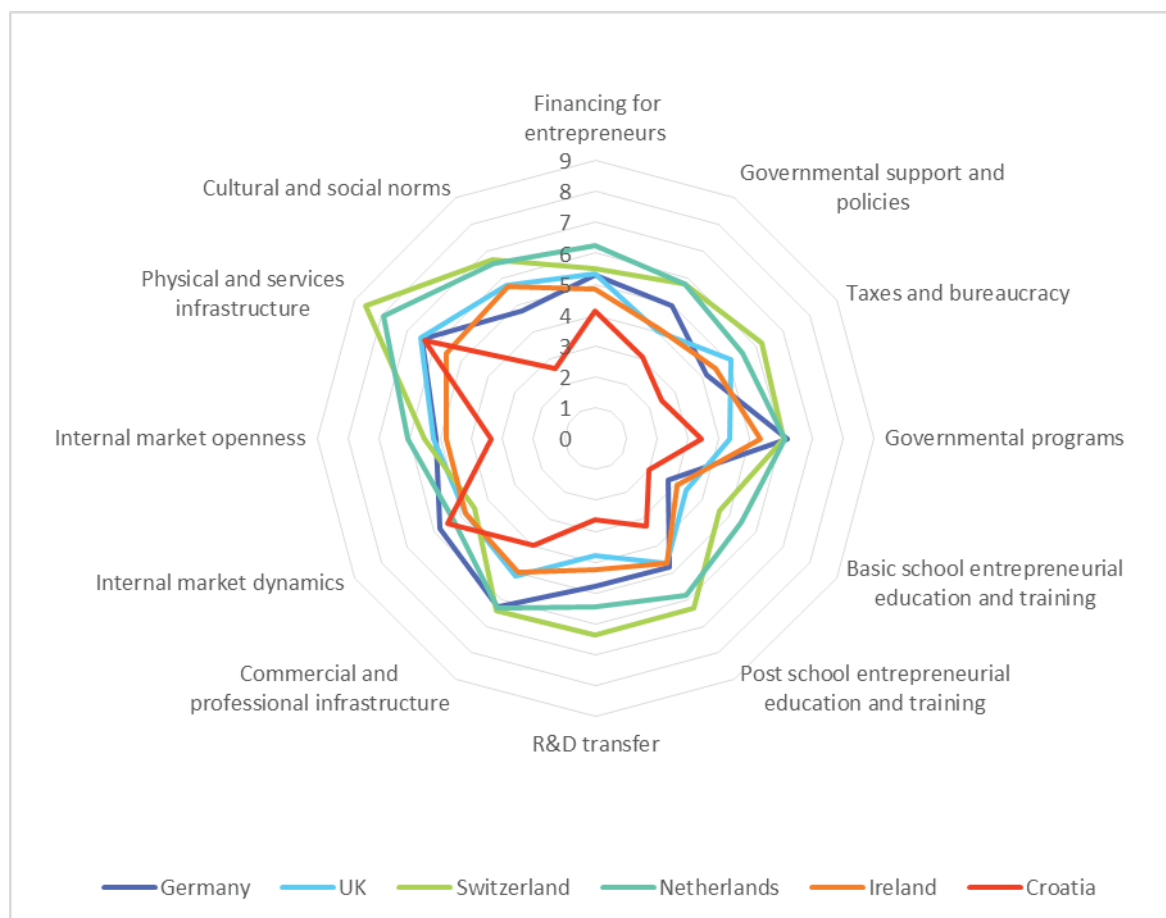
Source: Author's creation based on secondary data from GEM research

Entrepreneurial culture in Croatia is still developing, according to the results of the Doing Business 2020 study for 2019 positioned Croatia in 51st place which is a positive shift by seven places compared to the results for 2018. In the category of Regulations for starting a business, Croatia ranked 114th on the Doing Business 2020 scale, which is, compared to the year before, an improvement of 9 places. However, start-up time and tax regulations and labour market rigidities do not encourage people to start a new entrepreneurial business. According to the data in table 6, it can be seen that in Croatia the worst rated are government support, taxes, government program.

Table 6: GEM Comparison entrepreneurial environment the Croatia and five European Countries

	Germany	UK	Switzerland	Netherlands	Ireland	Croatia
Financing for entrepreneurs	5,31	5,33	5,5	6,25	4,84	4,15
Governmental support and policies	4,97	4,02	5,76	5,76	4,11	3,04
Taxes and bureaucracy	4,15	5,08	6,21	5,49	4,5	2,46
Governmental programs	6,21	4,32	6,07	6,13	5,35	3,41
Basic school entrepreneurial education and training	2,71	3,37	4,63	5,45	3,03	2
Post school entrepreneurial education and training	4,8	4,65	6,33	5,84	4,65	3,28

	Germany	UK	Switzerland	Netherlands	Ireland	Croatia
R&D transfer	4,78	3,77	6,35	5,43	4,22	2,61
Commercial and professional infrastructure	6,29	5,12	6,43	6,34	4,97	3,97
Internal market dynamics	5,79	4,85	4,49	5,29	4,84	5,51
Internal market openness	5,13	5,22	5,54	6,07	4,83	3,37
Physical and services infrastructure	6,45	6,54	8,58	7,93	5,54	6,38
Cultural and social norms	4,78	5,72	6,68	6,54	5,66	2,63

Source: Author's creation based on secondary data from GEM research

The Croatian government, however, needs to improve the environment for entrepreneurs and smooth regulations to encourage entrepreneurship. The internal market openness is also rated lower in Croatia compared to selected European countries. However, Croats could benefit from a more open market that will increase competition and therefore make the market more attractive for other companies to enter. As Croatia's working population declines from year to year, the government's focus should shift from an efficiency-driven economy to an innovation-driven economy. It is therefore important to have a well-educated workforce and to encourage human capital. Croatia is rated low in basic school entrepreneurial education and training. Post school entrepreneurial education and training is somewhat better, but still lags behind selected European countries. Furthermore, the data show that Croatia is lagging behind in education, which ultimately affects the transfer of research and development. Therefore, Croatia needs to work on further strengthening its education system, as it will have a positive impact on other pillars, such as the transfer of research and development, commercial and professional infrastructure and the retention of talent and young educated people in Croatia. This should lead to a more developed ecosystem, where Croatia will not depend on science and technology from abroad, and it will be able to produce knowledge and thus further strengthen the ecosystem.

5. Concluding remarks

In Croatia, a greater willingness to conduct business activity can be observed than in the selected five countries. This greater readiness to start an entrepreneurial venture in Croatia exists despite the conditions that, according to the research, are considered less favourable for starting a business. Croatians highly value their own entrepreneurial skills, but at the same time, a large number of them over 50% in 2019 are afraid of business failure. These findings indicate that there are great opportunities for activities for institutions that support entrepreneurship, whose task is to create legal and administrative conditions conducive to entrepreneurship.

It can be concluded that in selected European countries, entrepreneurial activity, which consists of establishing one's own business activity, is mostly carried out by people because of positive expectations, combined with opportunities to increase income or achieve professional independence. However, in Croatia, entrepreneurial activities are often associated with a lack of other alternatives and a lack of opportunities to find suitable employment.

In both cases, selected European countries and Croatia, there is a significant decline in positive incentives and an increase in negative incentives to start business activities. A decreasing number of respondents recognize opportunities in starting business activities, and

an increasing number of respondents the inability to find a job is the reason for entrepreneurial activities.

The Croatian government needs to improve the environment for entrepreneurs and smooth regulations to encourage entrepreneurship. Croats could benefit from a more open market that will increase competition and therefore make the market more attractive for other companies to enter.

Therefore, Croatia needs to work on further strengthening its education system, as it will have a positive impact on other pillars, such as the transfer of research and development, commercial and professional infrastructure and the retention of talent and young educated people in Croatia.

This study has several limitations. It is based on secondary data published in GEM research. For the future research it should be necessary to include also primary research data focused on specific problems of each country regarding entrepreneurship. Another limitation is that only developed European countries have been included in this research and its comparison with Croatia. For future research it will be necessary also to include another European countries, especially least developed, and perform comparative analysis with Croatia.

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3. DEVELOPMENT

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THE IMPACT OF COVID-19 CRISIS ON TOURISM AND STRATEGY FOR ITS RECOVERY

ABSTRACT

The pandemic COVID 19 has actually brought tourist flows to a standstill in 2020 and caused a loss of 460 billion dollars worldwide. More than 75 million people are projected to lose their jobs globally, and according to the UNWTO, the cycle of recovering tourism to pre-crown levels is expected to take about five years. Tourism will certainly no longer be the same as we were before COVID-19. The tourism industry's fundamental question is - what will tourism be like after the pandemic, and how to adapt to it?
Using a Comparative Automated Content Analysis (ACA) approach, the article compares recent scientific work and determines the pandemic's socio-economic consequences in tourism countries and the planned strategies for tourism recovery in the coming years.

Keywords: *Covid 19, Tourism, Economic recovery, Development strategies, Automated content analysis.*

1. Introduction

An outbreak of the Corona 19 virus occurred in December 2019, and due to its rapid global spread, a public health crisis of international proportions (WHO, 2020a) was declared on January 30th 2020, and a pandemic (WHO, 2020b) was declared on March 11th 2020, at WHO. The coronavirus outbreak introduced measures such as movement restriction and exit bans, quarantine, screening of passengers at airports and train stations, introducing curfews, closure of public facilities, workplace risk control and postponement or cancellation of public events. The measures were followed by the closure of tourist facilities, restaurants, museums and the closure or restriction of services, entertainment, sports, and cultural activities (Fong, Dey & Chaki, 2020). All these restrictions have subsequently affected the global economy and, of course, especially the global tourist flows in the second half of March 2020. The consequences are felt most by countries with a strong tourism sector that caters to foreign visitors. These tourist destinations are also disproportionately affected, as every million euros lost in tourism revenue can mean two to three million fewer sales for the industries that supply tourism (Farzanegan et al., 2020). Direct jobs in tourism are also at risk, and finding

alternative employment for less qualified workers is particularly problematic (Qiu et al. 2020). In 2021, vaccination is expected to increase consumer confidence gradually. At the same time, an increasing number of destinations are easing or removing travel restrictions. Scenarios for 2021-2024 point to a recovery in the second half of 2021 (UNWTO, 2020a).

Nevertheless, the return of international arrivals to the level of 2019 may take between two and a half to four years, according to the UNWTO (2020a). According to the UNWTO, the solution for surviving tourism is sustainability. In their programme, the UNWTO has announced that global tourism's new vision is "growing better, stronger, and balancing the needs of people, planet and prosperity" (UNWTO, 2020b).

This article aims to use the mixed research method of automated content analysis (ACA) to analyse the content of scientific articles in tourism and hospitality to define the impact of Covid-19 on tourism and hospitality and present strategies to limit the consequences. Following the difficult situation, increasing the demand for foreign travel and ensuring domestic tourism growth. Therefore, an investigation of this nature goes in-depth to identify changes in future tourism strategies. The knowledge gathered can provide guidelines for further research that will later contribute to the theoretical and practical development of post-pandemic tourism development strategies.

This paper consists of five chapters. First, the introduction, followed by the research method, which includes data collection and literature selection. The third chapter provides data analysis and the results of the ACA. The paper concludes with a discussion of results and conclusions, including a comparative analysis of findings, research limitations, and proposition of research in the future.

2. Research method

2.1. Data Sources and Data Collection

The literature selection was prepared in the three-step screening process. First, the papers were searched using Industry 4.0, 4th Industrial revolution, sustainability, clean production, sustainable development, environment, green investment, smart factory, and sustainable corporate responsibility on the WOS database. In the second phase, only peer-review papers were selected. The third step includes manual review and selection of peer review papers titles, abstracts, and conclusions.

Web of Science was used for the search Science Citation Index Expanded (SCI-EXPANDED) and Social Sciences Citation Index (SSCI). The Boolean keyword combination was used to search for the relevant papers (TS = (tourism * AND covid-19) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article)Indexes = SCI-EXPANDED, SSCI). All papers were published in 2020. The results of the search were limited to the articles published in the refereed journals only. The peer review was limited to scientific journals written in English and was therefore not intended to provide a comprehensive assessment of the state's totality.

This paper uses the literature review to analyse the current state of the art of a particular topic and identify research gaps for preparing future research (Evangelista, Santoro & Thomas, 2018). The literature review was prepared according to the Prisma 2009 technique (Moher et al., 2009). The process is presented in figure 1.

A search of the Web of Science yielded 246 articles published in 73 peer-reviewed journals. The authors' analysis utilised data from Clarivate Analytics, the Web of Science database. A review of the abstracts and the full texts was undertaken, unearthing 14 irrelevant articles, i.e., those that the main text was not concerning the research theme. The final sample includes 232 articles published in 67 journals. The most important journals in which the majority of the papers were published are Tourism Geographies (30), Sustainability (26), Current Issues in

Tourism (18), Journal of Sustainable Tourism (10), International Journal of Environmental Research and Public Health (8), International Journal of Contemporary Hospitality Management (6), International Journal of Hospitality Management (6), Tourism Management perspectives and others.

Figure 1: Prisma 2009 flow diagram
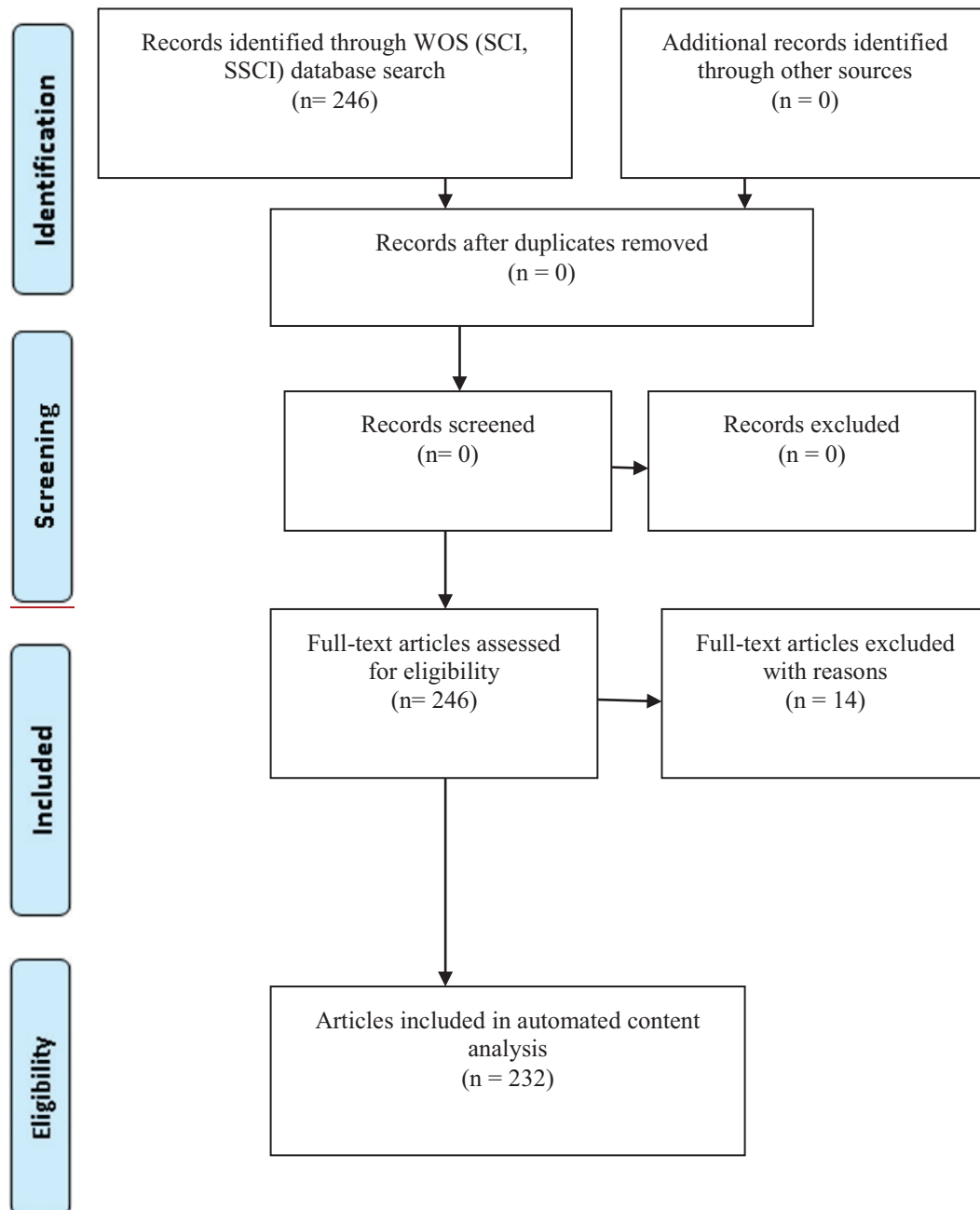
Source: authors' work

2.2. Automated content analysis

An automated content analysis (ACA) references a series of algorithms using probabilistic models. These models are segmented into different sections, namely, "topic models" or "concept-mapping models" (Blei, 2012). The aim is to decipher obscure thematic

compositions in the literature. The term "thematic composition" describes a literature collection's main themes, the frequency with which they occur, and how they correlate. These algorithms aim to identify themes and classify the literature, utilising them as a guide for the classifications (Nunez-Mir et al., 2016).

The concept of the ACA seeding process has a significant impact on the outcome of the research, as it includes two essential features that contribute significantly to the usefulness of the method in the review and the synthesis of large volumes of text. For example, the ACA can process large amounts of text faster than manual methods of literature synthesis. Another feature of the ACA that contributes to its usefulness and significantly influences the study's final result is the exclusion of unintentional human bias. In manual classification, people are exposed to various influences (external environmental disturbances, fatigue, personal bias) that they do not even notice and cannot even report (Smith & Humphreys, 2006).

The key capacity of the ACA is to mitigate all these external subjective influences. In this way, it excludes human bias, which significantly impacts the study's results. Therefore, the ACA is developing its concept of categories from textual data, using strategies based on "Grounded Theory" mutual information and designing data collection and data analysis through an iterative pop-up process (Smith & Humphreys, 2006). Of course, the ACA is not entirely free of subjectivity and requires human input (e.g., manual seeding concepts).

The key considerations of the authors contribute to the usefulness of the ACA. The authors interpret the ACA's findings based on their own experience and the article analysis evaluation. The literature synthesised in this way must be placed in the competition between Internet and sustainability by the authors themselves (Blei, 2012).

ACA was undertaken with the Leximancer software (5.0). As an advanced natural language processing software, Leximancer has no preconception to extract the data, and the final analysis is gleaned from the data. Utilising Bayesian theory, Leximancer quantified the text through an emerging, unsupervised iterative process to determine the frequency of concepts and their relationships (Smith & Humphreys, 2006). Therefore, the "fragmented pieces of evidence" in the document can be used "to predict what happens in the system" (Blei, 2012). Leximancer identified the main concepts in text reliably in an easily duplicated process (i.e., frequency and patterns of co-occurrence) based on the interdependence of words. Leximancer transcends the limitations of qualitative analysis. Firstly, it overcomes some of the researchers' inherent biases and potential errors, especially in the manual coding of categories and defining the classification rules (Kokkinakis & Andreopoulou, 2009). With Leximancer, we can automatically infer concepts and themes from the data and provide clear, concise, and accurate interpretations (Wilk et al., 2019). The concept derived from Leximancer consists of interrelated words, defined in the software as "words" that appear in two blocks of sentence text (including their synonyms). The prominence here in defining a theme is based not only on the frequency of certain words but also on the number of connections a word has with other identified concepts (Kažemikaitiene & Bilevičiene, 2008). Leximancer generates a heat map to display the final results visually. Themes are coded by colour, and brightness is used to denote the theme's significance (Angus et al., 2013). The mapping implies strong semantic relationships based on the visual proximity in Leximancer (Campbell et al., 2011; Smith & Humphreys, 2006).

3. Data analyses and ACA results

For the text analysis, we decided to use the text mining tool Leximancer 5.0. Leximancer is a text analytics tools (machine learning) that can analyse a corpus of documents and visually represent the extracted information. Leximancer produces a concept map that displays the

main concepts of the documents analysed and their relationship. The content analysis performed by Leximancer is both a conceptual (frequency of concepts) and a relational analysis (semantic analysis). The concepts are clustered into higher-level themes. Table 1 presents the thirteen themes extracted by Leximancer (total of 24 concepts identified) and their occurrence (count) in the text of the 232 papers analysed.

Table 1: Themes and concepts in the journal's articles

Theme	Hits	Concepts
tourism	617	tourism, industry, crisis, global, world
covid-19	516	covid-19
economic	194	economic, social, hospitality
travel	179	travel, health, tourists
future	128	future, recovery, management
sustainable	79	sustainable, change
risk	54	risk
development	50	development
disease	44	disease
destination	36	destination
demand	35	demand
environmental	32	environmental
business	29	business

Source: Authors' work

Figure 2 shows the related concepts that are connected to the themes, which are presented in circles. The themes are represented by grouping the clusters of concepts on the conceptual map representation and are shown as coloured circles. The thirteen themes with the most significant number of hits are "tourism", "covid-19", "economic", "travel", "future", "sustainable", "risk", "development", "disease", "destination", "demand", "environmental" and "business".

Figure 2: Concept map of the chosen scientific journal papers published in 2020.
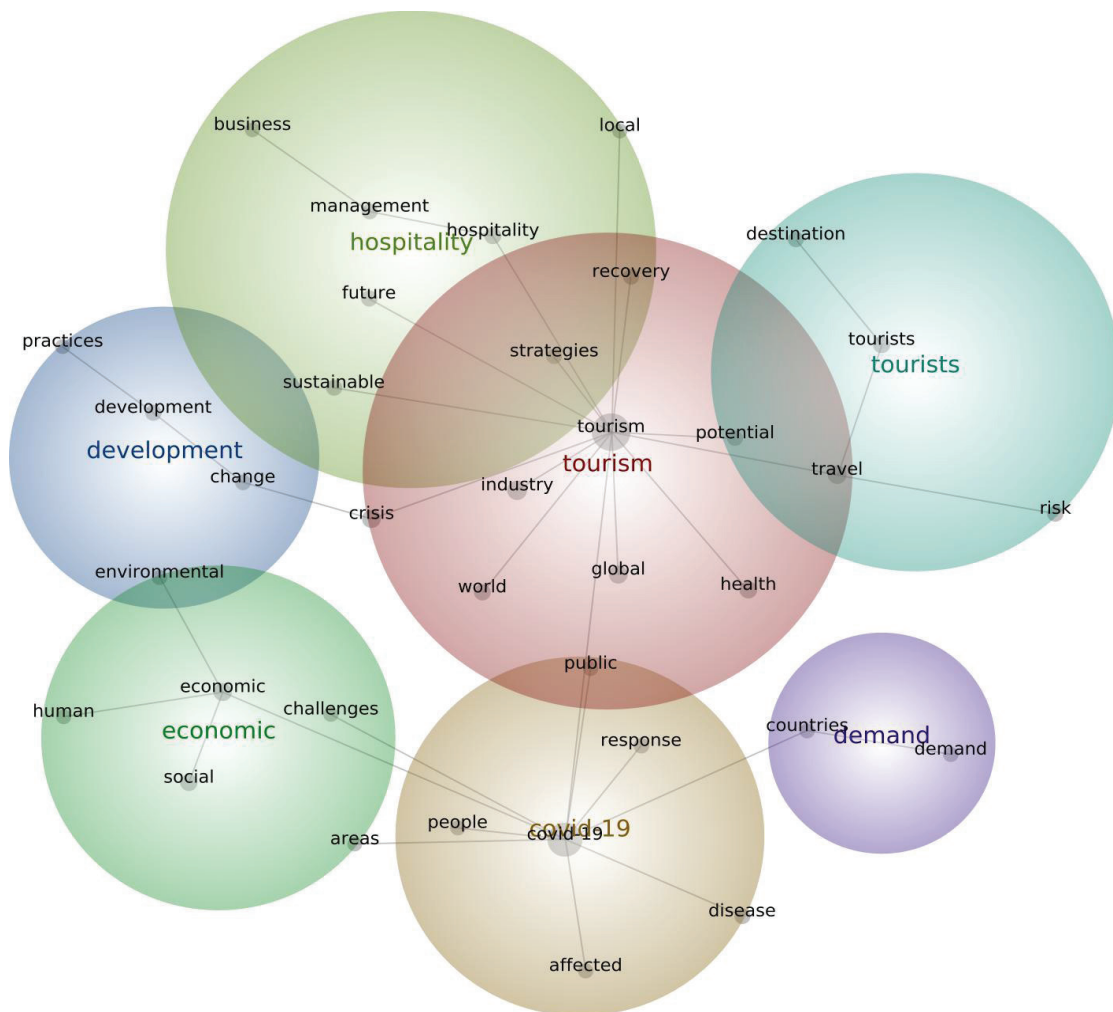
Source: Authors' work

It can be seen in figure 2 that the circles of specific themes overlapping with the circles of other themes, thus forming cross-sections that contain individual concepts, which thus fall into both overlapping themes. For example, the theme "covid-19" overlaps with the theme "tourism". The theme "development" overlaps with the theme "economic". This figure also indicates that the concept "public" lies between the intersection of the themes "covid-19" and "tourism". The concepts "recovery" and "strategies" lie between the intersection of the theme's "hospitality" and "tourism". The concept "environmental" lies between the intersection of the theme's "economic" and "development".

4. Discussion

4.1. Covid-19 and its impact on the economy

In 2020, the Covid-19 outbreak (theme: Covid-19) caused a global socio-economic crisis that is expected to be followed by a financial crisis (Bodrud-Doza et al., 2020; Borio, 2020). In

some papers, it can be found that a pandemic can be compared to a war situation (Kickbusch et al., 2020; Okorn et al., 2020). The only difference is that there is no impact on infrastructure. Data from the Croatian Bureau of Statistics show that the coronavirus pandemic affected most countries' economies (theme: economic), including the Republic of Croatia. Countries responded to the economic consequences by introducing measures to try to alleviate them. By introducing protective measures, such as restrictions on people's movement and limitations on economic activity, they significantly impacted the quarterly national accounts aggregate. The data show that the coronavirus has slowed down the activities of the Croatian economy since mid-March 2020. Data from the Croatian Bureau of Statistics (2020) show that quarterly GDP fell by 15.1% in real terms in the second quarter of 2020 compared to the same quarter of 2019.

Thus, Croatia experienced the largest real decline in quarterly GDP since 1995. On the expenditure side, the real decline was seen in all GDP components, except government consumption, which grew slightly. In Croatia, the coronavirus outbreak has consequences in the field of tourism: while commercial accommodation establishments in Croatia recorded an increase in tourist arrivals and overnight stays in January and February 2020 compared to the same period in 2019, since March 2020, there has been a drastic decrease in tourist arrivals and overnight stays, especially from abroad. The relaxation of quarantine measures in the Republic of Croatia and other countries shows gradual positive tourism changes since June 2020. Due to the partial or total closure of factories and enterprises in March 2020, there was a decrease in industrial production in almost all sectors.

Nevertheless, the activities that increased in the second quarter of 2020 are manufacturing chemicals and chemical products, basic pharmaceutical products, and petroleum products' manufacture. Household consumption fell 14.0% in the second quarter of 2020, the largest quarterly decline to date. The latest retail figures show a decline in retail sales across all types of stores, except grocery stores, tech equipment, pharmacies and online retail. The impact of the pandemic Covid-19 on the global economy (theme: economic) has led to a sharp decline in trade flows between the Republic of Croatia and other countries. In terms of exports of services, a significant decrease was recorded in travel, transport and other business services. The travel restrictions introduced worldwide have also significantly reduced tourist turnover. As a result of the global economy's closure and falling demand (theme: demand), there has been a significant decline in imports of goods, particularly from the European Union's main external trading partners. The decline in total investment is mainly due to the business sector's decrease in investment, especially in equipment investment (Croatian Bureau of Statistics, 2020).

As an answer to the pandemic economic and financial crisis, an agreement to provide €750 billion in financial support to the Member States under the EU's Next Generation Instrument has been reached within the EU (the package will be adopted in 2021) for post-pandemic needs recovery and the management of the crisis itself. Importantly, Member States within the EU also agree on a long-term EU budget of €1,074.3 billion for 2021-2027, including supporting investment in digital and green transformation and resilience. With the €540 billion already available in 2020 through the three safety nets (for workers, businesses and the Member States), this brings the total EU recovery package to €2,364.3 billion. In September and October 2020, the Council approved €1 billion to Croatia (General Secretariat of the Council, 2020).

In the following, the discussion focuses on analysing the impact of Covid-19 on the very central area of tourism research.

4.2. Covid-19 consequences in tourism

The tourism sector (themes: tourism and tourists) was indeed in the first lines of battle at the coronavirus outbreak (Siddiquei & Khan, 2020). The tourism sector's immediate crisis is reflected in both the supply and demand sides (theme: demand). On the supply side, we see the closure of tourism businesses. There has been a global decline in commercial flights and a temporary reduction in international rail and bus passenger services. Tourism demand itself is greatly reduced or non-existent due to restrictions on the population's movement (Farzanegan et al., 2020; Williams, 2020).

The Corona-19 virus's consequences are visible, especially in countries with strong tourism catering to foreign visitors. These countries (e.g., in Europe, Portugal and Croatia) are disproportionately affected, as every million euros lost in tourism revenue can mean two to three million fewer sales for the industries that supply tourism. The so-called moderate scenario produced by UNCTAD will inflict billions of dollars of damage to global tourism. Figure 4 shows UNCTAD's estimate of countries that will suffer a loss of tourism revenue due to the coronavirus as a percentage of GDP, and Figure 5 shows the estimate in absolute terms (billions of dollars) (UNCTAD, 2020).

Figure 4: Estimating the countries that will suffer a loss of tourism revenue due to the coronavirus as a GDP percentage
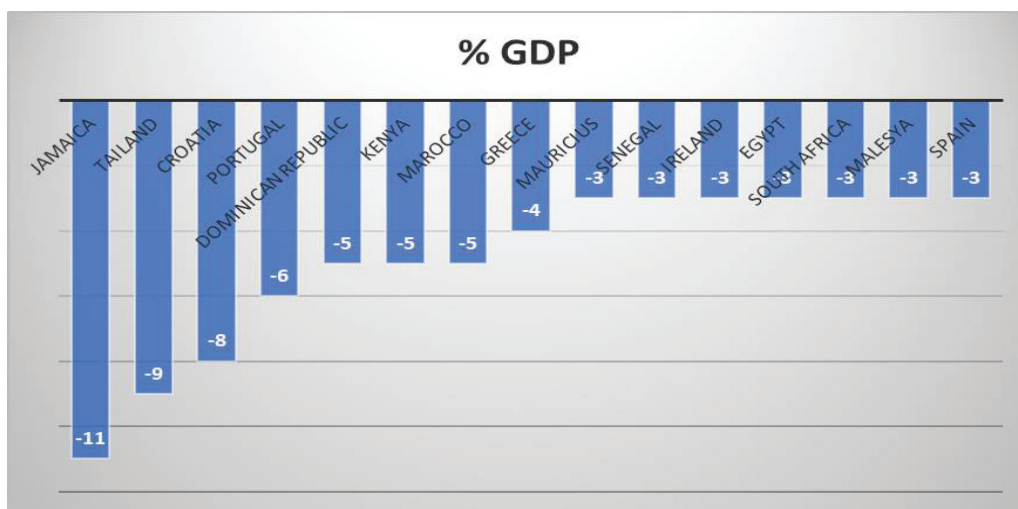
Source: UNCTAD (2020)

It is visible from figure 5 that the countries with the highest loss in millions of USD will be: USA-187.038, China-104.690, Thailand-47.728, France-47.289, Germany-46.260, Spain-44.119, Great Britain-37.096, Italy-34.324, Japan-30.706, India-28.120, South Korea-22.092, Indonesia-20.713, Canada-18.480, Mexico-17.376 and Portugal-13.922 (UNCTAD, 2020).

Figure 5: Estimating the countries that will suffer a loss of tourism revenue due to the coronavirus in millions of USD
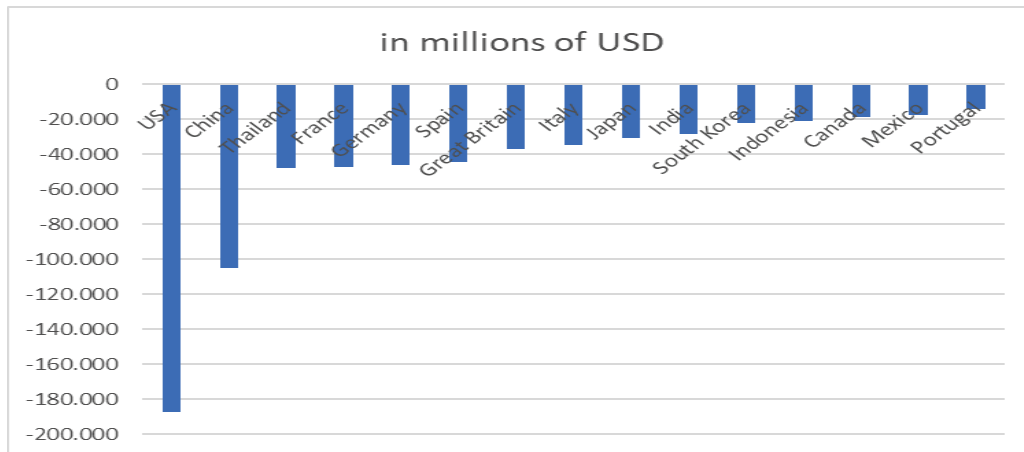
Source: UNCTAD (2020)

Direct jobs in tourism are also at risk. As shown in figure 6, finding alternative employment for less-skilled workers is particularly problematic (Lenzen et al., 2020; Yang, Zhang & Chen, 2020).

Figure 6: Employment loss in the tourism industry due to the Covid-19 pandemic worldwide, by region (millions)
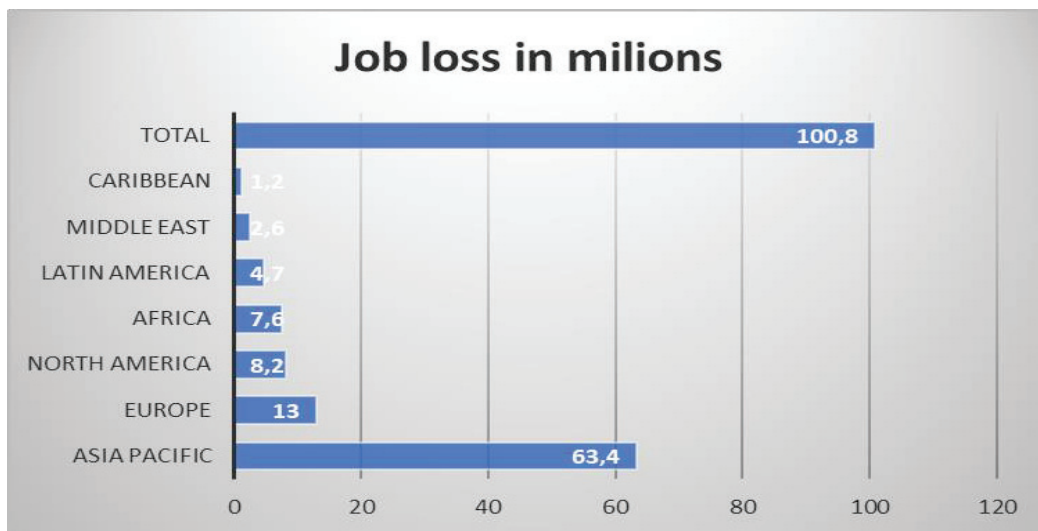
Source: Statista (2020a)

As shown in Figure 6, the global travel (tour operators, charter companies, air companies, bus and train companies etc.) and tourism market is projected to lose 100.8 million jobs worldwide by 2020 due to the coronavirus pandemic. The Asia-Pacific region will have the largest loss of approximately 63.4 million jobs, and the second-largest job loss is expected in Europe, with a projected loss of 13 million jobs (Statista, 2020a).

To understand the reasons that have led to such a redundancy level, it is necessary to analyse the economic situation in the business tourism and travel industry and luxury tourism.

The tourism and travel industry experienced an extraordinary decline in business travel revenue in 2020. It is estimated to have lost $810.7 billion annually worldwide. At the regional level, China was the hardest hit (-$404.1 billion), followed by Europe (-$190.5

billion), Asia Pacific (-\$120.2 billion), North America (-\$63.5 billion), Middle East (-\$18.1 billion), Latin America (-\$17.6 billion), Hong Kong (-\$3.6 billion) and Taiwan (-\$3.3 billion). Based on Covid-19, the travel and tourism market is expected to see a 55% decline in revenue in 2020 compared to 2019. If the 2019 market reached 739 USD billion in 2020 is expected only 349 USD billion (Statista, 2020a).

The luxury tourism market is also important to the tourism and travel industry, which is seen as an industry-focused on meeting guests' luxury travel expectations with high net value-added. This market is considered more resilient to the onset of Covid-19 than tourism in general. For example, projections suggest that the decline in global luxury tourism revenue in 2020 is likely to be less than the decline in global total internal tourism revenue. Thus, the global luxury tourism industry's value is projected to reach \$545 billion in 2020 (Statista, 2020b).

Extremely affected by the Covid-19 pandemic is the restaurant industry. Social distancing measures and general policies regarding the movement in public places have led to a decline in guest visits. According to OpenTable research, as of November 28th, 2020, the decline in restaurant seats worldwide was 51.3 per cent compared to the previous year (Statista, 2020a).

To conclude the analysis of the impact of the Covid-19 pandemic on the tourism industry, we can state that:

- Thousands of companies are facing the problem of paying employees and overcoming another crisis after the collapse of Thomas Cook, the confrontation with Brexit, etc. (Alonso et al., 2020; González-Torres, Rodríguez-Sánchez & Pelechano-Barahona, 2020; Uğur and Akbıyık, 2020). Many companies can no longer pay their rent, and thousands of employees could lose their jobs for the time being (Statista, 2020a). Tourism and travel service providers such as TUI, Expedia and Airbnb have suffered extreme sales losses or even ceased operations during the lockdown period. Also, IATA expects a loss of 54% in the airline and air transport industry (Statista, 2020c).
- Local communities worldwide will go without annual revenue from tourism (e.g., overnight local taxes, concessions) (Jiricka-Pürrer, Brandenburg & Pröbstl-Haider, 2020; Loi, Lei & Lourenço, 2020).
- Governments will collect less in taxes, and the entire economic ecosystem will feel the consequences of losing financial resources that allow it to survive and thrive. The Covid-19 impacts household budgets (Green & Loualiche, 2020; McKee & Stuckler, 2020). For the tourism and hospitality industry survival, governments provide subsidies to companies (Joshi & Bhaskar, 2020). It must be understood that the investment in tourism infrastructure is large; on the other hand, the industry has high fixed costs (personnel, energy, buildings) and relatively low average capital returns.
- After the Corona-19 crisis, it will be necessary to focus on developing a new, more resilient tourism (Ivanova et al., 2020; Prayag, 2020) and on developing green and sustainable tourism concepts (Gössling, Scott & Hall, 2020; Higgins-Desbiolles, 2020; Jones & Comfort, 2020; UNWTO, 2020b).

The following subchapter is focused on analysing the planned measures for recovering the tourism industry in years after the Covid-19 pandemic, which will enable a faster increase in revenue.

4.3. Strategies for future tourism industry recovery

The Covid-19 outbreak significantly impacted the decline in global tourism revenue, as shown in Table 6. Based on the analysis, it is estimated that the cycle of tourism recovery to pre-outbreak levels will take about five years. However, the question is how tourism will change after the pandemic and prepare, reorganise, and adapt.

Figure 6: Worldwide travel and tourism revenue in billion USD
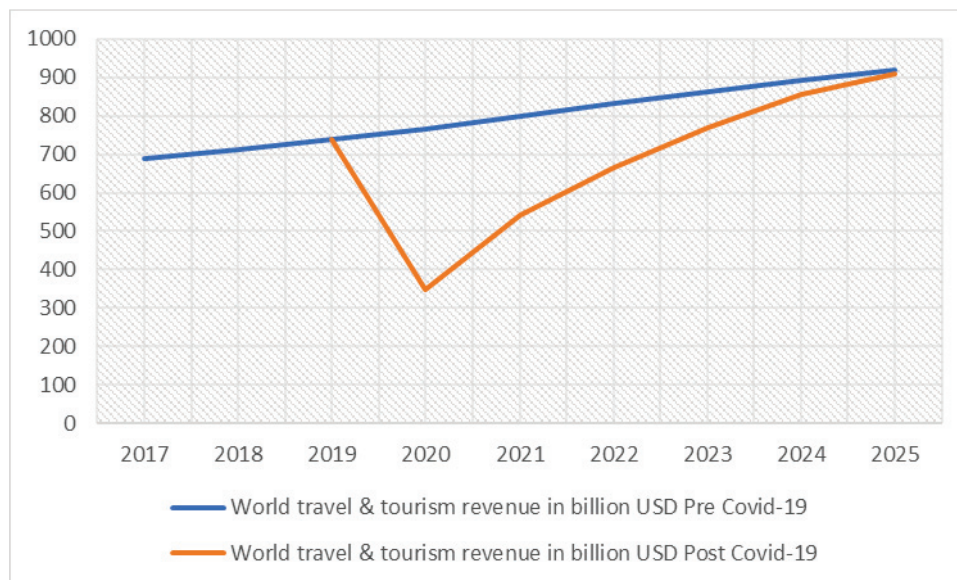
Source: Statista (2020c)

In the short term, in 2021, when the pandemic is still ongoing and vaccination is taking place, travel can be expected to be shorter and more focused on the home country and nearby foreign regions, which were already important tourist markets before the pandemic (Matiza, 2020).
One of the important consequences of Corona-19 will be that it will accelerate the decline of mass tourism. The post-Covid-19 period will be characterised by an increase in demand for individual travel, while a decline in the demand side for group travel is expected. Thus, resilience tourism will emerge, and the focus will be on sustainable tourism (Higgins-Desbiolles, 2020; Sharma, Thomas & Paul, 2020). Thus, people will increasingly seek genuine personal contact, so getting to know the locals and local cultures will no longer be so damn playful, visibly staged and artificial (Romagosa, 2020).
According to many forecasts, the importance of locally produced food should increase in the coming period. Presumably, Croatia should also perceive this as an advantage and offer a sustainably oriented, diverse range of local, domestic products. Food safety and proof of proper hygiene will, of course, play an essential role in this. Cooperation between producers and restaurateurs will also be crucial for the renewed growth and rise of Croatian gastronomy, as will much new creativity that draws from uniqueness and local roots, but freshly. Sustainable business practices will become even more important to consumers. Strengthening sales of brands that demonstrate environmental responsibility was evident even before the outbreak of the pandemic. The corona's time has shown how strong the impact of the global economy and mass tourism is on our environment (CO2 reduction to clean canals in Venice) (Malliet et al., 2020).
It is also worth mentioning the importance of digitalisation and information and communication technology in tourism. All of us who were not familiar with modern

technology before Corona-19 have certainly become so in the last month or two. As consumers, we have savoured all the benefits and conveniences that modern technology offers us. Digital, contactless business has taken on a new lease of life. Online travel experiences have also become a new way for a destination and a tourist offering to reach us while dreaming of a destination. Virtual and augmented experiences are a new opportunity for different tourist destinations experience process (Peterlin et al., 2021).

5. Conclusion

Tourism is currently facing one of the greatest upheavals in its history. It is critical for destinations and tourism suppliers to understand that this global pandemic experience has changed the buyer-tourist relation. Furthermore, this change will certainly not be short-lived. There will be a need to adapt to how you do things, what you offer, how you approach potential customers and how you communicate differently. It will require a lot of innovation, flexibility, knowledge sharing and, above all, cooperation. Croatia is also faced with survival on a tourist market currently disturbed by the COVID-19 pandemic as a tourist destination. As previously determined in the research of Alkier et al. (2015), Ivanović et al. (2015), Ivanović et al. (2020), Drpić et al. (2019), tourism is one of the most developed economic branches within the Croatian economy, and as such participates most significantly in its Gross Domestic Product. Croatia is constantly investing in its tourist offer based on natural, cultural-historical and other resources and values that make it unique and recognisable on the tourist market. It constantly aims towards reaching an even higher level of competitiveness. It is expected that after the pandemic situation has calmed down, Croatia will continue to register the growth of its tourist turnover again and return to its rightfully earned position. However, it is expected that additional efforts will need to be made in the sense of attracting tourists through further improvement of quality and diversity of total tourist offer and through appropriate marketing activities to present Croatia as a safe destination.

An important limitation of the article is that it is based on a review and content of the existing scientific literature. Therefore, we believe that it would be necessary to conduct a field survey among tourism workers in Croatia and determine how Covid-19 changed the behaviour of tourists and how unique destinations will adapt to the situation.

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INTERDEPENDENCE BETWEEN NON-PERFORMING LOANS, FINANCIAL STABILITY AND ECONOMIC GROWTH

ABSTRACT

With non-performing bank loans demonstrating counter cyclicality and adverse trajectories during the global financial crisis 2007-2009, as well as their expected behaviour in the crisis caused by the COVID-19 pandemic (or during "lockdown recession"), the main goal of this article is to provide a systematic theoretical viewpoint on non-performing loans and the influencing factors, as well as empirical evidence of their relationship with financial stability and economic growth. In conducting the empirical research, the authors used a multiple linear regression model in the case of Jordanian banking sector, as the most vital sector of the country's economic system, for the period from 2006 to 2019.

Keywords: non-performing loans, banking sector, financial stability, economic growth, Jordan.

1. Introductory considerations

Although non-performing loans (NPLs) are as old as banks and that there is always a certain degree of risk of occurring losses on bank loans (even if the loans are considered to be performing and currently being paid, which can be explained by risk weight categories applied to even performing, not only underperforming and non-performing assets), a significant increase of NPLs in the time of the global financial crisis 2007-2009 was clearly demonstrated that NPLs have an adverse impact on financial stability as well as economic growth. The latter is mainly achieved through contraction of credit supply to small and medium-sized businesses (SMEs).

While the USA has succeeded in reaching the NPLs level before the crisis, the EU countries still have not (Enria, 2020; Fredriksson & Frykström, 2019, 2-4). There are several reasons for that: 2011 European sovereign debt crisis, differences in the legislatives, monetary policies, taxation, to name a few. The international harmonization in the field of NPLs has started in recent years through the second and the third of the Basel Accords as well as IFRS 9 – Financial Instruments. However, the novel crisis, caused by the pandemic of the coronavirus COVID-19, is expected to affect the level of NPLs and reopen the unsolved issues with regard to NPLs at the international level. The question is what happened in the countries of other regions around the world when it comes NPLs. Hence, the authors of this paper want to test the hypothesis about negative relationship between NPLs, on one side, and financial stability and

economic growth, on the other, in the case of the Hashemite Kingdom of Jordan, as a country of the Middle East-North Africa (MENA) region. Consequently, the paper consists of three main parts. The first part provides a robust theoretical framework of NPLs; the second part gives a review of related previous research in the field, while the third part of the paper is based on secondary data set and reveals the interdependence between Jordan's economic growth, its financial stability, and NPLs in the banking sector, of which total assets accounted for 93.5% of the financial system's total assets at the end of 2019 (Central Bank of Jordan, 2019, 26).

2. Theoretical framework

As far as the definition of NPLs, or bad (problem) loans, is concerned, there is still no globally accepted explanation of this phenomenon. This means that characterizations of NPLs vary across different jurisdictions. Thus, it could happen that loans with the same degree of credit worthiness are not bearing the same name in different jurisdictions and the banks in different jurisdictions are practically managing the loans with the same degree of credit worthiness in various manners. Variations across jurisdictions in loan classification schemes and practices are detrimental for several reasons (BCBS, 2016, 3-4):

- At a bank level, it may be difficult to properly assess credit risk and delay early detection of an increase in credit risk (i.e., deterioration of asset quality) and its consequences, in particular when supervising a cross-border bank with activities in jurisdictions using different loan classification schemes.
- At a system-wide level, they make international comparisons very challenging for supervisors, multilateral public bodies, and market analysts.
- At the Basel standards level, they can influence the implementation and assessment of compliance with the "Core Principles for Effective Banking Supervision", especially Principle 18 – Problem assets, provisions and reserves (BCBS, September 2012, 48-49), as different credit risk categorization requirements and practices different incentives to act early on problem assets, and initiate supervisor responses, which can ultimately lead to an unlevel playing field.

Based on the existing reference literature about NPLs (e.g. Krueger, July 2002; Fredriksson & Frykström, 2019; Bholat et al., 2018; Agić, 2018, etc.) the following three commonly used institutional approaches to defining NPLs can be recognized:

1) The Institute of International Finance, more specifically 1999 Working Group on Loan Quality, first provided a loan classification scheme. It divided all loans into the five groups: (a) standard, (b) watch, (c) substandard, (d) doubtful, and (e) loss. The last three categories – substandard, doubtful, and loss – were identified as non-performing loans, which means that payments of principal and/or interest are overdue more than 90, 180, and 365 days, respectively (Krueger, 2002, 20).

2) According to the International Monetary Fund, "loans are non-performing when payments of principal and interest are past due by three months (90 days) or more, or interest payments corresponding to three months (90 days) or more have been capitalized (reinvested into the principal amount) refinanced, or rolled over (that is, payment has been delayed by agreement)" (IMF, 2006, 183).

3) When it comes to the Basel Committee on Banking Supervision, "a default is considered to have occurred with regard to a particular obligor when either or both of the two following events have taken place". The bank considers that the obligor is unlikely to pay its credit obligations to the banking group in full, without recourse by the bank to actions such as realising security (if held). The obligor is past due more than 90 days on any material credit obligation to the banking group. Overdrafts will be considered as being past due once the

customer has breached an advised limit or been advised of a limit smaller than current outstanding" (BCBS, June 2006, 100). In April 2017 BCBS launched the final guidelines on non-performing assets, "Prudential treatment of problem assets – definitions of non-performing exposures and forbearance", which defined non-performing exposure as all exposures that are "defaulted" under 2006 Basel rules text (i.e., paragraph 452) as well as "all exposure that are credit-impaired (in the meaning of exposure having experienced a downward adjustment to their valuation due to deterioration of their creditworthiness) according to the applicable accounting framework" and/or "all other exposure that are not defaulted or impaired but nevertheless (a) are material exposures that are more than 90 days past due, or (b) where there is evidence that full repayment based on the contractual terms, original or, when applicable, modified (e.g. repayment of principal and interest) is unlikely without the bank's realisation of collateral, whether or not the exposure is current and regardless of the number of days the exposure is past due" (BCBS, 2016, 8). Moreover, Basel III regulatory framework, completed in December 2017, lays down tougher requirements for disclosure and transparency in bank financial reporting (BCBS, 2017, 134-136). This has made it easier to get an overall picture of the risk associated with NPLs, albeit there are still differences with regard to the definition at the global level.

Hence, there is a consensus about overdue payments by more than 90 days, which is a quantitative component of NPLs. With respect to their qualitative component, it should be emphasized that NPLs represents those amounts of bank credit portfolios that are exposed to increased risk of credit losses. In that regard, the International Financial Reporting Standards (IFRS) do not address the topic of NPLs as such, rather they deal with "impaired loans" and note disclosures on credit risk (Bholat et al., 2018, 38-39). More specifically, new IFRS 9 – Financial Instruments, which replaced IAS 39 – Financial Instruments: Recognition and Measurement (except the "macro hedge accounting" requirements) and whose implementation is mandatory from January 1, 2018, is related to loan loss provisioning.[1] It requires banks to recognize expected credit losses even before debtors miss a single principal or interest payment, as soon as loans are granted, and set aside adequate (or sufficient) funds. Before that, according to IAS 39, loans are carried at full value even when it becomes obvious that debtors will not be able to service them and assets are treated as perfectly good until the moment they are recognized to be horribly bad (s.n., 2017). This means that before IFRS 9 provisions should have been made at the time of classifying a loan as non-performing.

The EU-wide unification of NPLs was accomplished thanks to the European Banking Authority (EBA) in its "ITS on Supervisory Reporting" [or "Commission Implementing Regulation (EU) No. 680/2014"]. Non-performing exposures are "those that satisfy either or both of the following criteria:
a) material exposures which are more than 90 days past-due;
b) the debtor is assessed as unlikely to pay its credit obligations in full without realisation of collateral, regardless of the existence of any past-due amount or of the number of days past due" (EBA, 2014, 13).

Other than banking book loans and loan commitments, "exposures" in this context include debt securities and financial guarantees. Because of the past-due criterion and the unlikely-to-pay criterion, this EBA's definition is consistent with IFRS 9, albeit it is broader. The bank itself makes the qualitative assessment, which means that there is still a certain degree of discretion when reporting NPLs to the supervisor. Although the latter definition was originated for supervisory reporting purposes, banks are strongly encouraged to use it in their internal risk control as well as for public financial reporting (EBA, 2017, 47).

From business, or bank, perspective, quality of bank assets, especially loans as the foremost category, is a very important factor of bank profitability as well as its safety.[2] As NPLs rise, funding (non-interest, administrative) costs for banks with the NPLs on their books also increase. These costs are in step with loan loss provisions as funds that bank set aside for covering (or absorbing) expected credit losses (i.e., safety cushion). Higher loan provisions indicate higher credit risk exposure, and vice versa. Although there is no consensus among banks for what constitutes adequate provisions, it is extremely important that those provisions are not too small, which could jeopardize continuity of bank business if realized credit losses are much higher than anticipated (through reducing the bank's capital), as well as too high, which could seriously erode bank profitability when realized credit losses are much lower than anticipated credit losses (tying up significant amounts of the bank's financial resources).[3] Therefore, an adequate management of NPLs implies banks identifying problem loans at an early stage and writing down the value of them equal to the expected credit losses (Fredriksson & Frykström, 2019, 1), as a precautionary measure.[4]

It is clear, according to the concept of risk and return, that higher credit risk needs to be compensated through higher returns, that is – interest rates. Consequently, bank lending to households, businesses, and (subnational) governments becomes more expensive. Specifically, in the situation when bank loans are expensive source of funding and the financial system itself is oriented towards banks (commercial), vast load of shortage of favourable credits are suffering by SMEs. For example, regarding the type of NPLs, in most EU member states NPLs mainly include loans to SMEs; in some countries, NPLs also consist of large volume of consumer loans, mainly those without underlying collateral, that is, unsecured retail NPLs (European Commission, 2018, 5; Fredriksson & Frykström, 2019, 3).

Since SMEs represent approximately 90% of businesses and employ more than 50% of the workforce worldwide[5] and they are less likely to be able to obtain bank loans than large enterprises (particularly at a time of reduced credit supply due to higher credit risk),[6] an upswing trend of NPLs will spill over into the real sector of the economy in terms of further negative economic consequences, such as lower level of investment, fewer jobs, and lower economic growth rate. Therefore, from systemic perspective, quality of bank assets that affects economic growth depend on the volume of bank credit activities towards the business enterprise sector, that is, via credit expansion or contraction in line with the concrete economic conjuncture stage. Additionally, as the global financial crisis 2007-2009 undoubtedly pointed out, NPLs as a kind of toxic assets is a key indicator of banking sector (un)soundness and, when it comes to the countries with financial system that are bank-centric, an important indicator of overall financial (in)stability. For example, as a result of losses on non-performing assets in 2007, both in the USA and in Europe, the interbank lending market dried up as banks lost confidence in each other. The liquidity crisis led to panic among deponents and prevented banks from granting new loans whether to individuals or to companies, and even from refinancing existing loans reaching maturity. The resulting lack of loans, especially for SMEs, "rapidly produced knock-on effects in the real economy and economic growth halted and even began to decline in many countries" (Daykin, 2009, 5). During the subsequent economic recession many banks around the globe confronted with an accumulation of NPLs on their balance sheets considering the previous broad trend towards bank relaxing the criteria for underwriting loans (e.g. granting loans secured by collaterals, which were consisted on properties concentrated in relatively unattractive locations and in poor conditions).

While the USA has succeeded in reaching pre-2008 NPLs level, the EU member states still have not (Enria, 2020; Fredriksson & Frykström, 2019, 2-4). Moreover, the

variations in NPL ratios across the EU countries reflects an asymmetric impact of the crisis, or recession. There are several reasons for the situation, primarily European sovereign debt crisis. Namely, the global financial crisis saw a strong uptake in NPLs in banks' balance sheets, leaving policymakers worldwide concerned by this challenge. This trend was exacerbated for some countries by the 2011 eurozone debt crisis, resulting in an EU-wide peak NPL ratio of 7.5% in 2012. However, NPL ratio trajectories pointed to a significant decline across the EU, which can be mostly attributed to NPL sales and securitizations. In 2018 the ratio for the EU stood below the world average of 6.88%, at 3.2%.[7] Furthermore, unlike the USA, at the time of the crisis the EU had no common bank supervision. There was no common definition of NPLs in the EU, or clear rules for dealing with the NPLs once they had arisen. There are still differences in the taxation system that gives banks in the USA stronger incentives to manage their NPLs at an early stage. Also, there are differences in insolvency regulations and bankruptcy procedures.

Apart from the global financial crisis, from a more general macroeconomic point of view, if several banks are affected simultaneously by large proportion of NPLs, this would risk having an impact on the entire economy. The share of NPLs also affects the condition for monetary policy. Central banks can, in different ways, influence banks' funding costs, which are then passed on to individuals and companies by means of banks adjusting their interest rates on deposits and lending. This is usually called the "transmission mechanism", through which central banks, by increasing or reducing banks' borrowing costs, can accelerate or slow down economic growth. As large volumes of NPLs limit banks' lending, they also reduce the ability of central banks to influence the economy (Fredriksson & Frykström, 2019, 5-6). In a nutshell, a high volume of NPLs at the system level is a deadweight for financial stability, as well as economic growth. Therefore, Almahadin, Kaddumi, and Al-Kilani (2020, 220) used the following function model to explore the role of banking soundness in financial stability:

$$\text{Financial stability} = f\,(\text{Banking soundness})$$

The above model expresses that financial stability is a function of banking soundness, it indicates that financial stability is mainly constructed through banking soundness indicators.

3. Literature review

Contemporary literature covers a wide range of research about NPLs. Many studies have been conducted by experts of IMF, BCBS, EBA, and other authorities. However, while each of them investigated a special aspect of this phenomenon (e.g. prudential, regulatory, and accounting treatment of non-performing assets; impact of loan loss provisioning on bank capital requirements as well as supervisory roles in the process; management of NPLs, etc.), the authors of this paper will attempt to provide a more systematic and comprehensive view of the relationship between NPLs and financial stability and economic growth.

Previously, authors studied determinants of the changes in the NPL ratio in selected countries. Beck, Jakubik, and Piloiu (2015, 525-550) investigated macroeconomic determinants of NPLs across 75 countries over ten-year period (2000-2010) and revealed that the following variables significantly affect NPL ratios: real GDP growth, share prices, the exchange rate, and the lending interest rate. Radivojevic and Jovovic (2017, 300-316) examined the determinants of NPL ratio using a cross-country analysis from the sample of 25 emerging countries using time series data for the period from 2000 to 2011. The results revealed that NPLs can be mainly explained by macroeconomic factors, such as GDP and inflation rate, and bank-specific factors,

such as return on assets, capital to assets, and lagged NPLs rate. Moreover, it suggested that the GDP has a crucial deterministic role for NPL ratio unveiling that the state of the economy of emerging countries is clearly linked to bank assets quality. In other words, a drop in economic activity in these countries is the most important risk for bank assets quality. Further, when evaluated the causality relationship between NPLs, industry volume, and economic growth for 16 African countries for the period between 2001 and 2015, Dinçer, Yuksel, and Adah (2018, 203-228) identified that there is a causality relationship between industry volume and economic growth. In addition, they learnt that a decrease in economic growth is the main cause of the NPLs.

Škarica (2014, 37-59) found that the primary cause of the high levels of NPLs in Central and Eastern European countries from 2007Q3 until 2012Q3 is the economic slowdown, which is evident from statistically significant and economically large coefficients on GDP, unemployment, and the inflation rate. This result is consistent with similar findings by Tanasković and Jandrić (2015, 47-62). They analysed macroeconomic and institutional determinants of growth of NPL ratios in selected countries of Central and Eastern and South-Eastern Europe (that is, Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, Lithuania, Montenegro, FYR Macedonia, Romania, Serbia, and Slovenia) over the period 2006-2013. The analysis included the following macroeconomic determinants of NPL changes: level of GDP, ratio of foreign currency loans to total loans, exchange rate level, average lending rate for new loans, and annual inflation. As the institutional factors the authors included the strength of auditing and reporting standards, the financial market development, and soundness of the banking system. The obtained results suggested, among others, a negative relationship between increases in GDP and a rise in the NPL ratio. Interestingly, from a group of the institutional variables, only the financial market level of development was reported as a statistically significant, which means that with a more developed financial market the level of NPLs should be lower. Muhović and Subić (2019, 21-30) investigated the impact of major macroeconomic and microeconomic factors on the growth rate of NPLs in developing Western Balkan countries, that is, Serbia, Montenegro, and Bosnia and Herzegovina. The empirical results, covered the surveyed period 2000-2015, showed, among others, that NPLs are closely linked to the economic and business cycles, i.e., behind each financial crisis there are macroeconomic factors, such as falls in aggregate economic activity (approximated using GDP). When growth slows or becomes negative, borrowers reduce their cash inflows, making it difficult for them to pay interest and principal. Under these circumstances, borrowers will face a lack of liquidity and delays in meeting their financial obligations to banks are likely to increase. On the contrary, GDP growth is expected to lead to a decrease in the NPL rate. Furthermore, Louzis, Vouldis, and Metaxas (2012, 1012-1027) examined the determinants of NPLs in Greek banking sectors for different types of loan (consumer loans, business loans, and mortgages) from 2003Q1 to 2009Q3 and found that for all loan types, NPLs in the Greek banking sector can be explained mainly by macroeconomic variables (GDP, unemployment, interest rates, and public debt) and management quality. Jordan and Tucker (2013, 371-400), who assessed the impact of NPLs on economic growth in the Bahamas from the period September 2002 - December 2011, found that growth in economic activities tends to lead a reduction in NPLs and there is also a small but significant feedback effect from NPLs to real GDP. These results suggested, among other things, that policy makers should implement countercyclical policy measures, aimed at reducing the potential for a significant build up in NPLs during periods of economic downturn as this could slow the pace of a subsequent economic recovery over time. Investing the factors affecting NPLs in Indonesia during the period 2014-2017, Kartikasary et al. (2020, 97-106) studied macroeconomic variables such as the ratio of public sector debt to GDP, the surplus or deficit of the government budget to GDP ratio, the percentage increase in GDP, annual inflation

rate, and percentage of job seeker level. The microeconomic variables that were studied by the authors referred to the ratio of bank capital to assets, the loans to deposits ratio, the return on assets, and the return on equity. According to the Bank of Indonesia regulations, banks that have an NPL ratio more than 5% are considered to have difficulties in maintaining business continuity. Analysing determinants of the credit risk in Kosovo banking sector for the period 2006-2015, Shkodra and Ismajli (2017, 90-97) concluded that a significant relationship exists between credit risk and variables such as profitability (return on equity and return on assets), inefficiency, loans to deposit ratio, credit growth, and deposit rate.

The study of the macroeconomic determinants of NPLs in Nigeria (2005-2014), conducted by Adeola and Ikpesu (2017, 31-43), discovered that GDP has a positive relationship with NPLs. The results of these authors also revealed that inflation and exchange rate have a positive relationship with NPLs, while lending rate, money supply to GDP, and unemployment rate have a positive and significant relationship with NPLs. Although the previous empirical studies suggested a negative relationship between GDP growth and NPLs, the findings about the opposite relationship can also be found in (Tabak et al., 2007; Inekwe, 2013; Shingjergji, 2013). Tabak et al. (2007, 1-29) found significant but positive link between the GDP and NPLs in case of the Brazilian banks for the period from 2000 to 2005. Although a raise in the growth rate can lead to decrease in the proportion of NPLs, it is possible that, in the expansion phase of the economic cycle, bank raise the risk of the credit portfolio, which could lead to a decrease in the quality of the portfolio with an increase in the NPLs. Moreover, the authors' empirical results indicated that the banking concentration has a statistically significant impact on NPL suggesting that more concentrated banking system may improve financial stability. Examining the relationship between real GDP and NPLs in Nigerian banking industry during the period 1995-2009, Inekwe (2013, 1-7) revealed that there is a significant and positive relationship between the real GDP and the NPLs. Because it was contrary to the findings in previous studies, he recommended that the government should implement policies that will provide the enabling environment for desired improvement in real GDP, and ensure through its regulatory agencies that due process and principles of good lending are strictly adhered to by bank and other financial institutions. Shingjergji (2013, 335-339) investigated the impact of several macroeconomic variables (GDP, inflation rate, exchange rate euro/Albanian lek, and base interest rate) in the NPL level in the Albanian banking sector during 2005-2012. The author identified a positive relationship between the GDP growth and the NPL ratio that is contrary to international evidence. It is expected that a GDP growth will lead to a reduction of NPL ratio because all subjects in one economy when getting higher incomes will be more capable to repay their debts and this will be translated into lower NPL ratios. According to the international evidence, the inflation rate is negatively related with NPL ratio even in the Albanian banking system. The results also revealed a positive relationship between the base interest rate of four quarters lag and NPL ratio in time t as well as a positive relationship between foreign exchange rate euro/Albanian lek and the NPL ratio.

4. Empirical research results and discussion

The Jordanian banking sector is considered as the most vital sector of the country's economic system (Hashem, Alduneibat & Altawalbeh, 2017, 139; Al-abedallat, 2017, 139-140). It is comprised of the Central Bank of Jordan and, according to the Financial Stability Report 2019, 24 licensed commercial banks (20 conventional and four Islamic). The legal definition of NPLs is contained in the Central Bank's Regulation No. 10/1/15040, dated 10/12/2009, and extended in 2017 and 2018. It is in line with the definition provided by the BCBS, for which relevant standards were implemented in the banking sector. In the context of this research, it needs to be

emphasized that before 2005 there were three banks with a high NPL ratio, but in 2005 they restructured their loan portfolios by writing off a substantial amount of NPLs. This reduced their NPL ratio, showing significant improvement.

In order to investigate the impact of the selected macroeconomic determinants, i.e., economic growth and financial stability, on NPLs in Jordanian banking sector, a multiple linear regression model was used, which included variables and their corresponding indicators over the 2006-2019 period as presented in Table 1. The aim of this research is to determine the interdependence between NPLs and economic growth or financial stability. In addition to correlation analysis (a statistical technique that describes the strength and direction of the linear relationship between variables and does not necessarily indicate their interdependence), multiple regression was also utilised. In principle, multiple regression can show us how well a set of variables can predict a particular outcome, as well as which variable in the set is the best predictor of that outcome, making it possible to investigate their mutual causality. The results indicated the ability of this group of independent variables to predict NPL level, showing relationship between dependent and independent variables.

Table 1: Overview of the selected variables and indicators included in the empirical research

Variable	Indicator (in %)	Symbol	Data source
Non-performing loans	Non-performing loans/Total loans	NPL	Central Bank of Jordan**
Economic growth	GDP growth rate	GDP	World Bank***
	Unemployment rate	UR	World Bank
	Money supply (M2) growth rate from year to year	MS	Central Bank of Jordan
Financial stability	Inflation	I	World Bank
	Lending interest rate	LIR	World Bank
	Capital adequacy ratio*	CAR	Central Bank of Jordan
	Growth rate of total deposits in licensed banks	GRTD	Central Bank of Jordan

* As far as the Jordanian banking sector is concerned, minimum CAR is 12%, which is above the minimum requirement under Basel III (10.5%).
** http://statisticaldb.cbj.gov.jo/ (accessed 11 January 2021)
*** https://data.worldbank.org/country/ jordan (accessed 11 January 2021)
Source: Authors' research

Since application of standard multiple regression is conditioned by the fulfilment of certain assumptions on which it is based, before any calculations, a check of their fulfilment was performed for the model, which in the form of a regression equation is as follows:

$$NPL = \alpha + \beta_1 GDP + \beta_2 UR + \beta_3 MS + \beta_4 I + \beta_5 LIR + \beta_6 CAR + \beta_7 GRTD + \varepsilon.$$

The initial verification of the assumptions was performed through the normal distribution of residuals, using normal probability plot of regression standardized residual and scatterplot, presented in Figures 1 and 2.

Figure 1: Normal probability plot of regression standardized residual
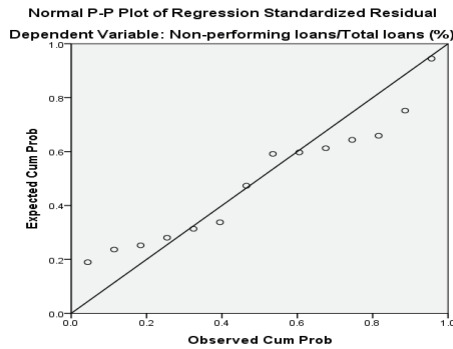
Figure 2: Scatterplot

Source: Authors' research
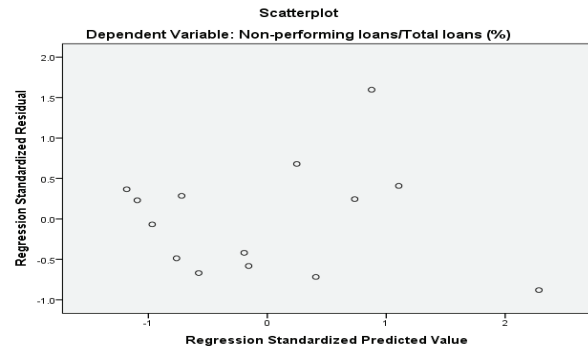
Source: Authors' research

In Figure 1, it can be seen that all points sit on an approximately straight diagonal line, from the lower left to the upper right corner of the diagram, indicating that there are no large deviations from the normal distribution, which justifies the usage of regression analysis. As shown in Figure 2, the existence of atypical points (as an assumption that also needs to be addressed) does not represent a constraint for applying regression analysis.

Descriptive statistics for the indicators included in the research are mostly based on previous research (e.g. Rajha, 2017; Almahadin, Kaddumi & Al-Kilani, 2020; Boudriga, Taktak & Jelloulli, 2010; Badar, Javid & Zulfiquar, 2013; Cucinelli, 2015) and presented in Table 2.

Table 2: Descriptive statistics

Indicator	Mean	Std. deviation
NPL	5.6860	1.6062
GDP	3.7476	2.3599
UR	13.4242	1.1534
MS	7.8086	4.8088
I	3.7406	3.7950
LIR	8.7116	0.3349
CAR	19.0140	1.2031
GRTD	7.3621	4.4013

Source: Authors' research

Considering Table 2, it can be stated that of the eight indicators, the greatest variability was recorded in the indicators MS (4.8088) and GRTD (4.4013). On the contrary, the lowest data variability was recorded when it comes to the LIR (0.3349). Verification of multicollinearity between variables (to which the regression analysis is very sensitive) was performed on the basis of correlation analysis. The results are presented in Table 3.

Table 3: Correlation analysis

		NPL	**GDP**	**UR**	**MS**	**I**	**LIR**	**CAR**	**GRTD**
	NPL	1.000	-0.385	-0.575	0.016	-0.073	0.532	0.128	0.192
	GDP		1.000	-0.223	0.741	0.513	0.036	0.640	0.642
	UR			1.000	-0.514	-0.280	-0.706	-0.341	-0.666
Pearson's	MS				1.000	0.571	0.313	0.620	0.908
correlation	I					1.000	0.240	0.055	0.416
coefficient	LIR						1.000	-0.069	0.571
	CAR							1.000	0.561
	GRTD								1.000

Source: Authors' research

Based on the results in Table 3, it can be concluded that there is a high correlation between certain indicators of independent variables, which indicates multicollinearity. Since it is recommended that the indicators whose absolute value of linear correlation coefficient is 0.7 or more are excluded, the indicators MS and LIR are excluded from further analysis. The subsequent regression equation is written as:

$$NPL = \alpha + \beta_1 GDP + \beta_2 UR + \beta_3 I + \beta_4 CAR + \beta_5 GRTD + \varepsilon.$$

After that, a multicollinearity analysis was performed again, which showed that the correlation coefficients, tolerance coefficients, and variance inflation factors (VIF) were at satisfactory levels. The obtained results are presented in Table 4.

Table 4: Correlation analysis and checking for multicollinearity

		Pearson's correlation coefficient						**Tolerance**	**VIF**
		NPL	**GDP**	**UR**	**I**	**CAR**	**GRTD**		
	NPL	1.000	-0.385	-0.575	-0.073	0.128	0.192		
Pearson's	GDP		1.000	-0.223	0.513	0.640	0.642	0.278	3.593
correlation	UR			1.000	-0.280	-0.341	-0.666	0.449	2.226
coefficient	I				1.000	0.055	0.416	0.535	1.871
	CAR					1.000	0.561	0.411	2.434
	GRTD						1.000	0.295	3.384

Source: Authors' research

Given that its basic assumptions were met, regression analysis was performed to assess the significance of the contribution of the predictor variables included in the model (GDP, UR, I, CAR, and GRTD) in relation to the criterion variable (NPL), and concluded what degree of variance can be explained if the sums on the predictor set of variables according to the dependent variable are known. The values of the multiple correlation coefficient and the coefficient of determination for the model are shown in Table 5.

Table 5: Multiple correlation coefficient (R) and coefficient of determination (R^2)

R	**R^2**	**Adjusted R^2**	**Std. error of the estimate**
0.870	0.756	0.604	1.0104

Source: Authors' research

Starting from the assumption that the coefficient of determination (i.e., R^2) is too optimistic estimate of the actual value of the coefficient of determination when it comes small data set, the value of the adjusted R^2 of 0.604 shows that 60.4% of the total variability in the observed

criterion variable, NPL, can be explained by influence GDP, UR, I, CAR, and GRTD. The rest of the variance, which remains unexplained (39.6%), can be attributed to the factors that were not the subject of this empirical research, for example other macroeconomic variables, like political and economic conditions in the neighbouring countries (i.e., Iraq, Syria, and Palestine), as well as bank-specific factors, like quality of bank management, or bank size. The results of estimating the significance of the regression model are shown in Table 6. It is evident that the model reaches statistical significance (F=4.971, p<0.05), which implies the justification of using these indicators as a predictor of variability of the dependent variable.

Table 6: Estimation of the regression model significance

Model	Sum of squares	Df	Mean square	F	Sig.
Regression	25.371	5	5.074	4.971	.023
Residual	8.167	8	1.021		
Total	33.537	13			

Source: Authors' research

In order to identify to which extent each of the independent variables included in this research contributes to the prediction of the dependent variable, the data shown in Table 7 was calculated.

Table 7: Partial contributions of predictor variables to the forecast results of the criterion variable

	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	ß		
(Constant)	1.396	9.172		0.152	0.883
GDP	-0.742	0.225	-1.090	-3.296	0.011
UR	-0.603	0.362	-0.433	-1.663	0.135
I	0.109	0.101	0.258	1.081	0.311
CAR	0.750	0.363	0.562	2.064	0.073
GRTD	0.066	0.117	0.182	0.567	0.587

Source: Authors' research

Based on the obtained standardized values of coefficients, by which the values of variables (with the aim of their comparison) are converted to the same scale, it can be concluded that the greatest contribution to explaining the dependent variable, NPL, when subtracting the variance explained by all other variables in the model, have GDP (ß=-1.090), CAR (ß=0.562), and UR (ß=-0.433). The contribution of the other two financial stability indicators (I and GRTD) is somewhat lower in explaining the dependent variable. In doing so, as shown in the last column of Table 7, the GDP indicator has a statistically significant unique contribution to the prediction of the dependent variable (Sig.=0.011<0.05). The result about significant and negative relationship between GDP growth rate and NPL ratio is consistent with similar findings by many other authors, such as Rajha (2017); Radivojevic and Jovovic (2017); Dinçer, Yuksel, and Adah (2018); Škarica (2014); Tanasković & Jandrić (2015), etc. However, the findings are in contrast with the analysis conducted by Adeola and Ikpesu (2017), Tabak et al. (October 2007), Inekwe (2013), and Shingjergji (2013).

5. Concluding remarks

The purpose of this article is to provide a more holistic theoretical viewpoint on NPLs and their determinants as well as empirically re-examine their relationship with economic growth and

financial stability due to the existing literature gap. The authors find that there is no unique definition of NPLs, but that there has been some progress of lately when it comes to international harmonization. Also, there is a wide spectrum of the factors/variables influencing NPLs that are usually classified on macroeconomic and bank-specific factors, such as economic growth, unemployment, inflation, interest rates, or bank management quality, return on equity, capital to assets, return on assets, etc. The correlation analysis of the selected variables from Jordanian banking sector over the period 2006-2019 shows that for economic growth indicators there is a negative relationship between NPL ratio and GDP rate (-0.385); in addition, the authors find that there is also a negative relationship between NPL ratio and unemployment rate (-0.575). These findings are consistent with Salas and Saurina (2002), Louzis, Vouldis, and Metaxas (2012), Škarica (2014), Fofack (2005), Jiménez and Saurina (2006), Bofondi and Ropele (2011), Glogowski (2008), and Makri, Tsagkanos, and Bellas (2014). However, the authors find a positive relationship between NPL ratio and money supply growth rate (0.016) that is consistent with Badar, Javid, and Zulfiquar (2013) and Akinlo and Emmanuel (2014). When it comes to the relationship between NPLs and financial stability variables, the authors find that link between NPL ratio and the inflation rate is negative (-0.073), NPL ratio and lending interest rate is positive (0.532), NPL ratio and capital adequacy ratio is also positive (0.128), as well as NPL ratio and growth rate of total deposits (0.192). The latter findings can also be found at Nkusu (2011), Adebola, Wan Yusoff, and Dahalan (2011), Berge and Boye (2007), Shrives and Dahl (1992), and Tracey (2011). Furthermore, the regression analysis of NPLs relationship with financial stability and economic growth in the Jordan case study presented in this paper shows that 60.4% of the variability in the NPL rate can be explained by influence selected indicators of financial stability, such as inflation rate, capital adequacy ratio, growth rate of total deposits, as well as of economic growth, such as GDP growth rate and unemployment rate. Additionally, the results suggest significant and negative relationship between GDP growth rate, as well as unemployment rate, and the NPL ratio that is in line with the widespread evidence on global level. Also, there is significant and positive link between the NPL ratio and the capital adequacy ratio, as the main indicators of banking soundness and, therefore, financial stability of the country. The latter finding is consistent with Chang (2006), but contrary to the analysis conducted by Yulianti, Aliamin, and Ibrahim (2018) and similar findings. This could be a subject for further research.

Based on the overall findings of this paper, conclusions can be driven from the perspective of banks, as well system-wide. Banks should seriously consider in which phase of the economic cycle the real sector of economy finds itself when they are granting loans, because the banks' clients defaults are primary caused by decrease in GDP growth rate, that is, by economic downturn. Looking at a macro level, the policymakers, central banks in particular, should implement countercyclical policy measures, focused on reducing the potential for a significant increase in NPLs during the period of economic downturn, as this could deteriorate already difficult economic situation and delay the economic recovery. For example, in the current "lockdown recession" it would mean that banks should not stop with SME banking activities but rather show flexibility towards those SMEs that face reversible, removable difficulties in their businesses caused by the pandemic. Otherwise, without additional liquid assets, many SMEs cannot operate for more than three months and will go bankrupt. The authors hope that this article will contribute to the existing reference literature in this field and further studies can be done taking into account other variables influencing NPLs, especially those related to bank specifics, expanding data time series as well as number of selected countries (e.g. the countries of the MENA) and, especially, examine the impact of the current pandemic/recession (as an "exogenous shock") on NPLs and comparing this effect with the impact of 2008 recession (as an "endogenous shock"). The ultimate goal of this type of research should be focused on

developing more effective methods for handling of NPLs for both the central bank(s) and commercial banks within a financial system.

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[1] IFRS 9 covers accounting rules related to recognition, measurement, impairment, derecognition, and general hedge accounting. The US version of this standard, under GAAP, is CECL (Current Expected Credit Loss).

[2] Other important factors are quality of bank management, economy of scale, off-balance-sheet operations, cost of business activities, and profit centers.

[3] As an empirical rule, the banking sector tends to underestimate the risk in its lending during the period of economic boom, which has major consequences in the period of economic downturn.

[4] Fredriksson and Frykström (March 2019, 3) illustrated shares of NPLs and provision coverage ratios across the EU countries in June 2018 and found huge differences in the sense that provision coverage ratios are not always in line with the share of NPLs. For example, while Germany had a low share of NPLs and a high provision coverage ratio, Cyprus had a high share of NPLs but lower than average provisions for credit losses.

[5] https://www.worldbank.org/en/topic/smefinance (accessed 15 October 2020)

[6] Moreover, in respect to the most favorable and mostly used source of external financing, SMEs in euro area, for example, reported using bank products, such as bank overdrafts, credit lines, short and long-term credits (Kokorović Jukan & Kozarević, 2015, 115).

[7] The world average of NPLs as a percentage of all bank loans for 2018 was based on 121 countries, with the highest value in San Marino, 53%, followed by Ukraine and Greece. The lowest value of NPLs was registered in Monaco, 0.2% (https://www.theglobaleconomy.com/rankings/nonperforming_loans/, accessed 2 May 2020). The EU average of NPLs ratio at the end of 2018 was taken from the EBA's Report on NPLs (https://www.eba.europa.eu/file, accessed 2 May 2020).

A scientific paper

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WHAT IMPACTS FDI IN EU?

ABSTRACT

There is variety of positive effects of FDI on national or regional economy because it ensures technology transfer, derives export competitiveness, employment and increases business dynamism. During the Fourth Industrial Revolution, there is significant importance of FDI. It is especially related to EU economy because it will help to overcome challenges and difficulties EU is facing with. These challenges are consequences of Covid-19 pandemic and competition represented by other developed and growing economies. Since FDI enhances convergence process, it can decrease differences in development level among EU economies. Research subject is competitiveness of the investment environment in EU and member states for the period 2014-2019. Objective we set is to appoint drivers of FDI in EU and its member countries. Determining key drivers to attract FDI will enable to create recommendations that can be guidelines for macroeconomic policies that will increase competitiveness and convergence level, enhance economic growth of EU and its member countries. Such macroeconomic policies will enable EU to overcome consequences of Covid-19 crisis and remain competitive in global environment in the age of the Fourth Industrial Revolution. The methodology is grounded on a system generalized method of moments estimator for dynamic panel data models and includes 27 EU members. Results show correlation of innovation capacity, tax burden, human capital, ICT and lower government involvement in monetary flows on FDI inflows in EU member countries. Most important contribution within our paper is explanation of important factors to attract FDI in EU, creation of policy recommendations to enhance economic growth, increase competitiveness and convergence level in EU during Fourth Industrial Revolution.

Keywords: *FDI, EU, competitiveness, Fourth Industrial Revolution.*

1. Introduction

National economies compete in the global environment to attract higher amounts of FDI due to their positive effects. UNCTAD statistics (2021) confirm that their total amount increased exponentially from 1970 when it was 13257 million USD up to 1 539880 million USD in 2019. At the same time in EU, it grew from 5158 from to 445531 million USD. Trend was the same in all parts of the world. In the 21st century trend is changing very fast and becomes declining

or increasing every two to four years. It is different by world regions, because more developing economies are integrating to global investment flows. EU is faced with slightly declining trend. Joseph Schumpeter is known by term creative destruction. It is a process of technological shift, where old technologies are replaced by new. Manual labour was replaced with steam engine, steam with electricity. FDI has important role in creation and attraction of new technologies. Since 1970s and start of the Third Industrial or ICT Revolution, ICT started to replace human labour and machines. Adler (2019) refers to Schumpeter`s book Capitalism, Socialism and Democracy. Capitalism is never stationary and always evolving, creating new markets and new products entering the sphere. ICT fostered globalization process, increased level of international trade and investments. One of the major drivers of globalization process became and remain FDI. Leighton (1970) explains it on example of US economy. Total amount of FDI by US companies in 1955 was 20 billion USD. Majority of investments were directed to Canada. In 1968 this amount grew to 65,8 billion with Europe as main destination. Since MNEs developed and enlarged, global business became investment-driven, instead trade driven. In 1967, global FDI output reached the value of 240 billion USD, while export value was 130 billion USD. Galović (2017) states that globalization process was enabled by technological progress and enabled cost decreasing, creation of new processes, products and methods. It is a process that includes overall economic liberalization and opening of economies to capital flows. ICT represent basics for technological age humanity lives in, and it is called Fourth Industrial Revolution. It is term created by German government and represents great opportunity for EU to decrease the gap with other developed economies like USA. FDI are one of the most important drivers of economic growth with multiple positive effects, like: increasing employment, export, quality of human capital, budget revenues and transfer of new technologies. Technological development is the essence of overall economic growth. Industry 4.0 implies development of new technologies, and in case countries don`t want to lag behind, they have to create macroeconomic framework to attract FDI. Lasi et al. (2014) state that term Industry 4.0 is coined in German Federal Ministry of Education and Research and has become another name for a future project in the context of the High-tech strategy 2020. Xu, David and Kim (2018) state that there are variety of opportunities the Fourth Industrial Revolution provides. Its technologies will remove majority of obstacles among innovators, companies and market. Fourth Industrial Revolution is a period based on innovations and technology, but major driver of competitiveness is human capital. This is the reason why age we live in is also known as Knowledge economy. Human capital determines productivity of other resources. Countries that will invest in human capital will be able to compete in global market of 21st century.

European Comission (2020) states that EU is a major recipient of FDI and major global investor. With 17.3% of share in global export and 15.6% in global import EU is leading global importer and exporter. In the age of the Fourth Industrial Revolution in order to decrese development gap, EU has to create enhancing investment environment. Fourth Industrial Revolution will change investment flows from countries with cheap labour force to countries based on knowledge economy. World Economic Forum (2018) states that 74% of future investments will be based on availability of high quality human capital, and not anymore on cheap labour. Covid-19 crisis impacted investment flows. UNCTAD (2021) states that global investment flows reduced 42% in 2020, from 1.5 trillion USD in 2019 to 859 billion USD. Developed countries were faced with hardest decrease, while FDI in EU decreased for two thirds. If we compare it with 2019, when according to OECD (2020), FDI flows into EU increased 14%, this decline represents significant negative shock for EU economy. EU has to prepare for post Covid period where FDI can enhance recovery process. Forte and Paiva (2021) state that main barriers to FDI in EU are legal framework that increases number of regulations, administrative burden and labour market efficiency. Jimborean and Kelber (2017) state that drivers of FDI in CEECs are macroeconomic framework, global level of risk readiness, gross domestic product, population,

taxation level, infrastructure, accession process, return on government bonds, geographical location near developed EU economies, trade-GDP ratio and cost of workforce.

Chong et al. (2009) state that FDI significantly positive affect economic growth. Negative impact could become positive, if the stock market development has attained a particular threshold level. Baharumshah, Law and Saini (2010) explain it doesn`t have significantly positive impact on economic growth, but positively affects economic freedom that is one of main growth drivers. Hossain (2016) states that one standard deviation improvement in fiscal and monetary freedom impacts FDI growth rate for 32.5% and 38.5%. The result suggests that foreign direct investment is positively correlated with the economic growth and economic freedom in the host countries. Globerman and Shapiro (2003) confirm that determinants of FDI in host country are market size expressed in GDP, quality of human capital expressed in human development index, and quality of macroeconomic environment expressed with different variables like Index of Economic Freedom, rule of law, political stability, market law and government effectiveness. Dunning (1993) agrees with it and emphasizes skilled labour and infrastructure as important drivers of FDI.

Objective we set in this paper is to appoint most important drivers of FDI in EU and its member countries. Model includes EU27 countries. Basic hypothesis of this paper is:

1) EU has to create enhancing investment environment through creation of and investments in skilled talent and ICT infrastructure, stronger innovation capacity, tax reduction and lower government involvement in monetary flows.

Chapter 2 provides theoretical framework. Chapter 3 explains econometric model. In chapter 4 can be found explanations of the results. Chapter 5 includes conclusion and policy reccomendations.

Limitation for this research is relatively short period of time taken into consideration. We wanted to examine the period of the Fourth Industrial Revolution that officialy started in 2011. We assume first effects were seen in 2012. We decided to take 2019 as last year of our observation period, because there is a lack of relevant data for 2020. It was the year of global pandemic that disrupted economy. Fast pace of changes makes hard to provide long term policy recommendations. Despite increasing number of papers, there is still lack of relevant researches about Fourth Industrial Revolution, its impacts and especially about FDI in EU in that period. This is another limitation of this paper.There is a lack of data for Malta and Cyprus for skilled talent score measured by IMD that is taken as one of independent variables. Malta is not included in meausurement and Cyprus is included in 2017. This is the reason why recommendations are limited.

2. Literature overview

UNCTAD (2007) defines FDI as an investment that includes a long-term ownership and control by a company from one country over the company in other country. OECD (2021) defines it as type of investment in other national economy where investor from one country establishes a long-term interest in and at least 10% of ownership over a company from another country. OECD considers FDI as important enabler of economic integration, because it impacts cooperation between different economies. FDI enables technology transfer among national economies, enhances international trade and possibility of entrance to global markets, and derives economic growth.

Chowdhurry and Mavrotas (2006) explain that majority of researches related to role of FDI in host economies stress that FDI is one of main sources of capital and enhances domestic investment. It is usually connected with job creation, technology transfer, and enhances economic growth in domestic economy. Relationship between economic growth and FDI is vice versa. Lipsey and Sjöholm (2004) state there are different claims about effects of FDI on

host economy. Impacts are: production of higher quality or cheaper goods and services, resulting in higher consumer welfare, adding capital stock and raising the level of output. Foreign firms pay higher wages in both developed and developing countries. Barrios, Gorg and Strobl (2004) confirm that FDI has positive effect on competitiveness of domestic firms and local industry. Kurtishi - Kastrati (2013) states that to gain all benefits from foreign investments, a healthy enhancing macroeconomic and business environment that boosts domestic and foreign investment, enables incentives for innovation and upgrading labour force skills and creates dynamic business climate, is top priority. Her paper emphasizes effects like technology spillovers, human capital formation support, enhancement of competitive business environment, contribution to international trade integration, improvement of enterprise development, environment and social condition in the host country by relocating cleaner technology and guiding to more socially responsible corporate policies. FDI are primary channels of knowledge, skills and technology transfer, and by that impacts on increasing quality of human capital. FDI improves balance of payments through import substitution, establishing subsidiaries in host countries and usage of subsidiaries to export to another countries. Sas, Gal and Juhasz (2018) examined impact of FDI in Visegrad countries. They emphasize Visegrad countries as great recipients of FDI and their main conclusion is that effects vary by country, but in general FDI has positive impacts on employment and export in ICT, telecommunication services and other business activities. Only in financial services effects are negative. Alguacil, Cuadros and Orts (2011) state that effects of FDI vary by countries and their level of economic development. They confirmed importance of internal and external macroeconomic stability as well as the quality of institutions when evaluating the economic impact of FDI inflows. These variables contribute to economic growth. Impact on economic growth is significant in lower income economies, while it varies in higher income economies. Piscitello and Rabiosi (2005) examined impact of FDI on Italian local companies and confirmed FDI increases labour productivity in these companies. They claim that one of main goals of Italian authorities is attracting FDI, but focus is on greenfield investments, since it brings capital and increases employment.

Faeth (2009) examined determinants of FDI. The micro dimension is related to factors intrinsic to the company itself, such as ownership advantages, cost decreasing and economies of scale, while macro dimension implies market specific factors such as obstacles to entry, resource scarcity or abundance, political stability and risk and market size. Brainar (1997) assesses another drivers like scale economics, size of GDP in domestic currency, R&D investments, possibility of political instability, neighboor economies, EU membership, identical language as national economy where does investor come from, impacts on the international and domestic share of subsidiary revenues and sales volume in overall revenues and sales volume. Galović (2016) states that national economy or firm can be competitive if it invests in human capital since it represents most important creative potential and contributes to higher level of R&D intensity. Enders and Sandler (1996) state that terrorism is another factor that impacts FDI. Bond and Samuelson (1986) showed that national economies can become FDI destinations, with investment incentives, like tax reduction. It is a message to potential investors that business environment in the host country is stimulative for investors. Mudambi (1999) states that government incentives positively affect FDI are tax cuts, loans and infrastructure investments. Root and Ahmed (1978) state that per capita GDP, trade, transport and communication ratio, urbanization level and regular executive transfers encourage FDI. Corporate tax level discouraged FDI. Grubert and Mutti (1991) found that FDI will increase inverse with tax rates and tarrifs. Horst (1972), Caves (1974) and Swedenborg (1979) found that sales volume reached in host economy, capital and labour intensity, investments in promotion, and research and development positively impacts FDI. Braunerhjelm and Svensson (1995) found that agglomeration effects of FDI are present, predominantly in technologically advanced industries

and that market size, the supply of skilled labor and earlier exports pattern affect FDI in host country. Samir and Mefteh (2020) confirm siginificant influence of ICT on FDI and economic growth by strengthening country's economic openness and increasing their participation in international trade. Van Ark and Piatkowski (2004) confirm significant impact of ICT on FDI, productivity and economic growth in EU15 and CEE countries. Innovations are important driver of economic growth. Uzagalieva, Kocenda and Meneses (2012) confirm that innovations foster technological growth which is one of the main sources of economic growth. Anderson (2005) confirms that innovation capacity positively impacts FDI level and R&D in particular country and this correlation is vice versa. Innovation and investment policies should supplement each other.

Education and investments in human capital will be essential to attract FDI. World Economic Forum in report Future of Jobs (2018) states that 65% of today primary school children will work some job that doesn`t exist. Future of Jobs (2020) states that skills for the future are: analytical thinking, innovation, active learning, critical thinking and analysis, complex problem solving, creativity, originality, initiative, leadership, social influence, technology use, design and programming, resilience, stress tolerance, flexibility, reasoning, problem solving and ideation. Lifelong learning and transformation from knowledge to project based learning becomes necessity. Bell (2010) cofirmed that students engaged in project based learning outscore their traditionally educated colleauges. They are superior in answering applied and conceptual problems over students who used standardized tests. Reason for it is because in project based learning students solve real world problems and they learn to self-monitor their progress, accountability.

EU is attractive market for FDI. EC (2020) provides reasons why EU is the largest economy in the world with 500 million consumers and 25000 € of GDP per capita. It is the largest trading block and top trading partner for 80 countries. EU is heterogeneus integration where 27 countries differ in economic, social, cultural and political level. Question is what impacts FDI in EU and what are the effects of it. Galović, Bezić and Mišević (2016) state that terrorism, natural disasters and limitations to cross border financial transactions negatively affect FDI, while GDP per capita has positive impact. Hubert and Pain (2002) state that EU membership increases FDI, while tax competitiveness and government fixed investment expenditure have positive effects on FDI in EU. FDI stock from previous year, industry output and gross domestic product in European Union, researach and development expenditure in Germany, workforce costs, population and patent applications affect FDI. Benassy-Quere et al. (2001) find that the tax burden, trends in exchange rates, gross domestic product differential, geographical location and transport costs reduce FDI. Share of trade in GDP, population and market potential positively affect FDI. Taxation level is especially important. European Parliament (2020) states that in March 2018 is launched the idea of digital taxation and that EU is looking for solution for fair digital taxation. This is OECD idea to establish global digital tax rate. Bauer (2018) states that digital tax is harmful to EU economy. Taxation of digital revenues is opposite to EU's main policy objectives for the digital economy. Not only it is not in accordance with tax efficiency and neutrality, but it also undermines digitalisation, European integration and the Digital Single Market. Bun (2018) agrees with it and states that EC is wrong when it claims that digital companies face significantly lower effective average taxation rates then non digital. Janicki and Wunnava (2004) confirm that EU accession process had positive impact on FDI in candidate countries. Main determinants were market size (GDP), host country risk, labour costs and trade openess. Popovici (2016) analyzing determinants in New Europe countries, finds that market size or total GDP, labour costs, overall infrastructure and public debt are enablers of FDI. Shahmoradi, Thimmaiah and Indumati (2010) examined determinants of FDI in developed economies in EU and the world from 1990. They state that FDI was a driver of transition of host economies from centrally planned economies to market economies, due to transfer and

diffusion of financial capital, technological and managerial knowledge, and that determinants of FDI in high income countries change over years. They find that balance of payments and FDI outflows significantly impact FDI inflows, while GDP impact was insignificant. From 2000, export positively impacted FDI, while in certain years, GDP and skilled labour negatively impacted GDP. Özkan-Günay (2011) finds that EU countries differ in FDI determinants and the biggest differences are among EU15 countries and New Europe. In EU15 countries tax burden significantly negative impacts FDI. Gross capital formation has significantly positive impact. GDP impact is insignificant, while macroeconomic stability, price of gas and oil show unexpected signs. In new member countries GDP and gross capital formation, high technology export, internet access and decrease in gas and oil prices significantly positive affect FDI, while macroeconomic stability doesn`t have significant impact.

Pegkas (2015) confirms significantly positive impact of FDI on Eurozone countries. Moudatsu (2003) states that FDI affects positively economic growth of EU directly and indirectly through increasing trade openess. Moudatsu and Kirikilis (2011) find that economic growth and inward FDI in EU are interdependent, while effects differ by country. EU countries want to attract FDI to increase export, productivity, knowledge capacity and technology level. Albulescu and Tamasila (2013) confirm in their paper that inward FDI positively affects enterpreneurship level in EU countries. Bezić, Galović and Stojčić (2016) state that economic recovery of developed EU economies after crisis from 2009 was export driven and based on manufacturing. Fastest growing regions in these countries are those with the fastest growing share of manufacturing in their value added. Such reasoning signals are repositioning European industries towards sophisticated industries characterized by high value added, knowledge and technological intensity. Ciobanu and Florina (2020) state that FDI significantly positive affected economic growth of CEE countries between 2009-2018 through increasing export, labour productivity, transfer of innovation, capital and technology. They estimate that due to Covid crisis, decrease in FDI will cause significant economic decline of these economies.

3. Data and methodology

In analyzing determinants of FDI in EU27 we have choosen generalized method of moments two step estimations dynamic panel with asymptotic standard errors function. Galović, Bezić and Mišević (2018), referring to Ullah et al. (2018), state that the two-step estimator is asymptotically efficient and robust to whatever patterns of heteroskedasticity and cross-correlation between the sandwich covariance estimators exist. Sequeira and Nunes (2008) state that dynamic panel model enables more degrees of freedom, more accurate estimators' large sample properties, and lower level of endogeneity, because of particular country effects, omitted variables, vice versa correlations and standard error. Das (2019) states that dynamic panel is widely used in macroeconomics due to usage of lag dependent variable and dynamic adjustment of the model. GMM ensures coherent estimations of data parameters with finite time periods and large cross section dimension. GMM estimator enables asymptotically efficient conclusions based on small number of assumptions. Allisson (2019) states that panel data have two big attractions for making causal inferences with nonexperimental data: ability to control for unobserved, time-invariant confounders and to model the direction of causal relationships. He states that the most popular econometric method for estimating dynamic panel models has been the generalized method of moments that relies on lagged variables as instruments. Brañas-Garza, Bucheli and Garcia Munoz (2011) state that usage of dynamic panel data models in the context of experiments enables to explain novel correlations among experimental variables and emphasize different types of their behaviors. Dynamic GMM estimators created in our econometric model are: differentiated (Arellano – Bond 1991) and system (Arellano – Bover 1995; Blundell – Bond 1998).

Research is questioning FDI determinants in EU27 countries for the period 2014-2019 and is based on 128 observations.

Equation below (1) represents dynamic model that includes single time-shifted (lagged) variable:

$$y_{it} = \beta y_{it-1} + u_i + v_{it}, \ |\beta| < 1$$

Galović and Bezić (2019) explain that in equation, y_{it} is set as dependent variable in period t; y_{t-1} represents dependent variable with lag for one period from t; u_i marks individual time-invariant effects. Value v_{it} is the random error. Individual effects were considered as stochastic. Another important assumption for the invariancy of the model are errors v_{it} which are serially uncorrelated. Individual time-invariant effects are mostly related to previous effect of the dependent variable in our model, that aims to before explained problem of endogenity.

4. Model results and discussion

Model, we will use in this research is based on theoretical framework:

$$LNFDIglo = \beta_0 + \beta_1 \, LNFDIglo(-1)_{it} + \beta_2 \, LNGII{\sim}_{it} + \beta_3 \, LNtaxbur{\sim}_{it} + \beta_4 \, LNskilltal_{it} + \beta_5 \, LNICTinfr_{it} + \beta_6 \, LNmonfree \sim_{it} + \sum_{t=2015}^{2019} year_t + u_{it} + v_{it}$$

Detailed results of our model are in Appendix.

Table 1: Model results

INDEPENDENT VARIABLE	VALUE
Lagged dependent variable *LNFDIglo(-1)*	0,0113307
const	−34,3709***
LNGII~	2,94536***
LNtaxbur~	1,54065***
LNskilltal~	1,49064***
LNICTinfr~	1,58724***
LNmonfree~	1,90883
T3	−0,701822***
T4	−0,568355***
T5	−0,331943
T6	−0,380827**
MODEL DIAGNOSTICTS	
Number of observations	128
Number of instruments	24
Wald test	310,399
Prob>chi2	0,0000
Sargantest	15,8881
Prob>chi2	0,2552
Arellano-Bond test for AR(1) in the first differentions	-1,60507
Prob>chi2	0,1085
Arellano-Bond test for AR(2) in the first differentions	0,215499
Prob>chi2	0,8294

Explanation: P-values are marked with signs ***, that implies level up to 1% significance, and signs **, that imply level up to 5% significance. P-values were obtained by calculating the two-step dynamic procedure.
Source: Author`s calculation

LNFDIglo is taken as dependent variable. It represents percentage of global FDI inflows in national economy. Values are taken from database UNCTAD (2021). In the age of globalized economy for each country is important to be engaged in global trade and investment flows. This is the reason why we decided to measure what impacts percentage of global FDI inflows in EU economies and their participation in investment flows. *LNFDIglo(-1)* is taken as a proxy for global percentage of FDI inflows from previous years. OECD (2021) states that FDI flows imply the amount of direct investments outside of investors`s country in particularly observed period. Inflows are related to enhancement of the investment that companies or residents from other countries have in companies placed in host country reduced for transactions that decline the investment of that companies or residents from other countries in domestic companies. FDI flows are expressed in US dollars. *LNGII~* is taken as a proxy for innovation capacity and is taken from Global Innovation Index database. Index includes different indicators like investments in R&D as percentage of GDP, private investments in R&D, STEM graduates, collaboration between universities and industry, universities ranked in QS 1000, intangible assets, knowledge output, different ICT indicators etc. It is measured by Cornell University, WIPO and INSEAD Business school. Reason, why we decided to take it as a proxy for variable innovation capacity is because it consists of indicators that represent basics for the Fourth Industrial Revolution. Indicator *LNICTinfr~* from Global Innovation Index is taken as a proxy for quality of ICT infrastructure. Global Innovation Index score and its indicators are measured in scores from 0 to 100 or 0 to 10. Higher score means country performs better in certain indicator. Two indicators of Index of Economic Freedom are taken in this model. *LNtaxbur~* or fiscal freedom is taken as a proxy for tax burden set by central authorities and measures taxation level in host economy. It is related to direct taxes that imply top marginal tax rates on individual and corporate incomes, and overall taxes, that implies all types of direct and indirect taxation at all levels of government, as share in GDP. *LNmonfree~,* monetary freedom, is taken as a proxy for regulatory efficiency. The score for the monetary freedom component is based on two factors: weighted average inflation rate for recent three years and price controls. Indicators in Index of Economic Freedom are measured in scores from 0-100. Higher score means higher level of monetary and fiscal freedom. IMD (2020) score for skilled talent is taken as a proxy for quality of human capital that is according to relevant literature crucial driver of FDI.

Used indicators show expected results. There is an evident significant impact of innovation capacity, tax burden, skilled talent and ICT infrastructure on percentage of FDI global inflows. If GII score grows 1%, global percentage of FDI inflows will grow 2.94%. If tax burden score grows 1%, global percentage of FDI inflows will grow for 1.54%. If IMD World Talent Ranking score grows 1%, global percentage of FDI inflows will grow 1.49%. If quality of ICT infrastructure grows 1%, global percentage of FDI inflows will grow 1.5872%. Results for this indicators are confirmed with 1% significance. Percentage of global FDI inflows from last year and monetary freedom have positive effect, but there is no significant correlation. If global percentage of FDI inflows from last year grows 1%, global percentage of FDI inflows in present year will grow 0.01%. Growth of monetary freedom for 1%, causes global percentage of FDI inflows growth for 1.90%.

Arellano-Bond test confirmed there is no second order autocorellation, since coefficient value is 0.8294, while the highest value that determines it is 0.05. Sargan test value (Prob>chi2) equals 0.2552, what is bigger than 0.05. It confirms model is satisfactory and accurate. Wald test is significant and it confirms satisfactory explanatory power of used variables. Tests we did can confirm model is set appropriately.

5. Conclusion and policy recommendations

Researching databases and papers, we find that FDI in EU during Fourth Industrial Revolution is understudied topic. Objective of this paper was to appoint drivers of FDI in EU in the period 2014-2019, that relates to the Fourth Industrial Revolution. Our model was grounded on previous researches about drivers of FDI. We consider results of our model as the most important contribution. Not only because, we appointed drivers of FDI, but also because topic is understudied and results provide relevant cognitions for EU economic, industrial and trade policy. Results of the model are in accordance with relevant literature. There were two indicators taken from Index of Economic Freedom, measured by Heritage Institute: tax burden and monetary freedom. Our results indicate that lowering tax burden and government involvement in monetary flows, especially through price control, significantly positive affects FDI. It is in accordance with relevant literature in this paper that emphasizes impact of overall economic freedom for attracting FDI. References in theoretical framework state that skilled talent and human capital will be crucial driver of FDI and this is confirmed in our model. EU has to invest in creation and development of its own human capital through education system and create encouraging environment to attract and retain it. Third Industrial Revolution that is known as ICT revolution is characterized with exponential rise of FDI (see Leighton, 1970). ICT infrastructure significantly positive impacts FDI. This is the reason why EU has to constantly upgrade it, especially during Fourth Industrial Revolution. Digitalization is marked as one priorities in EU policies and its pace has to be faster. We didn`t find many papers that are dealing with impact of innovation on FDI, especially in EU. Researches examine mostly reverse impact and confirmed that FDI positively affect innovation activity. Our results indicate significance of innovation performance to attract FDI that implies neccessity of encouraging of innovations in EU. Despite, our findings, there are questions that remain open and provide possibilities for further research. Since, 21st century and Fourth Industrial Revolution are characterized with technological discoveries and radical innovations that cause fast change of trends, most important question is time validity of our results. They are in accordance with relevant literature, but open questions are: What will drive FDI in EU in the following decades? Another unanswered question that leaves possibility for further research is related to differences in FDI drivers and its structure in each member. But, we consider that results of our model and literature, we examined, provides guidelines for EU and member countries policy makers to create encouraging environment to attract FDI.

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Appendix 1
Model 17: 2-step dynamic panel, using 128 observations
Included 26 cross-sectional units
Time-series length: minimum 2, maximum 4
Including equations in levels
H-matrix as per Ox/DPD
Dependent variable: FDIglo
Asymptotic standard errors

	Coefficient	*Std. Error*	*z*	*p-value*	
FDIglo(-1)	0,0113307	0,0116786	0,9702	0,3319	
const	−34,3709	7,38322	−4,655	<0,0001	***
lnGII	2,94536	0,449742	6,549	<0,0001	***
lntaxbur	1,54065	0,428824	3,593	0,0003	***
lnskilltal	1,49064	0,274319	5,434	<0,0001	***
lnICTinfr	1,58724	0,391614	4,053	<0,0001	***
lnmonfree	1,90883	1,92806	0,9900	0,3222	
T3	−0,701822	0,204871	−3,426	0,0006	***
T4	−0,568355	0,214756	−2,647	0,0081	***
T5	−0,331943	0,212419	−1,563	0,1181	
T6	−0,380827	0,158416	−2,404	0,0162	**

Sum squared resid	284,3720	Standard error	1,559016

Number of instruments = 24
Test for AR(1) errors: z = -1,60507 [0,1085]
Test for AR(2) errors: z = 0,215499 [0,8294]
Sargan over-identification test: Chi-square(13) = 15,8881 [0,2552]
Wald (joint) test: Chi-square(6) = 310,399 [0,0000]
Wald (time dummies): Chi-square(4) = 49,2912 [0,0000]

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SUSTAINABLE DEVELOPMENT OF RURAL TOURISM DESTINATIONS – ATTITUDE OF THE LOCAL COMMUNITY

ABSTRACT

Aims of the paper - In the tourism planning of rural destinations, the public local administration and the destination management should take into account the wishes, suggestions and initiatives of the local community which will ensure a systematic and quality tourism development of the destination. The foundation of the paradigm of sustainable tourism development rests on the local community, e.g. its direct and indirect support in the process of tourist planning and development. The aims of this paper are to investigate attitudes, suggestions and initiatives of the local community which could contribute to forming sustainable tourism development in the observed rural destinations.

Methodology – The primary research is conducted by examining the attitudes of the local community, in 2020 on six rural tourist destinations of the County of Požega and Slavonija. The survey was conducted on a random sample of 258 individuals over 18 years old. The survey was placed through social networks and the Internet. The results of the research presented in this paper are formulated on the basis of the data collected. Data collected through the primary research was analysed using appropriate quality and descriptive statistical methods.

Results – The results of the research have shown the local community is completely aware of the tourist potential of the area they live in. Based on this research, the local community sees long-term planning, full community participation and networking as the three main elements for establishing sustainable tourism of rural destinations. Understanding the attitude of the local community can assist the policy makers and development planners to carry out a better assessment of the community's perception in terms of the direction of tourism development.

Keywords: *rural tourist destination, local community, attitude of the local community, sustainable tourism development.*

1. Introduction

The aim of this paper is to investigate the attitudes, proposals and initiatives of the local community which could contribute to setting up sustainable tourism development in the

observed rural destinations. The relevant tourist literature and global practical examples, according to Bramwell, (2011), shows that inclusion, attitudes and support of the local community have a strong impact on tourism development. Therefore, understanding the community's attitudes can help policy creators and development planners to have a better perception of that community and the course of its tourism development. In order to create public policies, which aim at social benefits (OECD, 2016), it is crucial to understand and monitor the citizens' welfare on the local and regional levels. Scientists like Fang (2020), Falak et al. (2014) highlight there is not enough research on the role of local communities in rural tourism. With its natural and cultural heritage as well as traditional values, the local community contributes to the destination specific features which make it more attractive to the visitors. It has an important role in the development of tourism and its active inclusion is considered crucial for the success of the community's sustainable development (Cole, 2006; Tosun, 2006; Saufi, O´Brien & Wilkins, 2014).

Primary and secondary data sources have been used for the purpose of this paper. Primary research has been conducted through a structured online survey sent via e-mail, the internet and social networks. It was completed anonymously between August and October 2020. The survey was completed by a total of 258 examinees from six continental tourist destinations with central administration in the County of Požega and Slavonia. This is an entirely rural area with exquisite natural and social tourist destinations which have not been evaluated enough as tourist destinations. This is also confirmed by the number of the visitors to this County in relation to other continental counties (Ministry of Tourism of the Republic of Croatia, 2019). General scientific methods of deduction and analysis have been used for processing and interpreting secondary data sources. On the other hand, the method of descriptive and statistical analysis was used for the purpose of the primary research.

The results of the conducted empirical research are presented in this paper in comparison with the opinions and conclusions of other authors which had already conducted research on the attitudes, proposals and initiatives of the local research in the world and in Croatia. The results of this paper have shown the local community is fully aware of the role and the significance of tourism development in rural areas they live in as well as tourism potential, disadvantages and obstacles of establishing a systematic and quality development of the destination's tourism. Based on this research, the three main elements of establishing sustainable tourism of rural destinations from the aspect of the local community are: promotion of hospitality capacities, promotion of marketing activities, development of new and promotion of the existing events, community engagement and networking of key stakeholders, both on the local and the regional level. The paper brings the results of this research to propose critical implications the local authorities and destination management should take into consideration in the process of tourism planning and development in rural areas. Understanding the attitude of the local community could help policy creators and development planners to conduct a better assessment and to appreciate the community's course of developing sustainable tourism.

2. Reference overview

Even though rural tourism has been the subject of many discussions in the works of many world experts, a firm consensus over its definitions has yet to be brought (Pearce, 1989:21; Petrić, 2006:140; Lebe & Milfelner, 2006:1137; Nair et al., 2015:314; Tubić, 2020), and a more intensive studying of rural tourism starts quite late (Gartner, 2004:151). For the purpose of this paper, the terminology of rural tourism defined by Ružić (2012:219) will be used, and which highlights rural tourism as rural area, e.g. its physical and sociocultural features. Rural areas

are commonly marked by extremely rich natural, cultural and traditional heritage as well as the problems of depopulation and abandonment of traditional practices. For this reason, the present rural areas are mainly characterised by a small number of mostly older population, small agricultural family farms and underdeveloped infrastructure. In such circumstances, it is quite often that tourism seeks a sustainable development solution for the rural area. According to Ružić (2012:219), this type of tourism was developed outside city centres with a vast array of natural and social special features and with small population, where the land is used predominantly for agricultural production and where the social structure and customs have been partially preserved (Ružić, 2012:217). The same author continues to define rural tourism as an activity or a movement which brings urban people back to nature (Ružić, 2009:17). Furthermore, Pröbstl-Haider, Melzer and Jircka (2014:216) define rural tourism as a type of tourism depicting country life, art as well as natural and cultural heritage of a rural area.

Tourism presents an optimal scenario for the development of rural areas considering their roots lie in the rural tradition, cultural, local community and original products and services. The concept of rural tourism, with its unique, recognisable and eco-friendly products becomes a new solution for the development of tourism in the world (Giampiccoli et al., 2020). The development rural tourism in a community strengthens rural resources as a component of comparative and competitive advantage. Rural tourism is also becoming a more popular tool of state agencies for economic development of underdeveloped and depopulated areas. Not only is the development of rural tourism useful for the emergence of alternative tourism in order to meet the changeable tourist interests, but it can also be used as a solution to the problem of poverty as well as preservation of culture and environment. Certain studies (Ursache, 2015) show that rural tourism could improve the identity of an entire state since it is closely linked to life-styles, local production, cultural manifestation and heritage. When visiting rural destinations, the visitors have a chance to enjoy the activities and attractions of rural areas and acquire positive experience which will probably make them revisit the destination (Komppula, 2014).

As an answer to the new circumstances caused by the COVID 19 pandemic as well as changes of tourist interests, tourism possibilities of the Republic Croatia have been developing in the form of rural tourism. Rural areas offer possibilities for various tourist activities closely related to nature, people and tradition. Rural tourism presents one form of an economic opportunity since its development could motivate various economic activities, such as return of the population, especially since the demand for this type of tourism is growing continuously (Soldić Frleta, 2015).

Sustainable development of rural tourism could be defined as tourism focused on certain policies and strategies which could guarantee certain benefits for the community and the host, at the same time limiting tourism's negative influence on the rural community. Sustainable tourism of rural areas should be in compliance with the following principles: minimisation of the impact of tourism activities on the local activities on the natural environment for the purpose of achieving ecological sustainability; minimisation of negative impacts of tourist activities on the culture, tradition and customs of the local community for the purpose of achieving cultural sustainability at the same time maximising the benefits for the local community. This implies revitalisation of rural areas and increasing the quality of life in these areas as well as preserving the rural way of living, tradition and customs, promotion of the quality of agricultural production and life. Moreover, the trends of the tourist demand reveal that tourists are becoming increasingly interested in specific alternative forms of tourism, where rural tourism ranks quite high. Alternative tourism wants to avoid traditional destinations of mass character, focusing on

responsible and ethical attitude of consumers participating in alternative, that is, selective forms of tourism.

Ensuring sustainable tourism development in rural areas is reflected in perceiving developmental needs of the local community. Consequently, tourism development in rural areas, as well as the demand for work intensive products, i.e. crafts and agricultural products will lead to employment increase. Rural tourism could act as a catalyst for the entre line of new entrepreneurial activities, partnerships and networks (Oliver & Jenkins, 2005).

The key bearer of tourist development in rural area on the principles of sustainable development and responsible tourism is precisely the local community and its inclusion. Tourism development on the rural areas will be more successful if local communities are included since their perception and attitudes are important in achieving sustainable tourism (Eshliki & Kaboudi, 2012). The inclusion of the community can be defined as a process in which people are included in everyday activities inside the community they live in (Lee, 2013). However, in many rural areas the key participants, i.e. public local administration, representatives of the tourist industry, physical planners neglect this important fact and they are opposed to the idea of the community's inclusion in tourism development of (Ma et al., 2020; Fang, 2020). Important studies, which have conducted research on the local community's participation in tourism development, show that their will to be included in tourism and their behaviour towards tourists is a strong indicator of tourism sustainability (Jurowsky & Gursoy, 2004; Weawer & Lawton, 2006, Choi and Shirakaya, 2010; Vargas-Sáchez et al., 2011, Saufi et al., 2014, Birkić et al., 2019). It is important to understand the attitude of the local communities because if their attitudes are understood, then tourism participants are able to adopt appropriate mechanisms for establishing sustainable tourism development in rural areas (Sharma & Dyer, 2009). The term participation of the local community implies all tourist activities the local communities undertakes, keeping the economic benefits on the local level and promoting favourable social results, such as tourism related education and training (Saufi et al., 803, 2014). From the perspective of tourism development, the concept of community participation is in compliance with Scheyvens (2002), who claims the activities of the local communities should be regarded successful only if the participation of the local community brings some kind of measure for controlling the use of tourist resources and if they have equal shares in the distribution of economic and social benefits which result from being active in tourism (Choi & Shirakay, 2005).

With its natural and cultural heritage as well as traditional values, the local community adds to the destination's specific features which make it desirable to the visitors. The local community has an important role in the development of tourism and its active inclusion is considered crucial for successful sustainable tourism of the community (Cole, 2006; Tosun, 2006; Saufi, O´Brien & Wilkins, 2014). It is directly interested in its successful growth and development.

Furthermore, Shibin et al. (2020) consider inclusion of the local community and its support as very important for the success and development of rural tourism on the foundations of sustainability. Based on the results conducted by Wardana et al. (2020:1498), it has been proven that the variables of local community's inclusion are closely linked to the variable of comparative advantage of rural tourism. Scientists like Thongma, Leelapattana and Hung (2011), Hjalager (2010) claim that the local community is the one that introduces the tourists to their local life-style, culture and traditional heritage of the area they visit. In that sense, the local community acts as a cultural mediator, shrinking the distance between the tourists and their destination. In other words, the local community allows and encourages the tourists to explore their culture, tradition, natural and cultural heritage, at the same time adding to their experience (Kastenholz et al., 2012). The local community helps tourists explore rural areas and enjoy the

experience. They also become disseminators of the knowledge on history, culture, tradition and nature of the area. The development of tourism in rural areas and inclusion of the local community encourages preservation of the rural way of life, tradition and customs and promotes quality agricultural production and life. Since it is included in tourist activities, the local community can benefit from selling accommodation units, different programmes, workshops as well as selling agricultural products, food and drinks. The benefits perceived by the local community affect the relation between the inclusion and support of the community to establish sustainable development of rural tourism (Lee, 2013). The connection with the community and its participation are crucial factors for establishing and developing sustainable tourism in rural area.

3. Methodology

The purpose of this paper is to investigate attitudes, proposals and initiatives of the local community which can contribute to establishing sustainable tourism development in the observed rural destinations. The survey was conducted in six rural tourist destinations (Požega, Pleternica, Kutjevo, Lipik, Pakrac, Velika.

The administration office of these destinations belongs to the County and Požega and Slavonija, also known as the Golden Valley. Primary and secondary research has been conducted for the purpose of investigating and writing this paper. The secondary research was conducted using desk method. Secondary data has been collected from official statistical reports, scientific and professional articles of local and foreign authors and relevant websites. The primary research has been conducted using a structured online survey composing of a combination of open and close ended questions. The research was conducted in a manner that the examinees, that is, the residents of the destinations (Chart 2) were sent an e-mail invitation for participating in the research, using a database of the examinees of the tourist board of the observed destinations. A total of 450 invitations were sent and a total of 258 examinees responded. Although the structured survey contained several subgroups, the most relevant variables have been selected for this paper: the attitudes of the examinees versus the influence of tourism on the local community, the presumptions important for the development of tourism, challenges of tourism development in the selected destinations, the degree of the use of potential of the tourist offer in destination and knowledge of the local community about the tourist offer and the events in their destinations. The answers were grouped in specific categories by applying qualitative analysis of responses.

The online survey was conducted anonymously between August and October 2020. The survey was conducted on a random sample of 258 examinees (≥18 years), e.g. the local community of the rural destinations.

The paper uses general scientific methods of deduction and analysis for interpreting secondary data sources, and the method of descriptive and qualitative statistical analysis was used for the conducted primary research. The data collected thorough primary research was analysed using appropriate descriptive statistical methods and Statistica, Version 12 software package for social sciences. On the basis of the collected and processed data, the research results have been formulated and grouped in tables as well as graphics and images as follows. Chart 1 shows the structure of the examinees based on spatial distribution, that is, residence of the examinees.

Chart 1: Structure of the examinees who participated in the research, based on their residence
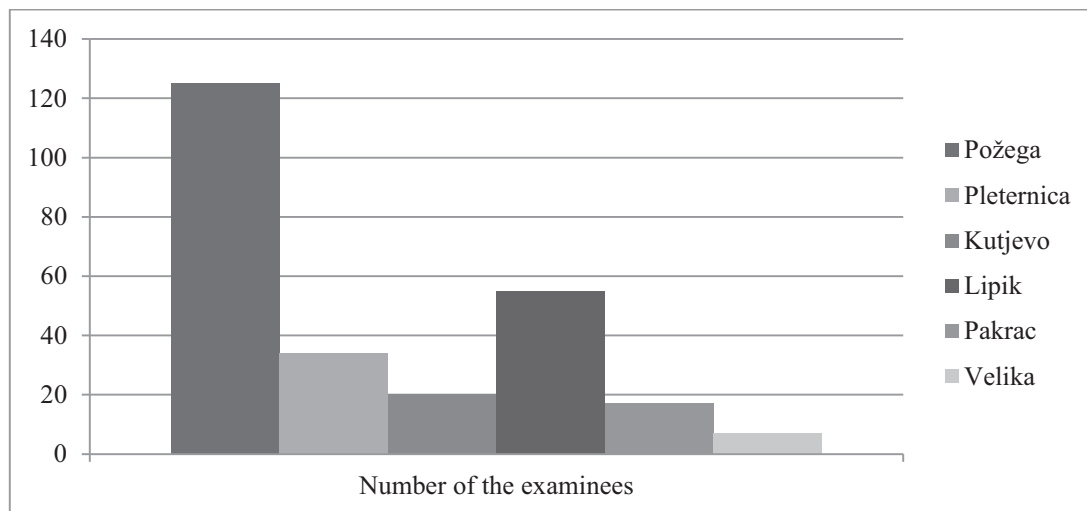
Source: Authors

Based on the data in Chart 1, in relation to total number of the examinees the biggest share of the examinees is from Požega (43.45%), which also has the highest population compared with other observed destinations. Požega is followed by Lipik (21.32% examinees) and Pleternica (13.8% examinees). With 2.17%, Velika has the smallest share of examinees. Compared with the structure of the population and the research sample, it can be concluded that the sample is representative which is important for the quality of the research and making conclusions. A total of 59.33% women and 40.60% men participated in the survey. Chart 2 shows the structure of the examinees based on age.

Chart 2: Age of the examinees
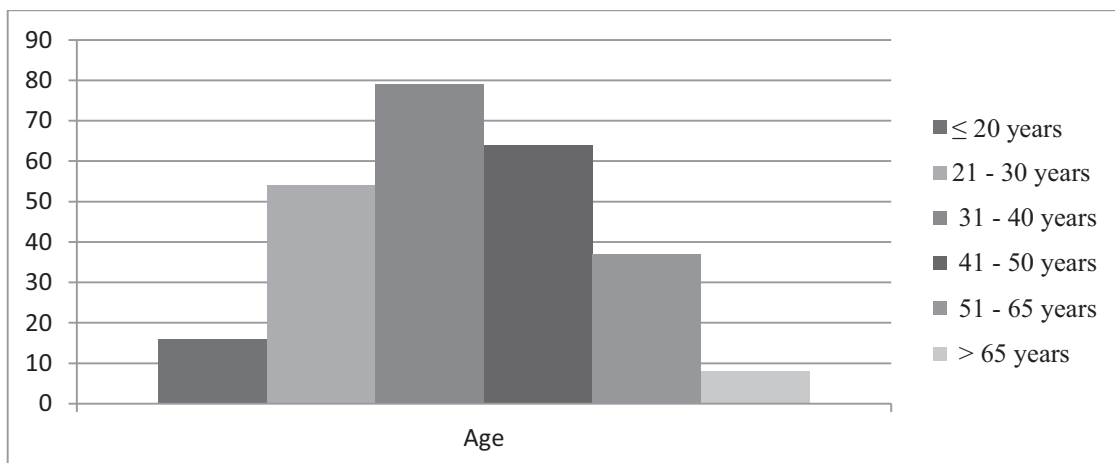
Source: Authors

Based on the data in Chart 2, it is clear that the group of the examinees between 31 and 40 years of age is the biggest one (30.6%). It is followed by the 41-50 group with 24.8% and 21-30 years with 20.9%. The smallest group is the group over 65 with 3.1%, which is understandable since the survey was conducted online and through social networks. Regarding education, most of the examinees completed secondary education, which is evident in Chart 3.

Chart 3: Educational structure of the examinees
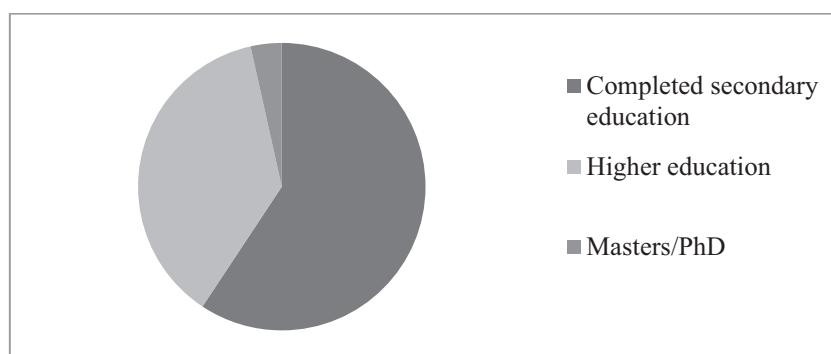
Source: Authors

Regarding the educational structure of the examinees, based on the data in Chart 3, the majority of examinees has completed secondary education (59.3%), followed by the examinees of higher education (37.2%). The group of the examinees with Masters or PhD was the smallest (3.5%).

4. Results of the survey

The main advantages tourism brings to the local community through the economy are income growth, higher employment rate, increased capital investment and public income as well as promotion of local development. The influence tourism has on the local economy varies from destination to destination, and relates to total sum of the initial tourism expenditure achieved in economic activities which directly absorbs tourist consumption. Concerning economic interests of the local community, they mainly refer to hiring the residential (local) community, that is, achieving income within the framework of activities (private and public) the tourism system consists of and which are the source of the material basis of this area.

It is important to highlight that in the context of sustainable development of rural tourism, economic benefits from tourism have to be equally distributed in the society (Choi and Sirakaya, 2005). The local community carries the heaviest load of tourist development. Besides economic benefits, it suffers negative consequences of tourism development, which means that the benefits deriving from tourism development must be primarily oriented to satisfying the interests of the residential (local) community of the rural destination. The attitude of the local community towards tourism development is under the influence of various factors, i.e., how economic benefits from tourism are distributed in the society. The community which depends on tourism, that is, if they are directly or indirectly employed in tourism, tend to favour tourism. In that sense, it is appropriate to investigate how many examinees are employed in tourism and in what time framework. The numbers of the employed in tourism during the past year are shown in Table 1 below.

Table 1: The number of the employed in tourism during the past year

Time framework	Number of the examinerews	%
2 months	5	1.94
3 months	4	1.59
6 months	4	1.55
7 months	1	0.39
8 months	1	0.39
The entire year	25	9.69
Not working in tourism	218	84.5
TOTAL	258	100

Source: Authors

Based on the results in Table 1, it is evident that out of total number of the examinees, even 84.5% of them are not employed in tourism. Out of total number of the examinees, only 15.5% examinees work in tourism, of which 9.69% examinees work in tourism during the entire year, and others only several months a year.

As it has already been highlighted earlier, establishing and developing rural tourism in economically underdeveloped, and demographically devastated area, has the goal of improving the welfare of the community and overcoming unemployment issues through achieving higher life quality of the local community. Based on the research conducted by Kaliterna Lipovčani et al. (2007), it can be concluded that the welfare of the citizens of Croatia is poorer when they receive lower income.

Positive economic effects of tourism are the reasons for a subjective satisfaction with life due to employment and income resulting from tourism (Birkić, 2016). The majority of job vacancies in tourism do not generate an averagely high income per employee, but in many other cases, tourism is one of the best, if not the only possibility for employment in rural areas. Following are the results of research relating to the examinees' attitudes considering the effect of tourism on the local community. The examinees were given the task to mark the statements they most agree with in terms of how much tourism influences the local community. The results of the research have been shown in Table 2.

Table 2: Attitudes of the examinees regarding the influence of tourism on the local community

Influence of tourism	Examinees	%
Tourism has an extremely positive influence in the local community	181	70.16
Tourism has a negative influence on the local community	2	0.78
Tourism does not have a significant influence on the local community	18	6.98
It is important to strengthen tourism	89	34.50
It is not important to strengthen tourism, we have other priorities	9	3.49
Tourism can be positive for the development of the local community, but with the development of agriculture	90	34.88

Source: Authors

Based on the results of the research presented in Table 2, of total number of examinees, even 84.5% examinees are not employed in tourism (Table 1); 70.16% examinees agree that tourism has an extremely positive influence on the local community. There is a close link between rural tourism and agriculture. Agriculture is one of the basic components of the development of rural tourism (Mazil, 2010), and based on the research results we see that this is recognized by the examinees. Therefore, 34.5% examines think tourism should be strengthened in a community, and it is important to link it to the development of agriculture according to 34.88% examinees. Agriculture affects the revalorization of local resources and improvement in the life standard of people as well as social and economic development of the rural area and the community. Based on the statements provided by the examinees, it can be concluded they understand the synergy effect of tourism and agriculture on the development of rural areas.

The primary generators and motives of visiting a rural area are various elements of active vacations, desire to learn and contact with the rural lifestyle, all of which are ultimately turning into social and economic benefits of a rural community. Having in mind that the development of rural areas through the development of tourism has a goal of improving the community's welfare and overcoming unemployment issues through opening vacancies and encouraging growth of economic activities in the local rural area (Xiong et al., 2020), the examinees were asked an open ended question, that is, they had to state important preconditions for tourism development in their destinations. The answers were grouped in specific categories by applying qualitative analysis of responses as shown in Table 3.

Table 3: Attitudes of examinees about important preconditions for tourism development in their destination/residence

No.	Preconditions of development	Examinees	%
1	Cultural-sports activities in the city during the entire year	200	77.52
2	Quality of the hospitality offer	158	61.24
3	Quality of accommodation facilities	135	52.33
4	Transport connections and transport availability	132	51.60
5	Information on the offer of the destination	125	48.45
6	Employment possibilities in tourism	116	44.96
7	Connection to activities in the environment	104	40.31
8	Development of cycling routes	98	37.98
9	Increase in accommodation facilities	89	34.50
10	Development of sports activities	8+-9	34.50
11	Connection to the activities in the entire Slavonija	81	31.40
12	Safety	81	31.40
13	Seminars in the area of tourism	72	27.91
14	Parking space	54	20.93

Source: Authors

Considering numerous and various comments to this question, and which was impossible to analyse in detail due to the physical limitations of this paper, it is evident the community has strong will to actively participate in tourism development, and the examinees recognise important preconditions of tourism development in their destination. Table 3 shows that the examinees (77.52%), as important preconditions for tourism development in their destination, highlight the existence of cultural-sporting events in the city during the entire year. The second most important precondition for the development of tourism was the quality of accommodation facilities (61.24% examinees), e.g. increase in accommodation facilities (34.5%) and the quality of hospitality offer is regarded by 52.33% examinees as one of the most important preconditions for tourism development in their area. As the fourth precondition for tourism development, the examinees pointed out transport connections (51.60%). They also recognised the importance and the role of marketing and promotion (48.45%) as well as networking with other tourism stakeholders both in the destination (40.31%) and the region (31.40%). Furthermore, a total of 44.9% examinees listed employment possibility in tourism as one of key preconditions for tourism development which proves the local community is well informed about the advantages tourism could bring to a local community if the benefits are well distributed.

One of the joint approaches to decreasing or avoiding negative influences of tourism includes continuous improvement of tourist products (Bell et al. 2007: Pröbstl-Haideret et al., 2014), always having in mind that these products should respect the people and the space they are created in, and they should also act as generators and motives for visiting a rural area. Active participation of the community is one of the top requirements of sustainable tourism

development. This is achieved by developing quality communication channels between the local administration and the local community (Birkić, 2014). Concerning tourism development, it is important to recognise the attitudes and perception of the local community for achieving sustainable development of the rural area. Therefore, the examinees were asked an open ended question, that is, they were asked to state the biggest challenges of tourism development in their destinations. The replies were grouped in categories by using qualitative analysis of the replies as shown in Table 4.

Table 4: Attitudes of the examinees on the biggest challenges of tourism development in their destinations

No.	Development challenges	Examinees	Share in %
1	Promoting the existing tourist events	66	25.5
2	Investing in marketing	39	15.5
3	Construction of new, quality accommodation facilities	37	14.3
4	Development of sporting or other events	31	12
5	Networking	20	7.7
6	Transport connections	17	6.6
7	Investment in human resources, education for tourism development	16	6.2
8	Development of sustainable, responsible eco-tourism	12	4.6
9	Preserving the local community	10	3.8
10	Strategic approach to tourism development	4	1.5

Source: Authors

The examinees (25.5%) highlight promotion of the existing events and investment in marketing as the biggest challenges of tourism development in their destinations. The construction of new and quality accommodation facilities ranks three with 14.3% and the development of sporting and other events ranks four with 12%. The local community recognises the role and importance of training tourism staff which 6.2% examinees recognises as one of the biggest challenges for tourism development. Furthermore, 4.6% examinees recognise the role of the development of sustainable and eco-friendly tourism. The initiative for the development of tourism based on the principles of sustainable development should come from the local community (Birkić, 2016), which is also the carrier of specific features of the rural areas with its natural, cultural and traditional heritage. These same specific features motivate tourist arrivals. The examinees (3.8%) also recognise the preservation of the local community as a challenge for the development of tourism in rural destinations. They feel the local community should be the carrier of the specific features they live in and which tourism is being development in.

The promotion, that is, the interpretation of heritage values of a certain area and its residents could yield economic effects owing to tourism development. The increased social and economic value of a destination on the market is the result of strengthening total heritage identity of its territory. The local communities are familiar with tourists and their activities during their stay in a destination. They know what the tourists consume and to what extent; they are familiarised with the demand, but the offer is inadequate even though the destination has potential. Therefore, it is important to investigate the examinees' attitude on the exploitation degree of the potential in a rural destination. In that sense, the inclusion of the community implies exchanging knowledge and information through the assessment process of the exploitation degree of the tourism offer in a destination, which will boost the strength of a community and promote its participation in the decision-making process (MacDonald & Jolliffe, 2003). As part of this research, the examinees were given the task to assess the exploitation degree of the tourist offer with a scale from 1 (low potential exploitation degree) to 4 (high potential

exploitation degree). The low potential exploitation degree means there is potential, but it is underused. High potential exploitation degree means there is potential, and it used ti a great extent. The results are shown in Chart 4.

Chart 4: The examinees' attitude on the exploitation degree of the tourist offer potential in a destination
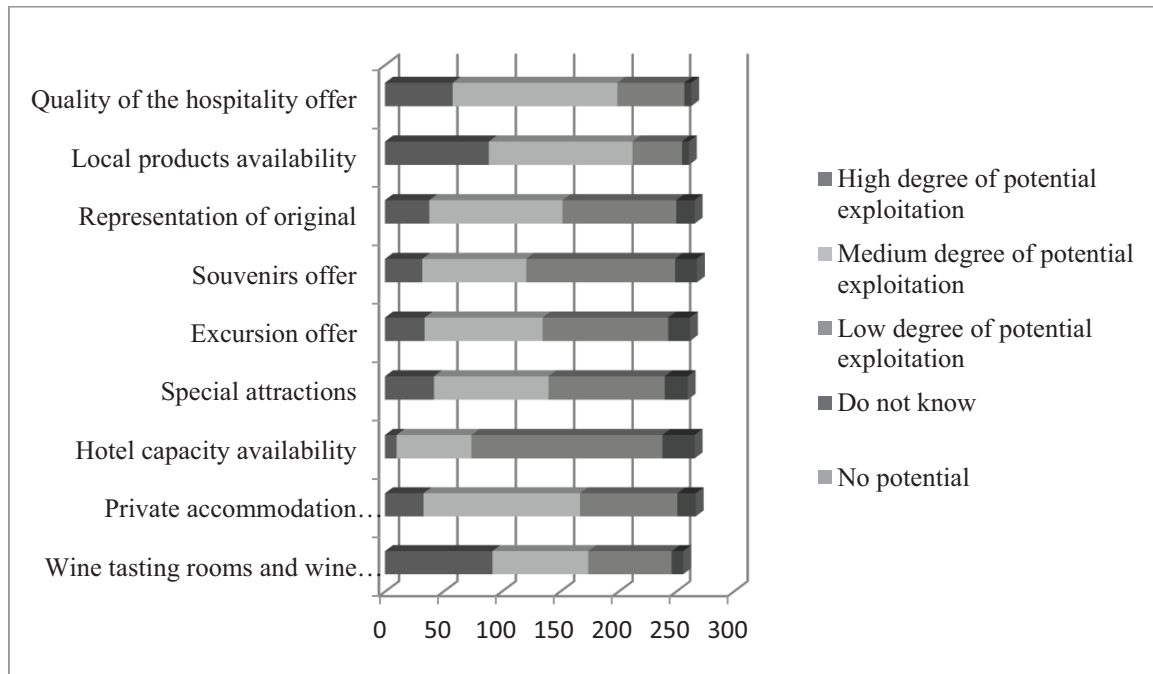
Source: Authors

Based on the results of the researched shown in Chart 4, regarding the degree of the exploitation potential of the tourist offer in a destination, a high degree of awareness is visible by the local community regarding the potential of tourism resources and their exploitation degree.

Not a single examinee stated that the observed destination did not have the potential of a tourist offer. The examinees think that the potential of the tourist offer was highly exploited in the area of the availability of local products (34.5%); wine tasting rooms and wine routes (35.80). Furthermore, the examinees think the potential was exploited to a medium rate concerning the hospitality offer (54.65%). As far as the events themselves, the examinees believe that a medium exploitation rate was achieved (59.79%). The examinees think the potential of the tourist offer was underused concerning the original gastronomic offer (38.13%), availability of hotel capacities (63.81%), offer of excursions (42.35%), special attractions (39.37%) and souvenirs (49.81%).

The communication between the host, local community and visitors is an integral part of the rural experience. Local communities present an integral role in the development of tourism since they are well informed. By giving meaning and deeper understanding of the heritage phenomenon, the visitors create a special long-lasting relationship with the rural area, which motivates better management and preservation of the rural area. It is crucial for the local community to be informed about the current tourist offer, natural and cultural heritage. In compliance with the framework of this research, the examinees were asked on the extent of their knowledge of the tourist offer in their destination and whether they would recommend it to the tourists.

Chart 5: Knowledge of the local community about the tourist offer and their destination and their readiness to recommend it
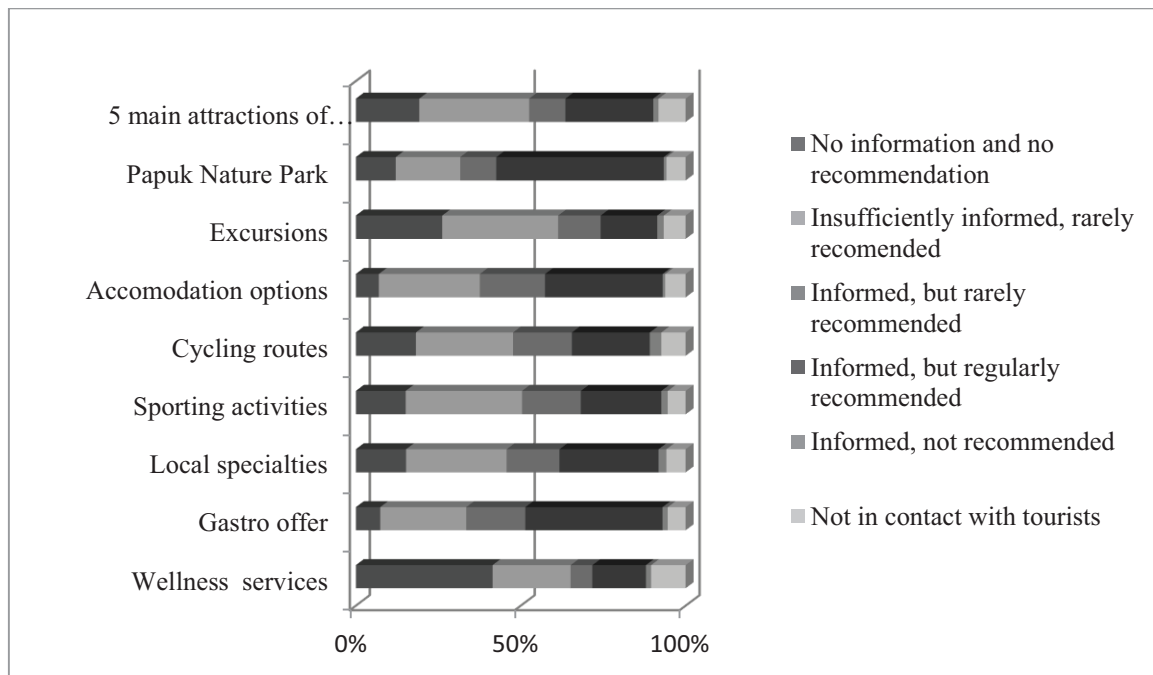
Source: Authors

Based on the conducted research, it is evident that the local community is insufficiently informed about the tourist offer of the destination and the broader region. Therefore, they are not ready to recommend certain activities to the visitors. This is certainly bad for sustainable development and growth of tourism in rural areas. Papuk Nature Park is the exception since the examinees stated they were informed about the Park and recommended it to the visitors regularly (50.78%). As far as the five attractions of Slavonija, the examinees stated they did not have enough information and they did not recommend the five main attractions of Slavonija (52.55%). The examinees dispose with the least information about the wellness offer, and 65.37% of the examinees stated they did not have information about the wellness offer in the destination and they did not recommend this activity to the tourists. Moreover, the local community does not have sufficient information on the potential excursions. Actually, 6,33% of them stated they did not have any knowledge on the excursions neither they recommended them. Concerning the gastro offer, 46.10% examinees state they had information on the gastro offer and recommended it gladly to the visitors; 45.70% examinees stated they did not have enough information and did not recommend local specialties. It is interesting that the share of the examinees who did not have the information on the cycling routes totals 47.68% and they do not recommend it to the visitors. Roughly the same percentage (41.47%) recommends the cycling routes regularly. These results reveal that the rural area has quality cycling routes and gastro offer, but the local community should be better informed on the elements on the offer and become promoters of tourism in their destination. Therefore, special attention should be given to educating and informing the local community on all elements of the offer in a destination since the role of the local community is priceless when it comes to promoting the destination. This way, the local community motivates tourists to explore and experience unique and memorable moments. Heritage values are promoted and interpreted; connections are better and deeper as well as the understanding of the heritage phenomenon of the visited area. All of this together will make the tourists revisit the destination. The communication between the locals, host and the visitors can be considered one form of interpreting natural and cultural

heritage. The interpretation by the local community, as a contemporary and sophisticated tool, in a recognisable rural area could contribute to establishing sustainable tourism development of the area with the goal of increasing economic benefits on the one side and interest in protecting natural and cultural heritage on the other side, but at the same time avoiding confrontation of sizes and conflicts between the goals (Birkić et al., 2019).

5. Conclusion

The local community, with its natural and cultural heritage, traditional values, gives destination specific features which make it desirable for the visitors. It has an important role in the development of tourism and their active inclusion is regarded crucial for success of the community's sustainable tourism. Rural areas are mainly marked by rich natural, cultural and traditional heritage as well as depopulation problems and abandonment of traditional crafts. In such circumstances, tourism often seeks sustainable development solutions for the rural areas.

The results of the research show the local community is completely aware of the role and the significance of tourism development of the rural area they live in, tourist potential as well as disadvantages and obstacles in establishing a systematic and quality development of the destination's tourism. Based on this research, the main components for establishing sustainable tourism of rural destinations from the aspect of the local community are: improvement of the existing hospitality capacities, promotion of marketing activities, development of new and promotion of the existing events, local community participation and networking of the key participants, both on the local and the regional level. The paper presents results of the research in order to propose critical implications which the local authorities and destination management should take into consideration when planning and developing tourism in rural areas. Understanding the attitude of the residents could help policy creators and development planners to provide better assessment and acknowledge the community's perception regarding the direction of the development of sustainable rural tourism. The local communities and the residents of rural tourism destinations have knowledge about their community, and this knowledge could help establish and promote sustainable development of rural tourism. Moreover, they are familiarised with personal, cultural and natural environment and this knowledge can be useful in attracting tourists as well as preserving the social, cultural, economic and environmental tourism in these tourist destinations.

It is important to mention the research was limited by generalising the results of the research in other rural areas in certain other regions. The research was conducted in Slavonia which is specific and which distinguishes greatly from other regions (i.e. Dalmatia, Istria or Zagorje) concerning the degree of tourism development.

Furthermore, it is evident the locals want to be included in tourism planning and development in their destinations. The question poses whether this is marginalised and subjugated to the process of tourism development in rural areas. For the purpose of future research, it is recommended to investigate the obstacles for including the locals in the process of tourism planning and development in rural areas. The inclusion of the locals in the decision-making process regarding tourism development is the key indicator of the community's tourism development.

Moreover, it is proposed to conduct a research on visitor satisfaction of the observed destinations concerning the state of the existing hospitality services, condition and attractiveness of the existing events and awareness of tourist activities to overcome the gap in

the recent future between what the locals on the one hand consider crucial for successful tourism development in rural area and the visitors on the other hand.

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DIMENSIONS OF HEALTHCARE SERVICES QUALITY BASED ON EXPECTATIONS OF PRIMARY CARE USERS USING FACTOR ANALYSIS

ABSTRACT

In a modern business environment demand for a better quality of healthcare services is becoming an imperative. The openness of the market in the domain of primary healthcare has led public health institutions to apply the concept of quality management as a crucial instrument in the fight against competition. Current events related to health issues inevitably lead to a change in the awareness and perception of the way public health institutions operate. Meeting the expectations of healthcare users is a very difficult task. While seeking, selecting and using health services that will meet health needs, the user behaves differently than when it comes to any other existential need. The aim of this paper is to show the key dimensions and attributes of quality of primary healthcare services in terms of user expectations, and to indicate importance and possibilities of applying factor analysis in identifying those keys. The main hypothesis is that by applying factor analysis it is possible to identify key dimensions and attributes of healthcare service quality from the aspect of expectations of users of primary healthcare services. The survey has been conducted by a questionnaire based on controlled sampling of primary healthcare users in the area of nine municipalities in the Tuzla Canton, using factor analysis of the main components based on orthogonal rotation VARIMAX. The research confirms the existence of selected five dimensions of healthcare services quality in the expectation scale and thus conclusions and proposals for primary healthcare managers are presented.

Keywords: *healthcare, factor analysis, user expectations, services quality.*

1. Introduction

The healthcare system, together with the economic system, has particular significance for both the state, society and individuals. The healthcare system is one of the pillars of the social system and a measure of its reached quality and overall social perspective. The healthcare system in Bosnia and Herzegovina has been experiencing the fate of the overall economic system over the past few decades, becoming stagnant with enormous budget deficit,

population age structure, reduction of fees and pensions as a result of negative indicators in all areas of the economy.

Improving quality has different meanings for different participants in a health system. From a doctor's perspective, it most often refers to increasing medical effectiveness, while for managers it represents an increase in efficiency. Healthcare service users are usually concerned about their well-being. Healthcare satisfaction is achieved by meeting the expectations of health service users. However, expectations differ from user to user and on this basis it is necessary to investigate what healthcare users expect.

Quality management of healthcare services aims to identify important business activities and their management in the overall process approach, all with the goal to continuously improve the satisfaction of healthcare service users. In order to maximize the satisfaction of healthcare users it is necessary to:

- Manage those dimensions that are most important for healthcare users,
- Develop and integrate mechanisms for regular monitoring of the level of satisfaction of healthcare service users,
- Act with preventive and corrective measures based on the principles of quality management system, and
- Undertake strategic and operational activities for continuous improvement of the real quality of healthcare services.

Taking into account the above, we are starting to talk about the standardization of business activities in primary healthcare institutions, as an important segment of improving the efficiency and effectiveness of business. Standardization has been applied in the manufacturing sector in the past. However, as the service sector continues to grow from an economic point of view, the implementation of standardization becomes a crucial factor of competitive advantage in the world market.

The central hypothesis of the paper is: By applying factor analysis it is possible to identify key dimensions and attributes of healthcare service quality from the aspect of expectations of users of primary healthcare services. In addition to the theoretical parts that represent the methodological and conceptual framework of the research, the results of the conducted empirical research will also be presented in this work. Concluding remarks will be directed towards applied practical effects of research on whether it is possible to identify key dimensions and attributes of healthcare services quality from the aspect of user expectations, with the aim of defining and suggesting ways of directing health institution management towards improving quality of provided healthcare services.

2. Previous research

Quality management in the healthcare system is becoming the norm, especially when it comes to the availability of healthcare services, safety and reliability of medical practices, quality of service provision, customer satisfaction, and managing the costs of healthcare institutions.

Babakus and Mangold (1992) were pioneers in measuring the quality of healthcare services in case of hospital enviroment. Their empirical research examined the reliability and value of the instrument. The scale of expectations and perceptions has resulted in one-dimensional constructs, and it has been shown that they can be successfully applied to estimate the size of

the gap between expectations and user perceptions. It is for this reason that the authors assessed the model as a concise and practical instrument useful for assessing the quality of healthcare services, and suggested further research and evaluation of the instruments (Babakus & Mangold, 1992).

By using HEALTHQUAL scale adapted from SERVQUAL scale Miranda et al. (2009) in the context of primary healthcare centers, measured the perceptions service quality, both by the users and the healthcenter managers in Spain. In their research they found out that there was a discrepancy among the users' perceptions and the perceptions of healthcenter managers. Also using factor analysis and multiple regressions, significant associations were found between the service quality dimensions and patient satisfaction.

In their work, Ozretić Došen and his associates present the results of the conducted research on the quality of healthcare services provided in primary healthcare institutions. The results showed that there is a significant gap between the perceptions and expectations of service users and that the gap is different depending on the dimensions. The largest gap was recorded in the dimensions of "responsibility", "security" and "reliability" (Ozretić, et al., 2010).

Papanikolaou and Zygiaris (2014) tested the internal consistency and applicability of SERVQUAL in primary healthcare centres in Greece. Their research showed that there were gaps in all dimensions, while the largest gap was detected in „empathy". They also showed that there were also differences depending on gender, age and education levels. A separate analysis of expectations and perceptions revealed that this gap was because of differences in patients' perceptions rather than expectations.

Mečev and Goleš Kardum (2015) examined in their research quality perceptions of primary healthcare users. They sought to determine whether there was a difference between user expectations and levels of satisfaction with the medical service received. They found a gap in all dimensions, and that there is no difference in the perception of service quality with respect to age and gender of users, but that there is a significant difference in satisfaction with employment status and frequency of service use (Mečev & Goleš, 2015).

In his paper, Marković (2016) confirmed that accreditation has an impact on six quality indicators. A study conducted in two tertiary level healthcare hospitals showed that accreditation has contributed to more realistic monitoring of quality indicators, as well as more realistic reporting. Healthcare professionals, who have had experience with accreditation, perceive this process as an intervention that has a long-term positive impact on the planning and implementation of plans and that conceptually has a reform character in the healthcare institution. The research results confirm that the accreditation process significantly leads to the improvement of certain quality indicators, both in the decision-making phase of the management of the institution on accreditation, i.e. during the preparation for accreditation, and during the accreditation process and immediately after accreditation (Marković, 2016).

According to Kljaić (2017) the assessment and measurement of user safety is a significant indicator of the quality of work of a healthcare institution and at the same time serves as a starting point for planning and taking improvement measures. Monitoring and analysis of adverse events and organizational practices of user safety contributes to the knowledge of causes, prevention and safe practice and helps prevent future adverse effects of hospital care, to reduce their long-term adverse effects and shorten treatment duration and reduce treatment

costs. The most important dimension of healthcare and the priority of any healthcare system is safety and the user at the center of care and we must strive to make the system as safe as possible, both for the user and for all those who provide healthcare. Risk assessment is a process that helps to understand the range of risks we face, the level of ability to control these risks, their likelihood of occurrence and their potential consequences. It is not enough just to detect existing risks, but it is necessary to take preventive measures, analyze possible causes, and take measures to improve (Kljaić, 2017).

The aim of Stojčić's research (2017) was to determine the quality of laboratory services of the medical-biochemical laboratory of the Osijek Healthcare Center from the point of view of its users. The survey was conducted on 400 respondents. In addition to the socio-demographic data of the respondents, the research determined the assessment of functional quality, technical quality, and the overall quality assessment of the medical-biochemical laboratory. In addition to the socio-demographic data of the respondents, the research determined the assessment of functional quality, technical quality, and the overall quality assessment of the medical-biochemical laboratory. The quality of laboratory services of the users of the city of Osijek was rated with a high score of 6.1 on the Likert scale from 1 to 7. Furthermore, the technical quality of the laboratory was rated at 6.8 while the functional quality was rated slightly lower, at 5.9. This research indicated a high assessment of the quality of laboratory services in the medical-biochemical laboratory at the primary level of healthcare in the city of Osijek by the users of the mentioned services (Stojčić, 2017).

Čakalić (2018) measured user satisfaction with the quality of healthcare with regard to age, gender, level of education, employment status and reason for hospitalization. The standardized Laschinger HCAHPS (*Hospital Consumer Assessment of Healthcare Providers and Systems*) questionnaire was used, as well as the NPSCC (*Patient Satisfaction with Nursing Care Quality Questionnaire*) questionnaire, with three thematic dimensions in relation to the Risser scale: interpersonal relationship and trust, education and information and technical-professional competencies in nursing. Respondents rated the quality of healthcare as excellent. They were extremely satisfied with the quality of healthcare provided at the Clinical Institute for Nuclear Medicine and Radiation Protection in Osijek. They were also pleased with the relationship with the nurses and technicians. There were statistically significant differences with respect to age, employment status, vocational education, and reason for hospitalization. There was no significant statistical difference by gender.

Teshinzi et al. (2018) through a meta-analysis of all Iranian studies of primary and other healthcare centers found that gaps between mean scores for expectations and perceptions were negative for all five dimensions of the SERVQUAL tool. This research implies that patients in Iran are not fully satisfied with the quality of healthcare services. Improvements are needed, and so this study presents an opportunity to identify areas of strengths and weakness in the quality of healthcare provided by health organizations in Iran.

3. Research methodology

Within the elaboration of certain theoretical and methodological starting points of the observed problem, and certain applied considerations, the following methods were used: induction and deduction method, analysis and synthesis method, hypothetical-deductive method, analytical-deductive method, comparative method, method of logical reasoning, understanding and interpretations and methods based on statistical analysis (factor analysis in which the principal components method was based on orthogonal rotation VARIMAX), and

to confirm or reject the central hypothesis: *By applying factor analysis it is possible to identify key dimensions and attributes of healthcare service quality from the aspect of expectations of users of primary healthcare services.*

Empirical research was conducted based on the application of professional and scientific methods of secondary and primary research. As part of the secondary research, the paper used published scientific and professional papers that treat this issue. A reconnaissance or exploratory research was conducted, within which secondary data were collected and previous experiences were researched. Secondary sources referred to the available relevant literature in the field of service quality management, healthcare and customer satisfaction. Primary research collected data using a survey method, using a survey questionnaire as a means of data collection. For the purpose of conducting the primary research, as mentioned, the examination method (written examination technique) was used.

Dimensions of the healthcare services quality of that can be identified within the primary activities of the process of providing healthcare services are observed through: tangibles, reliability, responsiveness, competence and assurance and empathy. The "tangibles" dimension includes questions A1 to A4 and includes the physical appearance and the entire property of the health institution, such as: equipment, arrangement of health institutions, uniformity of staff, promotional materials, etc. The "reliability" dimension includes questions A5 to A9 and includes the provision of health services without error, the provision of health services at the agreed time, interest in solving problems, etc. The "responsiveness" dimension includes questions A10 to A13 and involves providing sufficient time and attention to each individual healthcare user. The "competence and assurance" dimension includes questions A14 to A19 and includes the knowledge, abilities and skills of medical staff, which instill confidence in healthcare users. The "empathy" dimension includes questions A20 to A24 and involves individual attention, care and understanding of the specific needs of healthcare users. Dimensional scale was taken from the reduced SERVQUAL created in 1988 by the authors Parasuraman, Zeithmal and Berry (Šiško-Kuliš & Grubšić, 2010: 90) while the claims (indicators) within the dimensions were modified according to the nature of primary healthcare services in Bosnia and Herzegovina. A five-level Likert scale was used.

Data collection was performed on the basis of a proportional stratified sample, since it belongs to the category of random samples which allows to assess degree of reliability of conclusions about the investigated parameters. The total number of distributed survey questionnaires was 500, with 300 questionnaires adequately completed. Thus, the rate of return of the survey questionnaires was relatively high and amounted to 60%. The survey was conducted in healthcare centers in nine municipalities of Tuzla Canton, which we randomly selected from a total of thirteen municipalities, and users of healthcare services were surveyed based on their availability in healthcare centers of these municipalities.

4. Empirical research

The dimensions of healthcare services, measured using the expectation scale, were subjected to factor analysis to test the central hypothesis: *By applying factor analysis it is possible to identify key dimensions and attributes of healthcare service quality from the aspect of expectations of users of primary healthcare services.* Thus, we will try to find out whether there are basic dimensions or factors, or whether they coincide with the five dimensions of the process of providing healthcare services. (tangibles, reliability, responsiveness, competence

and assurance and empathy). It should be noted that only those factors that meet the following conditions are significant (Hair, Anderson, Tatham & Black, 1998: 104):

- their eigenvalues must be greater than one,
- percentage of total variance greater than or equal to 0.60 (in social research), i
- the significance of the factor coefficient is greater than or equal to 0.50.

Necessary conditions were examined in order to determine the suitability of the data for the application of factor analysis. The variables that are analyzed by factor analysis must be quantitative, which is met in our research, bearing in mind the fact that these are numerical variables. One of the conditions is certainly the correlation between the original variables, which was established on the basis of the correlation matrix. To examine the adequacy of the data, the Kaiser-Meyer-Olkin measure was applied to all variables together. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy ranges from 0 to 1. Values less than 0.5 are indicating that the correlation matrix is unsuitable for factor analysis while value of 0.6 is recommended as acceptable for good factor analysis (Tabachnick & Fidell, 2007).

The following table shows the values of the Bartlett's test of sphericity and the KMO coefficient for the whole sample. Both tests are essential to assess the feasibility of factor analysis.

Table 1: KMO coefficient and Bartlett's test scale of expectations

Description		Values
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.907
Bartlett's Test of Sphericity	Approx. Chi-Square	2913,562
	df	276
	Sig.	.000

Source: Authors

Bartlett's test is used to test the null hypothesis that there is no significant correlation between the original variables. In other words, the correlation matrix of the respondents is a unit matrix, meaning each variable is correlated with itself and there is no correlation with the other variable. The basis for applying Bartlett's test is the Chi-Square test. Based on the value of sig. parameters from the previous table we can reject the null hypothesis, which means that there is a significant correlation between the original variables. The KMO test shows the benefits of applying factor analysis and its value ranges from 0 to 1. If the value of the KMO test is in the range from 0.5 to 1, as we have already pointed out, there is a justification for applying factor analysis. Since the Kaiser-Meyer-Olkin measure in our case is 0.907, we can conclude that the data of the variables used are suitable for conducting factor analysis.

In the following, we will describe the results of the factor analysis of the scale of expectations of healthcare users. Factor analysis of the main components was applied in the research. The basis for its implementation was an unreduced correlation matrix, where units are used for the initial utilities, that is, units are located on the main diagonal of the correlation matrix. By applying the factor analysis of the principal components after the transformation of the variables on the orthogonal axis has been carried out, the factors are extracted on the basis of their eigenvalues. Table 2 shows the factor structure of the scale of expectations of healthcare users after the analysis of the main components.

Table 2: Unrotated component analysis factor matrix

	Question (Variable)	Component matrix					Communalities
		1	2	3	4	5	
A6	Health service users should be familiar with the ability and conditions under which team members make a home visit.	.722	.067	-.039	-.195	.119	.580
A11	The medical staff should, during the examination, dedicate enough time and attention to each patient.	.695	-.337	-.066	-.046	-.128	.620
A5	The healthcare institution needs to insist on providing health services without mistakes.	.684	-.092	-.269	-.229	.098	.611
A21	All healthcare staff should be kind to healthcare users.	.673	.073	-.180	-.165	-.246	.578
A23	When staying in a healthcare facility, service users need to feel safe (using lifts, medical equipment, violent behaviour and personal safety).	.660	-.030	-.051	-.265	-.317	.610
A1	Healthcare institution should have modern equipment (equipment, instruments).	.654	.330	-.287	.048	.210	.667
A17	Behaviour of healthcare staff should gave confidence to the users	.650	-.217	-.219	.272	.108	.603
A14	Medical staff should provide the patient with the necessary advice, information on testing, treatments, therapies and treatment costs.	.642	-.122	-.090	.384	-.050	.585
A3	Staff of the healthcare institution should be adequately trained (uniform, neat appearance, accreditation, etc.).	.638	.367	-.303	.071	.042	.652
A9	The provided health service should be flawlessly provided during first visit	.630	-.095	.097	-.281	.226	.546
A12	Medical staff should always be ready to respond to the demands of healthcare users.	.629	-.040	.090	.063	-.240	.467
A24	The prices of healthcare services should be reasonable.	.626	-.063	.158	-.299	-.163	.537
A16	The healthcare staffs needs to explain to the patient when they need to come to a check, therapy or other treatment.	.619	-.289	.001	.270	.052	.542
A22	Healthcare users should be satisfied with waiting room conditions (e.g. hygiene, room warming, etc.).	.600	-.026	-.062	.048	-.506	.622
A10	Medical staff should treat patients with respect.	.594	-.382	-.112	-.161	.209	.581
A2	Facilities of healthcare institution should have attractive appearance (facility, lightning, signs, etc.)	.574	.632	-.081	.071	.042	.743
A18	The healthcare staff should have the appropriate knowledge and skills to be able to meet the needs of the users.	.538	-.227	-.105	.288	.475	.660
A7	The healthcare staffs needs to help patients in solving their problems.	.528	.065	.184	-.255	.181	.415
A15	Medical staff should talk to the patient about health protection and disease prevention (e.g. quit smoking, weight loss, diet, exercise, etc.).	.511	-.164	.203	.509	-.295	.676

	Question (Variable)	Component matrix					Communalities
A4	Materials related to health services such as prospects, catalogues, brochures should be visually attractive.	.510	.536	.196	.129	-.173	.633
A13	Patients should be asked for consent for a third person when a diagnostic or therapeutic procedure is performed.	.451	-.119	.632	-.099	-.006	.627
A19	Information that healthcare users own which are related to the health condition of the service user should be protected and not publicly disclosed.	.443	.039	.015	-.187	.065	.237
A20	Medical staff should provide information or advice regarding the user's (patient) or state of user.	.405	.003	.640	.006	.200	.614
A8	Health service should be provided in a pre-agreed term.	.351	.296	.372	.224	.221	.448

Source: Authors

From the previous table we can see that the structure consists of five extracted factors. The communality of a variable shows how much that variable is already known or explained, meaning, it shows how much the variance of that variable is explained by common factors. Low utility values indicate variables that could be omitted from the analysis. In fact, the higher the utility, the more familiar is the variable. The commonality of all factors in this study ranges from 0.237 to 0.743. The following table shows the eigenvalues for the extracted factors as well as the values for the total variance. The following table shows the results of factor extraction.

Table 3: Matrix of factor structure, eigenvalues and explained variance - results of extracted factors of the scale of expectations of healthcare users

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Eigenval.	% of Variance	Cumulat .%	Eigenval.	% of Variance	Cumulat. %	Eigenval	% of Variance	Cumulat . %
1	8.416	37.438	37.438	8.416	37.438	37.438	3.736	17.939	17.939
2	1.558	6.491	43.929	1.558	6.491	43.929	2.817	11.739	29.678
3	1.481	6.172	50.101	1.481	6.172	50.101	2.707	11.278	40.956
4	1.217	5.071	55.172	1.217	5.071	55.172	2.639	10.995	51.951
5	1.181	4.919	60.091	1.181	4.919	60.091	1.954	8.140	60.091
6	.955	3.781	63.872						
7	.859	3.378	67.250						
8	.807	3.164	70.414						
9	.762	2.974	73.388						
10	.737	2.873	76.261						
11	.630	2.425	78.686						
12	.594	2.376	81.062						
13	.553	2.204	83.266						
14	.537	2.136	85.402						
15	.519	2.063	87.465						
16	.484	1.916	89.381						
17	.417	1.639	91.020						
18	.409	1.603	92.623						
19	.387	1.564	94.187						
20	.362	1.407	95.594						

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Eigenval.	% of Variance	Cumulat. .%	Eigenval.	% of Variance	Cumulat. %	Eigenval	% of Variance	Cumulat. %
21	.322	1.241	96.835						
22	.312	1.200	98.035						
23	.258	1.024	99.059						
24	.243	.941	100.000						

Source: Authors

Table 3 shows the eigenvalues for the extracted factors as well as the values for the total variance. The eigenvalues (total) for the five extracted factors are 8.416 (first factor), 1.558 (second factor), 1.481 (third factor), 1.217 (fourth factor), and 1.181 (fifth factor), which means that the first five factors have critical values greater than 1, and these five factors explain 60.091% of the variance. It is noticeable that the percentage of total variance for the relevant factors is higher than 0.60 (60%), which is the lower permissible limit in social research.

Table 4 shows the factor structure matrix for 24 variables after the VARIMAX factor rotation was performed. The results show that the structure of factor loads was changed, meaning that factor loads were distributed on all five factors, which was not the case with the non-rotating matrix. The structure of factor loads after the rotation enables better interpretation of factors in relation to the initial factor matrix. The table also lists the utilities for each individual variable and the eigenvalues of the selected factors after the rotation of the factors.

Table 4: Matrix of the factor structure of the expectation scale after orthogonal VARIMAX factor rotation

Question (Variable)		Component matrix				
		1	2	3	4	5
A5	The healthcare institution needs to insist on providing health services without mistakes.	**.646**	.318	.232	.181	-.076
A9	The provided health service should be flawlessly provided during first visit	**.630**	.227	.135	.057	.274
A10	Medical staff should treat patients with respect.	**.596**	.457	-.063	.096	.058
A6	Health service users should be familiar with the ability and conditions under which team members make a home visit.	**.587**	.238	.344	.180	.167
A24	The prices of healthcare services should be reasonable.	**.556**	.032	.099	.391	.254
A23	When staying in a healthcare facility, service users need to feel safe (using lifts, medical equipment, violent behaviour, and personal safety).	**.542**	.043	.174	.531	.040
A7	The healthcare staffs needs to help patients in solving their problems.	**.501**	.084	.212	.042	.332
A11	The medical staff should, during the examination, dedicate enough time and attention to each patient.	**.493**	.411	-.013	.450	.073
A21	All healthcare staff should be kind to healthcare users.	**.485**	.121	.320	.472	-.049
A19	Information that healthcare users own which are related to the health condition of the service user should be protected and not publicly disclosed.	**.404**	.094	.188	.109	.132
A18	The healthcare staff should have the appropriate knowledge and skills to be able to meet the needs of the	.244	**.737**	.155	-.108	.149

Question (Variable)	Component matrix				
	1	2	3	4	5
users.					
A17 Behaviour of healthcare staff should gave confidence to the users	.267	**.658**	.188	.252	-.003
A16 The healthcare staffs needs to explain to the patient when they need to come to a check, therapy or other treatment.	.225	**.601**	.061	.307	.180
A14 Medical staff should provide the patient with the necessary advice, information on testing, treatments, therapies, and treatment costs	.115	**.587**	.240	.400	.099
A2 Facilities of healthcare institution should have attractive appearance (facility, lightning, signs, etc.)	.185	.054	**.815**	.156	.128
A3 Staff of the healthcare institution should be adequately trained (uniform, neat appearance, accreditation, etc.).	.315	.286	**.669**	.139	-.065
A1 Healthcare institution should have modern equipment (equipment, instruments).	.364	.328	**.650**	.065	-.031
A4 Materials related to health services such as prospects, catalogues, brochures should be visually attractive.	.046	-.045	**.633**	.349	.327
A22 Healthcare users should be satisfied with waiting room conditions (e.g. hygiene, room warming, etc.).	.237	.134	.186	**.717**	.002
A15 Medical staff should talk to the patient about health protection and disease prevention (e.g. quit smoking, weight loss, diet, exercise, etc.)	-.131	.457	.081	**.595**	.298
A12 Medical staff should always be ready to respond to the demands of healthcare users.	.275	.230	.188	**.510**	.206
A20 Medical staff should provide information or advice regarding the user's (patient) or state of user.	.188	.115	.060	.041	**.749**
A13 Patients should be asked for consent for a third person when a diagnostic or therapeutic procedure is performed.	.280	.050	-.068	.238	**.696**
A8 Health service should be provided in a pre-agreed term.	-.024	.161	.386	-.014	**.522**

Source: Authors

We called the first factor "Reliability of health personnel and transparency of health information". It includes 10 variables and explains 37.438% of the total variance in the data:

A5	The healthcare institution needs to insist on providing health services without mistakes.
A9	The provided health service should be flawlessly provided during first visit
A10	Medical staff should treat patients with respect.
A6	Health service users should be familiar with the ability and conditions under which team members make a home visit.
A24	The prices of healthcare services should be reasonable.
A23	When staying in a healthcare facility, service users need to feel safe (using lifts, medical equipment, violent behaviour, and personal safety).
A7	The healthcare staffs needs to help patients in solving their problems.
A11	The medical staff should, during the examination, dedicate enough time and attention to each patient.
A21	All healthcare staff should be kind to healthcare users.
A19	Information that healthcare users own which are related to the health condition of the service user should be protected and not publicly disclosed.

The second factor is called "Competence and assurance of health professionals". It includes 4 variables and explains 6.491% of the total variance in the data:

A18	The healthcare staff should have the appropriate knowledge and skills to be able to meet the needs of the users.
A17	Behaviour of healthcare staff should gave confidence to the users
A16	The healthcare staffs needs to explain to the patient when they need to come to a check, therapy or other treatment.
A14	Medical staff should provide the patient with the necessary advice, information on testing, treatments, therapies, and treatment costs

"Infrastructure and technical equipment of the health institution", interprets the third factor. This factor includes 4 variables and explains 6.172% of the total variance in the data:

A2	Facilities of healthcare institution should have attractive appearance (facility, lightning, signs, etc.)
A3	Staff of the healthcare institution should be adequately trained (uniform, neat appearance, accreditation, etc.).
A1	Healthcare institution should have modern equipment (equipment, instruments).
A4	Materials related to health services such as prospects, catalogues, brochures should be visually attractive.

We defined the fourth factor as "Resolving user requests, problems and remarks by health and administrative staff", where the mentioned factor includes 3 variables and explains 5.071% of the total variance in the data:

A22	Healthcare users should be satisfied with waiting room conditions (e.g. hygiene, room warming, etc.).
A15	Medical staff should talk to the patient about health protection and disease prevention (e.g. quit smoking, weight loss, diet, exercise, etc.)
A12	Medical staff should always be ready to respond to the demands of healthcare users.

The fifth factor "Consistency and information in the provision of health services" includes 3 variables and explains 4.919% of the total variance in the data:

A20	Medical staff should provide information or advice regarding the user's (patient) or state of user.
A13	Patients should be asked for consent for a third person when a diagnostic or therapeutic procedure is performed.
A8	Health service should be provided in a pre-agreed term.

Figure 1: The final model for measuring the quality of healthcare services
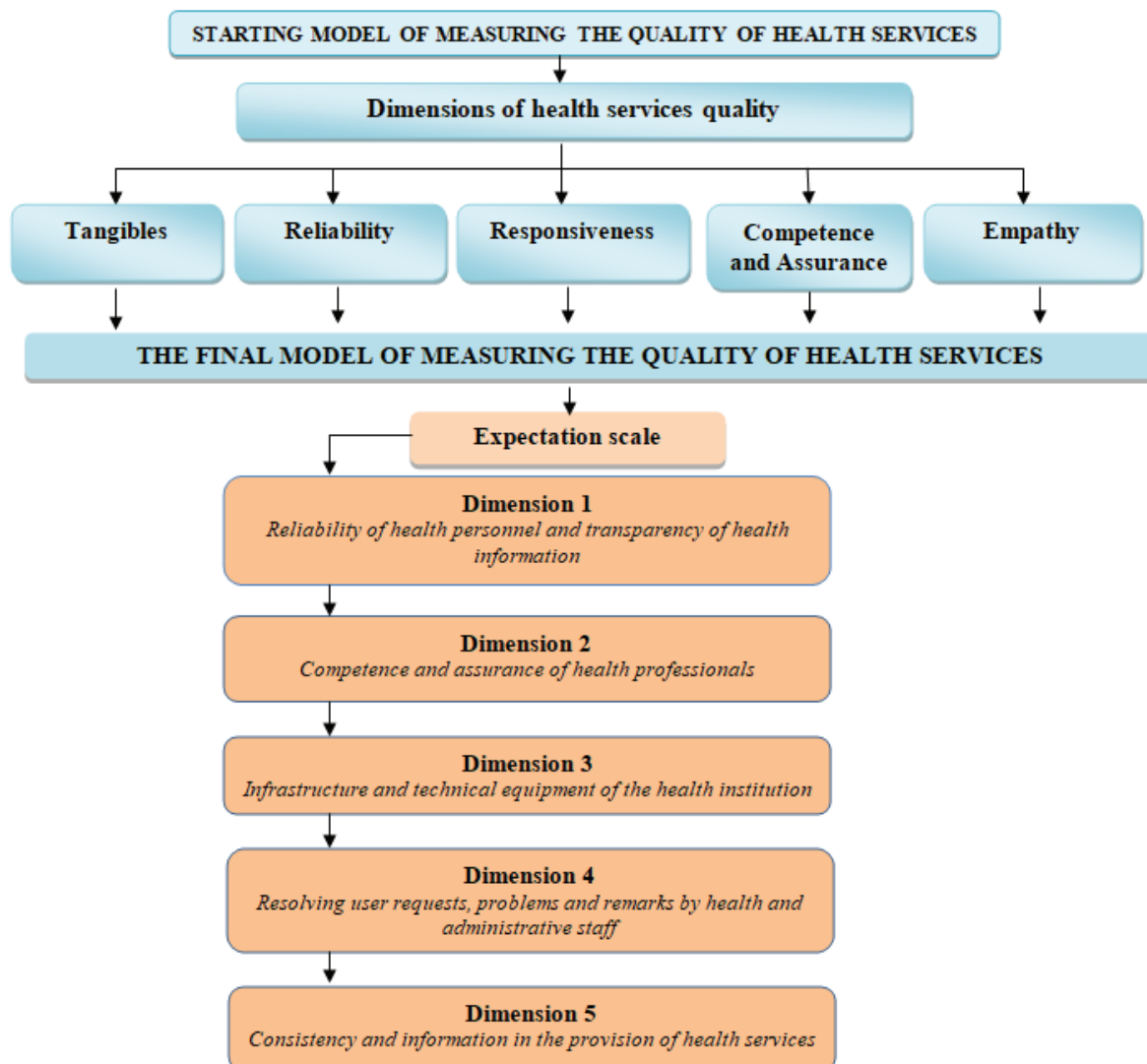
Source: Authors

5. Conclusion and discussion

To identify the most important dimensions of healthcare service quality, we used factor analysis of the main components. The results of the conducted factor analysis confirm the existence of five dimensions of the quality of health services in the expectation scale, which are highlighted in the baseline model. The five-dimensional solution to the expectation scale resulted in the following factors: (1) Reliability of health personnel and transparency of health information, (2) Competence and assurance of health professionals, (3) Infrastructure and technical equipment of the health institution, (4) Resolving user requests, problems and remarks by health and administrative staff, and (5) Consistency and information in the provision of health services. Based on previous detailed analyses and discussions of the results of the conducted empirical research, we can conclude that the central research hypothesis is confrimed, that by applying factor analysis it is possible to identify key dimensions and attributes of healthcare service quality from the aspect of expectations of users of primary healthcare services.

As more healthcare institutions are accepting quality, as a valuable tool in the fight against competition, so can this results help them allocate limited resources to the dimensions that are most important to healthcare users. An additional benefit of implementation of presented model is reflected in the possibility of feedback from service users themselves, who by meeting their expectations in terms of quality, are further motivated to improve their own health, following more instructions from medical staff.

The level of satisfaction of healthcare users, through meeting their expectations in the selected dimensions of quality, will certainly depend on the strength and motivation of management to introduce greater control over the functions of employees through stimulation systems, greater application of the code of ethics in regular business, contacting healthcare users services and establishing better business relationships with its suppliers.

As we have seen different authors have taken into account different dimensions and attributes of healthcare service quality. In addition to the differences in the understanding of the relevant attributes of service quality, there is also a difference in the understanding of the importance of a particular dimension and attribute. For example, reliability in some models is of the most importance, while in other models it is of less importance.

Literature review on the dimensions of the quality of healthcare services indicate very different understandings of this concept, which primarily stems from the characteristics of services and the diversity of healthcare institutions. It is mostly a matter of subjectivity in expectations of the quality of healthcare services, which is why researchers, managers and users present their views differently.

In the end we emphasize that this work is limited to the area of Tuzla Canton, and that in order to reach an overall conclusion or comparative analysis was recommended to perform the same as testing and research at the level of the entire Bosnia and Herzegovina.

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EU COHESION AND SPORT POLICY – CURRENT STATE AND PERSPECTIVES[1]

ABSTRACT

The social and economic dimension of sport is becoming increasingly important in the European economy and the Member States' economies. Also, the role of sport activities in the implementation of the Cohesion Policy is constantly increasing. Nevertheless, this topic is still scientifically modestly explored at the EU level, which represents the theoretical justification of the conducted research. The conducted research aims to present the theoretical and legal basis of EU Cohesion and Sport policies, to analyze key indicators of sport development at the EU level and to determine the effects of the Cohesion Policy on the development of sports in the EU. The purpose of the research is to identify scientifically based challenges and perspectives for the future development of sports in the EU. The research is based on secondary data mostly collected using the Eurostat statistical database. The results indicate that most of the observed EU Member States maintain stable levels of public investments in the field of sports. Such an orientation has contributed to the increase of employment in this area, which is especially evident in the less developed EU Member States. Also, the positive effects of sport development are present in the case of the most vulnerable groups, i.e. women and the young population. The future development of sports in the EU is largely subject to current challenges of the COVID-19 pandemic, as well as the growing needs for protection of health and the fight against doping. Also, future development of the European sport should be focused towards its connection and synergies with other economic sectors such as tourism, education and the health system.

***Keywords**: European Union, Cohesion Policy, Sport Policy.*

1. Introduction

The European Union area is characterized by heterogeneity, which is most pronounced when comparing the most advanced and less developed Member States. In this situation the EU, in

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all its policies, initiatives and strategies, places special emphasis on the implementation of the process of convergence and the achievement of the ultimate goal: Cohesion. The theoretical determination of 'convergence' is marked by the constant updates of economic theorists and constant changes of its key elements. Therefore, there is still no consensus on its theoretical definition. Firstly, it is important to point out that disparities between countries are a consequence of inherited development preconditions, spatial (physical) characteristics, policy implementation instruments and differentiated effects of policy implementation (Bjorkstenn, 2000). Contemporary theorists such as Bogunović (2001), Jacobsen et al (2004), Varblane and Vahter (2005) and Kandžija and Cvečić (2010) systematically approach to the process of convergence, defining it as a process of continuous reduction of development disparities in a given period, while respecting the temporal dimension and the direction of its unfolding. Furthermore, in order to encourage economic, social and political reforms and changes, it is crucial to ensure the stability of the process.

In a broader sense, economic convergence implies nominal and real convergence. Nominal convergence includes the criteria necessary for the introduction of the common currency; the euro. Considering the research topic, theoretical assumptions are focused on the real convergence. Jovančević (2005) points out that real convergence is a consequence of economic integration between advanced and less developed countries, which results in converging levels of prices and productivity. Thereat, it is necessary to implement comprehensive medium-term and long-term development plans and create conditions for dynamic management of structural changes (Kersan – Škabić & Mihaljević, 2010). Dratischova (2012) approaches the determination of the real convergence process through three key issues: (1) approaching economic growth trajectory to the dynamic equilibrium; (2) synchronization of business cycles; (3) coupling with the process of cohesion. However, the third aspect implies a certain amount of restraint. Therefore, Kandžija (2003, 2008) and Kandžija and Cvečić (2010) confirm previously stated assertion that convergence encompasses the process, while cohesion is the final goal; which can be achieved through meaningful and continuous economic and other development strategies, including dynamic processes of managing structural changes.

Contemporary economic and social developments largely determine the instruments and other determinants of convergence processes. At the European and global levels, the impact of sport and related policies is becoming an increasingly important determinant of achieving positive economic performances, the strengthening of national identity and the overall global visibility. Insight into the relevant literature revealed that there is still insufficient research on this topic and the identification of the effects of sport policies on the achievement of cohesion. Therefore, there is a theoretical justification for this research. It aims to present the theoretical and legal basis of the EU Cohesion and Sports policies, to analyze key indicators of sport development at the EU level and to determine the effects of the Cohesion Policy on the development of sports in Europe. The purpose of the research is to identify science-based challenges and perspectives for the future development of sports in the EU.

The paper is divided into six interrelated chapters. After the introductory considerations, where key elements of the research are determined, and the explanation of crucial theoretical concepts that determine the convergence processes, the paper continues with an overview of historical, theoretical and legislative aspects of sport related policies at the EU level and the presentation of the scientific methodology. The centrepiece of the paper is the statistical overview of sport related indicators at the EU level and the scientifically based presentation of the key effects on the achievement of cohesion. The supporting analysis created the basis for the identification of key challenges and perspectives of the European sports policy. The paper concludes with a synthesis of key scientific knowledge generated during the research.

2. Theoretical, legal and historical basis of european sports policy

Within the European legal distinction of powers, the field of sport is classified as a supporting activity, which means *"that the EU can only support, coordinate or complement the actions of Member States and has no legislative power, and must not interfere with states in this area"*. It has been included in the *EU acquis* only since 2009, with the entry into force of the Lisbon Treaty. Prior to that, the legislative frameworks of the 'European' sports policy were determined in interaction with other thematic areas, in particular through rules on the free provision of services and the free movement of workers (Bačić & Bačić, 2011). The 1997 Amsterdam Treaty enabled the establishment of key principles of the sports policy at the EU level: (1) the role of sport in the creation of national identity, and (2) the need to respect the views of sports organizations on important issues for sports and athletes by the European institutions (European Parliament (1), 2021). Furthermore, the European Council Declaration of December 2000 points to the economic and social role of sport and its connection with other European policies, in particular the regional, social and educational policies (European Council, 2000). Kandžija and Cvečić (2010) also point to the importance of sport in the process of achieving convergence and cohesion in Europe, pointing to the connection between Sport Policy and other key EU policies, primarily those related to the implementation of the European Internal Market. It should be noted that, since 1993 and the establishment of the European Union, and the establishment of the Internal Market, the sport sector has fully 'enjoyed' all the benefits arising from the establishment of four market freedoms. However, given the specificity of the sector, the rules have been adapted to some areas, focusing on the free movement of athletes and sport professionals on the Internal Market, primarily due to different national requirements in the field of their education. During all stages of the development of the Sport Policy, the EU has encouraged mutual recognition of acquired sports qualifications and harmonization of rules among Member States. In this context, specific importance is given to football ('soccer'). The revolution in this area was achieved by the 1995 Bosman ruling, when the Commission, after the deal with football organizations and institutions, "*agreed to adjust the rules on the freedom of movement for workers, while taking into account the specific nature of football*."

The first steps for the future development of sport at the EU level were accomplished through the 2007 White Paper on Sport and the related 'Pierre de Coubertin Action Plan'(Eur-Lex (1), 2021). The White Paper presents a systematic overview of the economic and social dimensions of sport, envisages the creation of a unified model for the organization of sport at the EU level, and considers the long-term effects of implementing reforms in this area. All proposed activities and related initiatives were presented in the framework of the 'Pierre de Coubertin Action Plan' (European Commission (3), 2021). The implementation of planned activities was achieved through the working documents entitled 'Developing the European Dimension in Sport' and the 'Resolution on the EU Work Plan for Sport' for the 2011-2014 period. The policy should be implemented with three-year work plans, which focus on the most important priorities and goals of the specific period. The recently completed Work Plan for the period 2017-2020 was largely focused on achieving the goals of the Sport Policy as well as achieving cohesion, in line with the priorities and objectives of the EUROPE 2020 strategy (Eur-Lex (2), 2021). The implementation of this Work Plan is largely linked to the realization of the European social dialogue and cohesion, through discussions and joint actions and the promotion of cooperation with third countries, respect for the principle of integration of sport into other European policies and ensuring a common approach of the European Commission and all Member States.
As already mentioned, the legislative affirmation of sport at the EU level was realized within the framework of the Lisbon Treaty, through the provisions of Articles 6 and 165 of the Treaty

on the Functioning of the EU (TFEU). Article 6 TFEU stipulates that "*the Union has competence to take action to support or complement the action of the Member States in the field of sport*". Furthermore, paragraph 1 of Article 165 TFEU states that the Union's tasks shall be reflected in "*the promotion of European sport, taking into account its specificities, structures and the social and educational role*". Paragraph 2 refers to "*the need to develop the European dimension in sport by promoting fairness and openness in sporting competitions and cooperation between bodies responsible for sport and protecting the physical and moral integrity of athletes, especially the youngest*"(Eur-Lex (3), 2021). Activities for the implementation of the Sport Policy within the European Commission are regulated by the work of the Directorate General for Education, Youth, Sports and Culture (DG EAC), while within the European Parliament the Committee on Culture and Education is responsible for sports (European Commission (3), 2021).

The development of the Sport Policy and the achievement of prescribed goals largely depends on the sources and methods of financing. The European Commission (2007) identifies two main sources of funding for sport: through public resources and private (non-budgetary resources). Basically, public sources of funding are all resources from state, regional and local budgets, while private sources include resources that sports organizations generate on the market, in accordance with their activities and capabilities. Based on the 2012 research of the Institute of Public Finances of the Republic of Croatia, besides usual distinction of public and private resources, financing sports can also be done through EU funds and specialized programmes. A detailed overview of the ways and elements of sport financing is provided in Table 1.

There are four basic and two 'additional' (specific) models of sport funding in the European Union, according to the following key characteristics: (1) the level of participation in sport (club membership rate); (2) the average level of public funding *per capita*; (3) the relative importance of direct contributions from households; (4) the contribution of volunteer work. The *first model* is characteristic mostly for countries of Northern and Western Europe, with high sport participation rates (about 20%) and high levels of public and private funding. This group includes Austria, Belgium, Denmark, Finland, Germany, Ireland, Luxembourg, the Netherlands and Sweden, with the addition of Cyprus. The *second or Mediterranean model* includes Greece, Italy, Malta and Spain. In these countries, private demand has limited public support and less attention is paid to the positive externalities of sport. Individuals are willing to pay for services, so the level of household demand is high compared to public funding. Public spending is about half the amount of household consumption per person. The *third model* or *rainbow model* is characteristic for the countries of Central Europe. The basic feature of this group of countries are low levels of interest and involvement in amateur sports, with the state not encouraging improvements through its interventions. This group includes Estonia, Hungary, Latvia, Lithuania, Romania, Slovakia, Slovenia, but also Portugal. The *fourth model ('BCP model')* includes Bulgaria, Czechia and Poland. They are characterized by low demand for sports, but also lower levels of households and public shares *per capita*. The model also implies a higher share of revenues from lottery, betting and gambling fees in the total revenues of the sports sector.

Table 1: Methods of financing sports

Public resources	Private (non-budgetary) resources[2]	EU funds and programmes
• Direct subsidies to sports from the budget • Subsidies from sport betting • Special tax rates • Loans with lower interest rates • Guarantees with lower fees • Public funding of sports facilities • Procurement of local public facilities by private clubs or institutions, at reduced prices • Rental of sports facilities by the local community • Bearing the costs of construction or renovation of sports facilities by the local community • Public works within private sports facilities • Public procurement of advertising areas within sports facilities • Sale or exchange of land/plots for sports facilities • Resources of lottery games[3]	• Household resources • Resources of commercial organizations focused on sports; most often through sponsorships and donations • Resources that media companies steer to sports by directly paying for broadcasting rights, but also through sponsorships • Resources that sports organizations earn by selling certain products and services	• Erasmus+ 'Sport' • Erasmus+ 'Youth in Action' • Erasmus+ 'Education and Training'

Sources: Institute of Public Finance in the Republic of Croatia (2012), Eurostrategies (2011)

Alternative funding models include the *French model* and the *British model*.[4] The French one is similar to the first model, with a greater public sector participation in sports, indicating a high level of publicly funded supply and a lower willingness of individuals to pay for services. In the UK case, state support is limited and the supply level is lower than in other analysed countries. Households pay a high share of the total cost, which shows their willingness and significant personal awareness of the beneficial effects of engaging into sports.

The representation of sport in European budget plans stems from its previously emphasized role in economic and social developments. This is evidenced by the research of the European Commission (2018), where sport, after culture, has been identified as one of the key factors in strengthening European identity. Within the EU Financial Perspective, resources for encouraging sport activities in the framework of 'Cohesion' are divided into programmes to strengthen the role of sports in society, programs and initiatives that encourage the economic dimension of sports and funds intended for the development of political and legal aspects of the Sport Policy. The major emphasis was directed on the Erasmus+ program, which provided 14.7 billion euros for education, training, sports and youth activities, during the 2014-2020 period. The importance of this programme and its benefits have been clearly recognized. So, the next Financial Perspective (2021-2027) anticipate an allocation of almost € 30 billion, which is an

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[2] Based solely on market rules, with certain sports organizations having significantly better conditions and opportunities to acquire them.

[3] They are accomplished through payments to sports bodies, commercial payments to third parties in sports and the payment of taxes and fees at certain levels of government (Eurostrategies, 2011).

[4] Although the United Kingdom is not an EU Member State since February 2020, the analysis covered the period before that event ('BREXIT').

extraordinary increase (European Commission (1), 2021). According to Halleux (2017), EU budgetary resources are related to eliminating existing problems and facing modern challenges by creating new and strengthening existing partnerships, ensuring good sports governance and encouraging volunteer activities, in order to strengthen the European identity and achieve equal opportunities for all stakeholders involved. Among the existing initiatives in the field of sports at the EU level, it is worth mentioning the European Sports Week, the European Sports Forum and the Beinclusive Sport Awards (European Commission (4), 2021).

The presented findings unequivocally point to the connection of sport with other economic activities on the EU Internal Market. Besides, taking into account its social and societal dimension, sport can be identified as a driver of changes and the reduction of development disparities between EU Member States.

3. Research methodology

The paper presents a descriptive analysis of key indicators of the sports policy at the EU level. The survey is based primarily on statistical indicators collected from the European statistical database - EUROSTAT. Depending on the availability of data, the survey covers the period from 2011 to 2019. It shows data for the EU average and all Member States (except the UK, which ceased to be an EU full member in February 2020). The key limitation of the research stems from the insufficient availability of certain indicators crucial for the analysis, i.e. some data are only available for 2010, or 2012, which cannot be considered as relevant for the overall analysis.

The analysis covered five key indicators: (1) employment in sports (% of total employment); (2) gender structure of employment in sports (% of total employment); (3) employment of women in sports (% of total employment); (4) public investment in sport and recreation (% of GDP); (5) general government expenditure on recreation and sport in the EU (€ per capita).

4. Key indicators of sport in the EU

The European Commission (1) (2018) data indicate that the economic importance of sport in the European economy stems from its representation in the total GDP, amounting to 279.9 billion euros, which is 2.12% of the total GDP.

Furthermore, Table 2 indicates that employment in sport activities increased in the observed period, and in 2019 the level was 0.69% of total employment. By analysing the structure by individual Member States, it is possible to conclude that the highest levels of employment in sports are achieved by Sweden (1.59% of total employment) and Finland (1.26%). Also, it is clear that a high level of employment in sports is a characteristic of more advanced economies, while less developed Member States, including those from the latest rounds of enlargement achieve lower shares of employment in sports.

Table 2: Trends in employment in sports in EU Member States during the period 2011-2019 (% of total employment)

Members State / years	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sweden	1.26	1.36	1.51	1.54	1.60	1.53	1.60	1.61	1.59
Finland	0.96	0.96	1.06	1.27	1.26	1.26	1.27	1.26	1.26
Spain	0.80	0.91	0.96	1.08	1.03	1.05	1.07	1.09	1.09
Ireland	1.01	0.95	1.01	0.99	0.90	1.04	1.07	1.06	1.04
Denmark	0.98	0.94	0.89	1.02	1.06	1.06	0.96	1.00	1.06
Netherlands	0.87	0.86	0.86	0.89	0.97	1.00	0.92	0.96	1.03
Estonia	0.56	0.65	0.82	1.01	0.77	0.87	0.80	0.82	0.92
France	1.09	1.08	0.83	0.64	0.67	0.68	0.64	0.69	0.67
Portugal	0.50	0.48	0.64	0.71	0.85	0.85	0.84	0.77	0.77
Latvia	0.53	0.67	0.52	0.64	0.60	0.66	0.65	0.91	1.14
Luxembourg	0.51	0.58	0.65	0.49	0.75	1.07	0.82	0.75	0.62
Austria	0.62	0.59	0.63	0.67	0.87	0.66	0.62	0.56	0.71
Cyprus	0.80	0.55	0.52	0.57	0.53	0.76	0.77	0.61	0.73
EU – average	**0.60**	**0.63**	**0.62**	**0.63**	**0.64**	**0.66**	**0.66**	**0.67**	**0.69**
Malta	0.38	0.52	0.67	0.66	0.54	0.35	0.68	0.78	0.72
Czechia	0.53	0.45	0.51	0.58	0.54	0.61	0.63	0.64	0.67
Germany	0.45	0.52	0.55	0.55	0.56	0.59	0.61	0.61	0.62
Slovenia	0.56	0.42	0.45	0.45	0.60	0.59	0.60	0.56	0.50
Italy	0.46	0.44	0.47	0.54	0.52	0.52	0.57	0.50	0.57
Belgium	0.52	0.49	0.46	0.44	0.43	0.51	0.50	0.49	0.50
Lithuania	0.42	0.41	0.41	0.45	0.51	0.57	0.54	0.57	0.42
Slovakia	0.29	0.37	0.51	0.53	0.46	0.47	0.46	0.38	0.41
Greece	0.31	0.22	0.28	0.40	0.43	0.47	0.53	0.56	0.54
Croatia	0.25	0.29	0.30	0.39	0.30	0.38	0.39	0.59	0.65
Poland	0.29	0.32	0.34	0.37	0.36	0.40	0.42	0.46	0.42
Hungary	0.29	0.29	0.31	0.35	0.44	0.39	0.36	0.42	0.50
Bulgaria	0.34	0.29	0.31	0.31	0.35	0.38	0.42	0.40	0.44
Romania	0.13	0.23	0.16	0.12	0.14	0.15	0.17	0.12	0.18

Source: According to data from Eurostat (1), 2021

In the context of the basic theoretical assumptions of policies associated with sports and their actions directed into reducing discrimination and ensuring equal opportunities for all, it is appropriate to analyse the gender structure of employees. Figure 1 indicates that gender equality in the sports sector has almost been achieved at the EU level, as evidenced by the incremental trend of employed women in sports.

Figure 1: Gender structure of employment in sports in the EU during the period 2011-2019
(% of total employment)
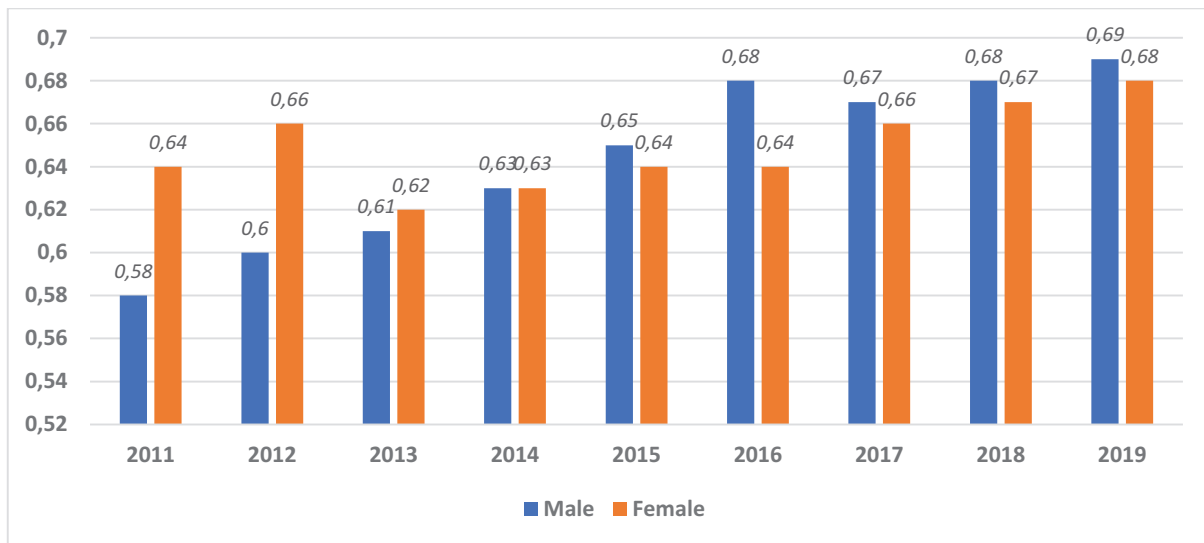
Source: Adapted from Eurostat (1), 2021

Furthermore, in the case of gender distribution, Table 3 shows the situation of individual Member States. As previous, it can be concluded that higher employment levels of women are a characteristic of most advanced economies, whose values are almost three times higher than the EU average. On the other hand, the new EU Member States are characterized by lower levels of female employment, i.e. three times lower than the levels in 'leading' Member States. Nevertheless, these countries have made progress compared to the beginning of the period, which is certainly a positive and encouraging fact.

The age structure of employment in sports indicates the dominance of the labour force aged 30 to 64, which during the observed period recorded a continuous increasing trend. The population group aged 15-29 follows, while the lowest representation at the EU level is characterized by the population older than 65 (Eurostat (1); 2021).

Table 3: Employment of women in the sports sector in EU Member States during the period 2011-2019 (% of total employment)

Members State / years	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sweden	1.46	1.49	1.67	1.66	1.73	1.63	1.71	1.81	1.81
Finland	0.85	0.90	1.08	1.27	1.28	1.23	1.34	1.43	1.45
Denmark	1.09	0.96	0.95	1.06	1.09	1.09	1.00	1.07	1.08
Netherlands	0.93	0.94	0.95	0.98	1.03	1.07	0.99	1.04	1.09
Spain	0.69	0.82	0.94	1.09	0.97	0.90	0.97	1.01	0.97
Ireland	0.87	0.82	0.83	0.81	0.73	0.92	1.02	0.99	0.93
Estonia	0.73	0.63	0.59	0.96	0.74	0.76	0.83	0.82	0.89
France	1.30	1.25	0.78	0.56	0.61	0.57	0.54	0.55	0.56
Austria	0.72	0.67	0.72	0.72	0.95	0.65	0.60	0.52	0.74
Latvia	0.51	0.53	0.45	0.62	0.54	0.77	0.49	0.97	1.18
EU – Average	**0.64**	**0.66**	**0.62**	**0.63**	**0.64**	**0.64**	**0.66**	**0.67**	**0.68**
Germany	0.52	0.59	0.62	0.61	0.60	0.65	0.69	0.68	0.70
Portugal	0.52	0.42	0.41	0.63	0.66	0.72	0.81	0.68	0.65
Czechia	0.46	0.46	0.52	0.57	0.48	0.55	0.74	0.61	0.54
Italy	0.44	0.43	0.46	0.57	0.59	0.56	0.55	0.49	0.59
Belgium	0.50	0.52	0.40	0.38	0.36	0.45	0.41	0.39	0.43
Slovenia	0.46	0.26	0.30	0.37	0.65	0.34	0.37	0.38	0.46
Greece	0.32	0.19	0.31	0.36	0.31	0.35	0.53	0.59	0.54
Poland	0.27	0.30	0.33	0.34	0.37	0.42	0.46	0.51	0.46
Croatia	0.26	0.27	0.30	0.38	0.24	0.26	0.30	0.53	0.58
Hungary	0.16	0.26	0.35	0.29	0.37	0.28	0.30	0.49	0.46
Slovakia	0.25	0.22	0.34	0.39	0.36	0.38	0.33	0.24	0.44

Source: According to data from Eurostat (1), 2021

Although sport and related activities are increasingly taking on the character of 'private', the backbone of the development of sport in the EU is still dependent on public investments. Table 3 suggest that public investments in sport at the EU level have stagnated in recent years, amounting to 0.3% of the GDP. Among EU Member States, Hungary 'dominates' with 1.1% of their GDP, followed by France, Sweden, Finland and Estonia, with significantly lower levels (approximately 0.5 - 0.6% of their GDP). The lowest shares of public investments in sport are recorded in Ireland and Romania at only 0.1% of their GDP.

Table 4: Public investment in sports and recreation in EU Member States during the period 2011-2019 (% of GDP)

Members State / years	2012	2013	2014	2015	2016	2017	2018	2019
Hungary	0.40	0.40	0.50	0.50	1.10	1.20	1.00	1.1
France	0.60	0.60	0.60	0.50	0.50	0.50	0.60	0.60
Sweden	0.50	0.50	0.60	0.50	0.50	0.50	0.60	0.60
Netherlands	0.60	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Luxembourg	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Finland	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.60
Estonia	0.30	0.50	0.40	0.40	0.40	0.60	0.50	0.60
Belgium	0.50	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Czechia	0.40	0.40	0.40	0.40	0.40	0.40	0.50	0.50
Poland	0.50	0.40	0.40	0.40	0.30	0.40	0.50	0.40
Denmark	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Spain	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.30
Croatia	0.60	0.50	0.60	0.20	0.30	0.30	0.30	0.40
EU – Average	**0.40**	**0.40**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**
Cyprus	0.40	0.30	0.30	0.30	0.30	0.30	0.30	0.40
Portugal	0.30	0.40	0.30	0.30	0.30	0.30	0.30	0.30
Bulgaria	0.20	0.10	0.60	0.70	0.20	0.20	0.10	0.10
Austria	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Slovenia	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.20
Greece	0.20	0.20	0.30	0.30	0.30	0.30	0.40	0.40
Italy	0.20	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Romania	0.30	0.20	0.30	0.30	0.30	0.30	0.30	0.20
Germany	0.30	0.30	0.30	0.30	0.20	0.20	0.30	0.30
Latvia	0.20	0.20	0.30	0.30	0.20	0.30	0.30	0.20
Slovakia	0.20	0.10	0.10	0.20	0.20	0.20	0.20	0.30
Lithuania	0.10	0.10	0.20	0.10	0.20	0.20	0.20	0.20
Malta	0.20	0.10	0.10	0.10	0.10	0.20	0.20	0.20
Ireland	0.10	0.20	0.10	0.10	0.10	0.10	0.10	0.10

Source: Calculations with data from Eurostat (2), 2021

A more comprehensive representation of the EU public investment levels in sports and recreation can be shown by the government expenditure figures *per capita* (Figure 2). At the EU level, that amount is approximately 100 euros per person. According to this, Croatia is the 'worst' EU Member State, with annual investments in sports and recreation *per capita* of only 13 euros. Similar situations are reported in Romania, Bulgaria and Slovakia. On the other hand, the highest *per capita* government investments in sports and recreation is achieved by Luxembourg (492 euros), followed by Sweden and Finland.

Figure 2: General government expenditure on recreation and sport in the EU (2017; euros *per capita*)
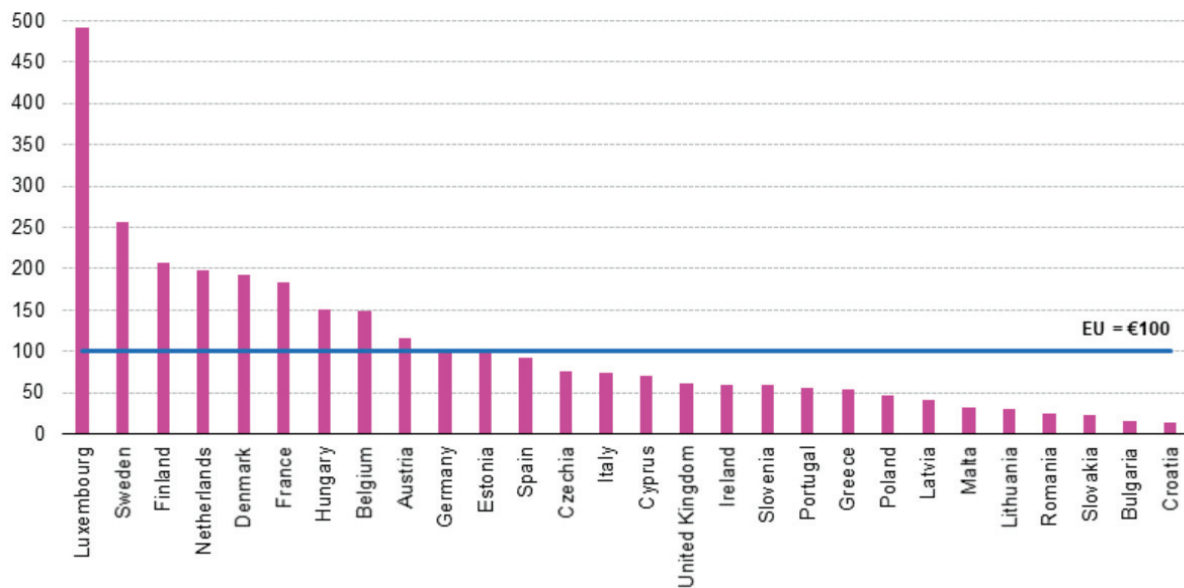
Source: Adapted from Eurostat (3), 2019

All presented evidence indicate that the levels of employment in the sport sector at the EU level increased in the observed period and was accompanied by positive trends and changes in age and gender structures. Special attention should be given to improving levels of employment of women and the youth, which could be a key driver of positive changes in the modern business models. Although more pronounced positive trends were achieved in the most advanced Member States, special importance should be given to significantly lower, but positive trends in less developed, new Member States, which indicates a systematic reduction of existing development disparities. Nevertheless, the analysis points to the stagnation of total public investment levels in EU sport, which in the future, especially in the context of the current COVID-19 crisis, could adversely affect the continued functioning and survival of a large number of entities directly involved in sport activities. Since 2020, additionally, the sports sector in the EU (as well as all other economic activities) face new challenges, which need to be overcome by meaningful and organized policies, which should diminish potential negative effects.

5. Challenges and perspectives of sport development in the EU

Globalization and diverse modern trends cause a number of challenges for the entire sports sector, and they largely determine the directions of sport policies and activities, and directly affect the economic, social and political effects. Confrontation of the sports sector with the effects and limitations arising from the current COVID-19 crisis is essential. Closure of borders, restrictions of movement for athletes, new ways of holding sports events and especially the limitations for audiences at sporting events greatly reduce the income of sport entities and eliminate the positive economic effects of sport on the economy. On the other hand, the introduced restrictions, from a social aspect, have resulted in some positive outcomes. For instance, in the absence of traditional social activities, citizens are increasingly oriented towards various forms of sports and recreation and thus in some way contribute to the improvement of the overall health of the population.

Furthermore, the use and abuse of doping and other illicit substances, which negatively affect the sports sector and annul its cohesion effects, has been identified as a key problem of global sport for years. It is crucial to emphasize the economic consequences of doping, which are reflected in the withdrawal of sponsors whose funds are used to finance sports associations and organizations, the overall negative perception of sports and distortions of competition (EUR-Lex, 2017). The issue of doping was placed in the focus of actions within the Work Plan for the 2017-2020 period, as well as the need for close cooperation and interaction between national and international institutions and organizations dealing with the use of doping – World Anti-Doping Agency (WAD) and the World Health Organization (WHO). This Work Plan also focused on the exchange of information among athletes and the creation of partnerships to ensure the effectiveness of the application of the common rules.

Public debates and perceptions of the majority of citizens firstly associate sports with various forms of professional sports, which are the most followed by the media. However, the European Parliament (1) (2020) draws attention to the fact that this segment of sport is only a small part of it and emphasizes that special attention needs to be paid to amateur sport, which represents the majority of activities in this sector. In doing so, its economic effects are essential, which basically reflected the revenues generated within the activities related to the procurement of equipment for amateur athletes. The benefits of economic integration at the EU level are mostly evident in this aspect, through the possibility of unlimited trade and the free flow of goods and services on the European Internal Market, positive effects of increased competition and wider choice, the economy of scale, cost reductions, etc.

Prospects for the development of sport are also reflected in its potential for the development of new products and services, especially in the areas of health care and prevention of serious injuries of athletes. The European Commission (2020) finds evidence that a large number of such projects are financed from the European Structural and Investment Funds and other available financial programmes and initiatives. Thus, the EU needs to step up its efforts in this segment in order to achieve international competitiveness and reduce the current lags behind major global competitors. The European Commission (2018) also states that the sports sector should continue to strengthen bonds with other economic activities, primarily tourism, education, media and the health system. Taking into account its previously analysed economic and social importance, the sports sector can be identified as a generator of progress, added value, new jobs and innovation.

Finally, by recognizing the current challenges of the sports sector, the European Platform for Sport Innovation – EPSI (2020) proposes a model to stimulate its further development and ensure survival, in nine main areas: (1) providing support needed to preserve jobs and living standards; (2) introducing tax incentives, through the easing of competition rules; (3) stimulating innovative programmes; (4) securing loans to ensure liquidity for sports entities through existing EU instruments; (5) redirecting existing national and EU funding toward the area of sport; (6) establishing a solidarity fund for amateur sports entities and their employees; (7) increasing orientation towards innovative and alternative sources of financing; (8) providing funds for the introduction of digital tools for teaching physical education in schools; and (9) stimulating a healthy lifestyle for the working population.

6. Conclusion

The paper analyses the segment of sport in the European Union and its contribution to the achievement of cohesion. The analysis indicates that the total employment in sports at the EU

level increased in the observed period, which was accompanied by positive trends in gender and age structure. Employment of women and young people has increased. This points to the contribution of sport on ensuring equal rights, combating discrimination and ensuring equal opportunities for all, which are the foundations on which the entire EU and its modern economic integration is being built. Nevertheless, the pronounced positive changes of key indicators are largely characteristic for the most advanced Member States, while the dynamics in the new, less developed countries are of a slower intensity. However, the presence of positive changes indicates the success of the implementation of structural reforms in this group of countries, thus ensuring a reduction in their gap between them and the more advanced Member States. Sport and related activities at the EU level are facing negative effects of the COVID-19 crisis and other contemporary challenges, which require organized actions and the implementation of appropriate measures. Priority is, thus, given to the orientation and provision of funds from available EU financial resources for the development of new products and services and the connection of the sports sector with other sectors and economic activities of common interest, in order to achieve economic growth and progress.

The main contribution of this paper stems from the identification of scientifically based effects of sport policies on the course of the cohesion processes at the EU level and the definition of scientifically determined challenges and perspectives of the sport sector, and the EU Sport Policy, within the current global trends, opportunities, as well as its limitations. Further research should focus on in-depth investigation (using appropriate statistical / econometric tools and models) and quantifying the effects of the COVID-19 crisis on sport indicators and the futher development of cohesion processes at the EU level.

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NON - FINANCIAL REPORTING – CHALLENGE FOR CROATIAN PUBLIC SECTOR

ABSTRACT

Today's accounting involves reporting to all interested stakeholders in a much broader sense than it has in the past. The EU has introduced non-financial reporting into its legislation through Directive 2014/95/EU provisions on non-financial reporting of public interest companies with over five hundred employees on reporting date, and the same has been incorporated into the legislation of member states. However, when it comes to the public sector, except in the case of public companies that are required by law to apply non-financial reporting, voluntary reporting is minor.

This paper provides an overview of the literature in the field of non-financial reporting of the public sector. Public sector non-financial reporting is a new area that has developed in the last five to ten years. Most of the research was done in the EU. Based on examples of good practice in the world, and especially the EU, the benefits of introducing such reporting in the public sector of the Republic of Croatia are presented. Research shows that non-financial reporting is not only a challenge but also an opportunity to raise the transparency of Croatian public sector activities.

Keywords: *non-financial reporting, integrated reporting, public sector, accounting*

1. Introduction

Non-financial reporting (NFR) is regulated at the level of the European Union through the EU Directive 2014/95/EU. Directive 2014/95/EU prescribes mandatory non-financial reporting for large public-interest companies with more than 500 employees. Furthermore, provisions on the categorization of undertakings have been transposed from EU legislation to the legislation of the Member States. Large enterprises are defined, for example, in Annex I to Commission Regulation (EU) No 651/2014 as enterprises that on the reporting day exceed two of the three conditions for a company to be considered a large enterprise, namely over 250 employees, turnover over 50 million and balance sheet total over 43 million. Thus, for the needs of the NFR, the EU has further raised the limit and limited mandatory reporting to companies that employ over 500 employees on the reporting day.

Directive 2014/95/EU is integrated into the Croatian Accounting Act (Official Gazette, 120/16, 2016), the Act stipulates that NFR disclosure is obligatory for the large companies and entities of public interest and which at the reporting date exceeded the criterion of an average of 500 employees during the financial year. These entities are required to include a non-financial report in their reports.

The non-financial report is to contain information to the extent necessary to understand the development, business results and position of entrepreneurs and the impact of activities related to environmental, social and personnel issues, respect for human rights and the fight against corruption and bribery. Therefore, public interest entities in their non-financial reports must include: a brief description of the business model, a description of their policies including the procedures of thorough analysis carried out, the results of these policies, the underlying risks of their business, and performance indicators (Official Gazette NN 120/16, para 21a).

In order for compilers of financial statements to be able to adequately report on NFRs in world practice, there are several NFR frameworks, the most famous of which are the IR Framework (2013) and GRI (2016) reporting framework. But the application of NFR began with the concept of the Triple bottom line (TBL). Sitnikov (2013) wrote that John Elkington (1994) coined the expression "triple bottom line" in his book Enter the Triple Bottom Line.

TBL concept suitably by Miljenović (2018) includes both; efficiency and effectiveness regarding financial, environmental and social impacts of the company. The whole paradigm of CSR insists on simultaneous company efficiency when achieving environmental impacts (eco-efficiency) and social impacts (socio-efficiency). Sources of the long-term sustainability in generating business results can be precisely identified using the business model integrated efficiency parameters represented by Figure 1. These aspects are regularly and transparently published in CSR reports provided by the companies.

Figure 1: Integration of efficiency parameters within the TBL model
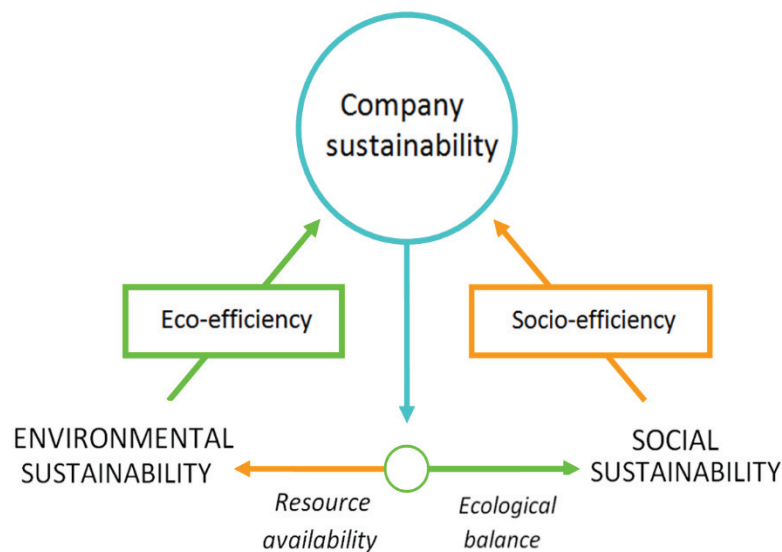
Source: Miljenović, 2018

NFR standards integrated TBL as a conceptual base for NFR. Therefore, the same approach can be applied to the public sector only in Figure 1 instead of company sustainability it is necessary to state public sector entity sustainability.

When it is about connection between NFR standards and TBL, for instance, Godfrey et al. (2010) concludes that the global reporting initiative (GRI) developed the most popular TBL-based approach, which contains principles and guidance of disclosure for all types of organizations. According to Kaur and Lodhia (2018), the public sector should contribute towards social and environmental challenges because of its social and fiduciary responsibility to conserve natural resources and to promote social welfare and equity. As sizeable employers, service providers and resource consumers, public sector organizations can significantly impact the national and global progress towards sustainable development.

ACCA (2013) made a study about investors needs from NFR, and 84% of investors surveyed agreed or strongly agreed that established standardised reporting frameworks should be used by companies. Also, 92% of investors surveyed agreed or strongly agreed that financial and non-financial information should be more integrated. Opinions like this one brought IR Framework more in use through last five years but GRI standards are still dominant in the EU.

Below is methodology and afterwards a review of the literature on the topic of NFR of the public sector and then the state of NFR in Croatia.

2. Methodology and hypothesis development

The intention of this paper is to present the state of NFR in the public sector of the Republic of Croatia. As the NFR of the public sector is a novelty in world practice, the presence of NFR in the public sector of the Republic of Croatia is investigated through the available literature and data on the NFR in the Republic of Croatia. Therefore, we ask research questions: what is the level of NFR in the Republic of Croatia in general? and to what extent is the NFR present in

the public sector of the Republic of Croatia? In addition to the above research questions, we are also interested in the situation in the world practice of the NFR, and especially the experience of the EU, because the Republic of Croatia has integrated Directive 2014/95/EU on the NFR in its legislation.

In accordance with the above research questions, we also set a working hypothesis which reads:

H_0 Non-financial reporting is not enough applied in Croatian public sector.
H_1 Non-financial reporting is enough applied in Croatian public sector.

In order to get answers to the research questions, we studied the available literature, especially recent editions (last five years), the state of the NFR and data on public sector reporting in the Republic of Croatia. In the following, through the literature review, an overview of significant research at the world and EU level is given, and then the fourth part of the paper presents the state of the NFR in the Republic of Croatia.

3. Literature review

Although non-financial reporting is regulated in public sector in a number of jurisdictions, and in spite of IR Framework (2013) and GRI standards (2016) operating globally as a frameworks applicable to all sectors for more than a decade, more recent research in the field of public sector accounting (Pizzi et al. 2020) provides evidence that application of IR and NFR as a way to provide non-financial information integrated with the financial information, in that setting is weak.

Pizzi et al. (2020) in their research for the period 2015-2018 shows that only 12.21% of Italian National Healthcare System entities disclosed at least one or more social report during the analyzed period. The shortcomings of the financial statements of the public sector in the area of non-financial reporting were also identified by Vašiček and Vašiček (2019) for the public sector entities in Southeast Europe but authors conclude that there are some improvements in the field.

Domingues et al. (2017) analyzed public sector organization worldwide, Europe (6 out of 15), followed by North America (5 out of 15), Asia (2 out of 15) and Latin America and Oceania (1 each). This research provides an analysis of Organizational Change Management for Sustainability reporting (OCMS) in the public sector organizations. The drivers of reporting and the role of stakeholders in the process are also analysed. Although lagging behind in the sustainability reporting, public sector organizations are beginning to use sustainability reporting as a communication tool, and this can trigger organizational changes for sustainability.

Karambia - Kaparadis et al. (2016) discuss the satisfaction gap in the public sector financial reporting, which arises from the inconsistency of the reports in the context of the reporting needs of the users of the financial statements in the Cypriot public sector. Manes-Rossi, (2018) researched the application of IR in the public sector through researching the reporting of the cities of Johannesburg, Melbourne, Warsaw, and state owned entities Munich Airport and ROSATOM. A fundamental lesson emerging from the Manes-Rossi, (2018) research is that, as it stands now, the <IR> Framework (2013) does not provide sufficient support for public sector entities for it to be considered the primary reference for accountability purposes when it comes to municipalities and state owned entities and to enable appropriate non-financial reporting. Dumay et al. (2010) analyse GRI standards implications on public sector and third

sector companies. The authors concluded that GRI guidelines are not fully compatible with public sector requirements, especially when it is about approach to sustainability. Public and third sector organizations need to rethink their approach to sustainability. Dumay et al. (2010) opinion is that these organizations must change to reflect viewing sustainability from an organizational perspective to viewing it from an eco-systems perspective, therefore moving away from the dominance of 'managerialist' practice and setting the standard for the manner in which all organizations disseminate information about their sustainability activities.

Manes Rossi et al. (2020) made a comprehensive study about papers published about NFR in the public sector. The authors have shown that two most researched areas are local government (29,7% of all papers) and educational institutions (29.7%). Also, Manes Rossi et al. (2020) researched, published research by the region of research. Results show that most researches have been made in the EU and UK (44%), while for instance Oceania is on the second place with 15% of all research in the field. But in the Oceania area, there are significant papers in this area such as Guthrie and Ferneti (2008) that explore voluntary sustainability reporting practices in seven Australian public sector organizations which use the Global Reporting Initiative (GRI) guidelines.

Farneti et al. (2019) examine 10 years of social reports by one "best practice" Italian provincial government. The authors found that social reports are becoming better through 10 years period, which means that practice will provide information that are more useful.

Thus, world practice shows that public sector NFR is something to work on, but research such as the aforementioned Farneti et al. (2019) and Vasicek and Vasicek (2019) indicate that the trend of the public sector NFR is on an upward trajectory and that stakeholders will get the desired information through the NFR.

4. Non-financial reporting – Croatia

The Ministry of Finance of the Republic of Croatia published a 2019 national study on NFR in Croatia for 2017 and 2018 (https://mfin.gov.hr). The study states that in Croatia in 2017 there were a total of 67 entities obligatory to publish NFR, and in 2018 there were 69 entities compiling a non-financial report. 61 companies subject to NFR submitted a report on non-financial reporting, while 13 companies voluntarily accepted the non-financial reporting. Of the total number of submitted reports, only 18% of entrepreneurs stated that their business is related to the goals of sustainable development. Thus, it is clear that in Croatia the application of NFR as a whole is weak and limited to about 70 companies in total. The study (https://mfin.gov.hr) shows that the largest number of companies in Croatia published data on NFR through an annual report (consolidated, non-consolidated or integrated), 39% of total. It would be interesting to see how many of the analyzed companies accepted the IR, but this data is not given. Manes Rossi et al. (2020) provide an overview of the reporting frameworks used and it is evident that the analysis of sustainability report was dominant in the papers on public sector NFR at the global level, and in recent years the number of papers on IR has grown, so it would be interesting to compare Croatian and world practice.

Croatian authors such as Miljenović (2018), Galant and Černe (2017), Dečman and Rep (2018), Omazić et al. (2020), and Vitezić and Petrlić (2018) most often write about the application of NFR in the real sector for the simple reason that in the real sector there is application of NFR while in the public sector application exists in SOEs that are obliged to apply according to European Union (EU) Directive 2014/ 95/EU and Croatian Accounting Act (2016).

Considering that Croatian SOEs are most often joint stock companies reporting according to International financial reporting standards in terms of reporting, there is no difference in reporting requirements between SOEs and privately owned companies.

The issue of the application of NFR in the public sector is indirectly stimulated by papers and studies in areas other than accounting. Ott et al. (2019) researched voluntary online local budget transparency (OLBT) in Croatia. The authors addresses the determinants of voluntary OLBT in Croatian 428 municipalities and 128 cities in 2015-2017 period, using probit panel data models at three different sample levels to confirm the proposed hypotheses. They found that residents' income per capita has direct and indirect effects on voluntary OLBT. The results are confirming stakeholder theory by confirming that the greater the impact of stakeholders on the entity, in this case the public that has access to the reports if it has a higher income and better access to the internet will be more transparent reports.

Non-financial reporting is given some prominence, albeit secondary, by some of the IPSAS standards by wich Croatian public sector accounting mainly presents statements. For example, in para 129, IPSAS 1, Presentation of Financial Statements (2020), it is stated that notes to financial statements also contain non-financial disclosures, e.g., the entity's financial risk management objectives and policies etc.

However, if the reports of SOEs with over 500 employees on the reporting day are removed, the Croatian public sector transparency is by the Koprić (2018) paper at low level. Although Croatia by Koprić (2018) has invested significant efforts in the improvement of openness and transparency of government there are still issues. For instance, Koprić (2018) wrote:

"Croatian national statistics provide neither full nor structured information about public sector employment. No data in full-time equivalents are available at all. Data are available for state administration, including state civil servants and employees paid from the state budget; local civil servants and employees paid from local budgets; and public servants and employees in the public services paid from the state budget… …The data published by the Ministry do not contain figures for public funds and agencies whose employees are not paid from the state budget. Because of this, the number of public employees in them may be established only by the method of approximation based on older data…"

This indicates that even the basic data that should be made public are not available to the public. The question is how to assess the efficiency of the public sector without available data?

Although the basic data are not available to the general public, the World Bank (2019) in its analysis describes the state of the Croatian public sector as follows:

"Croatia has a large public sector, which is underperforming in a number of indicators of performance—indicating challenges and weaknesses that cut across sectors and limit prospects for growth and the emergence of a dynamic private sector. Weak administrative capacity is a key reason for the difficulties in programming and implementing EU structural and investment funds. The main institutional challenges to address include poor planning, lack of effective coordination and cooperation across ministries and levels of government, and a weak public investment management process."

All of the above on the inefficiency of the public sector in Croatia, but also the unavailability of information leads to the need to improve reporting in the public sector, and as one of the

solutions impose NFR standards, of which recently increasingly used in the world IR Framework level (2013). Content elements of IR Framework (2013) are containing all necessary for stakeholders' informational needs. It contains following nine elements explained in the Table 1 below.

Table 1: IR Framework 2013 Content Elements

1. Organizational overview and external environment	An integrated report should answer the question: What does the organization do and what are the circumstances under which it operates?
2. Governance	An integrated report should answer the question: How does the organization's governance structure support its ability to create value in the short, medium and long term?
3. Business model	An integrated report should answer the question: What is the organization's business model?
4. Risks and opportunities,	An integrated report should answer the question: What are the specific risks and opportunities that affect the organization's ability to create value over the short, medium and long term, and how is the organization dealing with them?
5. Strategy and resource allocation	An integrated report should answer the question: Where does the organization want to go and how does it intend to get there?
6. Performance	An integrated report should answer the question: To what extent has the organization achieved its strategic objectives for the period and what are its outcomes in terms of effects on the capitals?
7. Outlook	An integrated report should answer the question: What challenges and uncertainties is the organization likely to encounter in pursuing its strategy, and what are the potential implications for its business model and future performance?
8. Basis of preparation and presentation	An integrated report should answer the question: How does the organization determine what matters to include in the integrated report and how are such matters quantified or evaluated?
9. General reporting guidance	General reporting guidance matters are relevant to various Content Elements it requires to explain: • Disclosure of material matters, • Disclosures about the capitals, • Time frames for short, medium and long term, • Aggregation and disaggregation.

Source: The International Framework (January 2021), https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf

Thus, the IR Framework (2013) is a possible solution for displaying information, but non-financial reporting is not optimal even in world practice. Croatia is not an independent example of inadequate non-financial reporting. There are examples of inadequacies in far more developed economies as well. For example, Greling et al. (2015) investigate sustainability

reporting in the Austrian, German and Swiss public sectors and find that the economic component is most prevalent in public sector reports while reporting on other components of TBL is significantly weaker in the observed countries.

It is our opinion that the solution to all these shortcomings in public sector reports is the full application of NFR standards, but in a way that public sector organizations report in accordance with their needs and stakeholder interests. Thus, if sustainability through the economic component of the report is not the basic information need of the organization but for example socio-efficiency, the organization should use the IR Framework or GRI Standards to express this component, which is the basic logic of NFR in the public sector. In addition to the above, states should insist on NFR in cases where they fund organizations. Zielińska-Chmielewska et al. (2021) opinion is that eco-efficiency indicators should be used on a larger scale in various types of projects financed or supported by the state. It is worth promoting the use of mentioned indicators in the implementation of government projects.

Furthermore, it is the public sector organizations that should apply the NFR, regardless of its size, because the greatest interest of stakeholders for the components that are published through the NFR is with public sector organizations. However, there are also bright examples of the voluntary application of NFR in the Croatian public sector, the City of Pula has recognized and accepted the values of socially responsible governance and has been constantly incorporating them into their managerial practices, including financial reporting. In 2014, the City of Pula delivered the first report named "Sustainability report" following G4 directives, namely the Global reporting initiative (GRI) and it contained all the relevant elements prescribed by the GRI standards. Apart from the city of Pula, which voluntarily applies NFR, a positive example among those obliged to apply NFR is SOE of special importance for the Republic of Croatia, the company INA d.d. which has been applied the NFR for years, and their reports are available on the Web (www.ina.hr). The reports of INA d.d. from the field of NFR have won several awards in recent years (www.ina.hr).

Taking into account all the above, the conclusion is that the NFR in the Republic of Croatia is applied only in the case when the companies are obliged to apply and there are about seventy companies that compile the NFR. Therefore, we can say that Ho is accepted because the NFR is in poor implementation and if we take the bigger picture, not just the public sector.

5. Conclusion

The development of the area of non-financial reporting has been going on for the last twenty years. But since 2013, this area has been regulated at EU level. NFR standards have been developed, the most significant of which are the GRI Standard and the IR Framework. Mandatory disclosure of non-financial information in the EU is limited to companies with an average of over five hundred employees on the reporting day. The public sector is included in the mandatory non-financial primarily through SOEs to which the NFR obligation applies if they meet the aforementioned number of employees at the reporting date.

Voluntary implementation of NFR in the public sector is still weak and research in the field of NFR implementation in the public sector worldwide is limited to a few dozen organizations or case study analyzes of implementation in each organization are conducted. According to independent studies, such as the World Bank study, the public sector occupies a large share in the Croatian economy and is characterized by a lack of transparency. Which bring us to conclusion that is necessary to report better on the activities of public sector entities.

At the macro level, the central government would have to apply the principles of the NFR, which would have a positive impact on transparency. While at the micro level, the central government should insist on NFR in cases where it directly funds organizations and apply the idea expressed in Zielińska-Chmielewska et al. (2021), which is that the NFR would have to be implemented in various types of projects financed or supported by the state.

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A professional paper

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LET´S SURF ON THE FUTURE WORKFORCE

ABSTRACT

The world is changing, and the future is happening now. Organizations must prepare themselves with competitive advantages to survive. Human Resources, one of their most important assets, can only really make a difference if they are properly motivated and prepared. However, the challenges triggered by Industry 4.0 introduce fast changes, making certain skills and job profiles play a critical role. Many scientific articles address the relation Industry 4.0 effects on employees, mostly centered on job profiles that demand new skills, which can be resilient to change. Higher Education Institutions have a central role in narrowing the competence gap through collaborative work with firms and policymakers. Programs can be jointly designed and created, to obtain practical experience and enable students to learn both hard and soft skills. However, the shifting business environment is distressing the working conditions and competencies of individuals. It is fundamental to study and identify essential competencies for the digital workforce. This research aims to understand the perceptions of the demand for digital workforce competencies are. A quantitative methodology based on a case study will be applied. Using a questionnaire, students of Polytechnic Institute of Cávado and Ave (IPCA) will be invited to pronounce themselves on their perception of the new skills required to enter the job market successfully. Research seems to reinforce the need for Higher Education Institutions to be more focused on critical thinking, innovation, and creativity, as well as ethics, emotional intelligence, and sustainable development.

Keywords: *Competences, Higher Education, Industry 4.0, Job Profiles, Skills.*

1. Introduction

Digital transformation represents a new era of human development. It is assumed as an instrument that has modified not only the paradigm of human work but also the specificities of the professions. The general perception is that digital technologies have several impacts on the workplace and are therefore often associated with a survival imperative, a challenge, and sometimes a threat to job stability. Given the uncertainties about the future, one of the biggest challenges of digital transformation and in particular industry 4.0, will be to face the unrest in the labor market caused by advanced automation, robotics, and Artificial Intelligence.

In just 15 years, digital has transformed the world. Currently, about 3.5 million people actively use the Internet, and yet it is only half of the planet Earth (Portugal INCoDe.2030, 2021). Comparing the digital age to the industrial revolution, the former is noticeably faster in the way it has reached every corner of the world. Digital has thus gained the world, enhancing the possibility of any country well-endowed with digital competence to have a differentiated capacity for economic advancement, competitive advantage, and strong fight against exclusion. In this context, education and training are central drivers of the development of societies. This requires a pedagogical policy that stimulates critical thinking and creativity. Besides, to meet the challenges of digital transformation, educational institutions will have to redesign their curricula and their teaching, learning, and research methodologies in a strategy of consortia of experience and partnerships with business entities.

Learning methodologies based on solving real problems of companies, projects, and multidisciplinary teams are now part of a dimension of pedagogical innovation that is already being applied and that in the future will be even more usual. The evaluation model itself will no longer be punctual, hierarchical, and purely theoretical and will become constant, performed by peers and teachers, based on behavior, competencies, and skills. Similarly, lifelong learning will be an increasingly present reality, even to respond to a demanding and rampant development caused by digital transformation.

In the face of all these new challenges, are higher education institutions preparing their graduates for the complexity of the future? Are digital skills are being integrated into academic curricula? Should educational institutions continue to be reactive to this revolution or, on the contrary, undertake and innovate in teaching/learning models?

According to the World Economic Forum (2020), 1 in 3 jobs will disappear by 2025. Why is the current education model very much the same as in the past when the employment scenario is expected to change in the next five years? The World Economic Forum's Future of Work report predicts that 65% of children attending basic education should work in professions that do not yet exist. How are higher education institutions dealing with this reality and what strategies are being developed? It is known that the future will be complex and disruptive, but it is also known that it is very close.

2. Theoretical Background

Realizing future challenges to the labor market can be an effective way to predict the skills that will sustain that market. Interestingly, unemployment does not emerge as an identified challenge (objectively), although it corresponds to a cross-cutting fear when one perspective the progress of the fourth industrial revolution. Several studies have a non-direct relationship between technological advances and unemployment (World Economic Forum, 2020). Above all, they highlight the necessary conversion of employment because of the transition to digital. Also, automation will put an end to the functions of people's today. It is anticipated that the jobs of the future will promote a need for recruitment in areas such as the green economy, cloud computing, big data, and artificial intelligence, among others (Schwab, 2016).

In this comparison between "jobs that will be lost" and "tomorrow's jobs" there seems to be a positive balance, at least in the long term. However, and in the immediate future, the scenario may not necessarily be so. The functions most easily replaced by machines correspond to professions performed by less-skilled workers. Thus, although the employment balance may be positive, it will be accompanied by a kind of "technological Darwinism", leaving behind those

who will not be able to keep up with this technological evolution (Schwab, 2016). The possibility of training and re-qualifying workers is lower in a contraction labor market, and this is even more impaction for workers who will remain in the same tasks. The skills associated with these tasks, in the next five years, will tend to change by 40%, requiring that 50% of workers go through a re-qualification process above 4% (World Economic Forum, 2020). By 2025, employers forecast a reduction in the workforce in more routine roles (redundant roles) of 6.4%, from 15.4% to 9%, and emerging professions tend to grow 5.7%, from 7.8% to 13.5%. Based on these figures, it is estimated that by 2025 machines could replace 85 million jobs, while 97 million new functions could emerge in a new dimension of the division of labor between humans, machines, and algorithms (World Economic Forum, 2020).

With a more moderate perspective than most studies on the impact of automation on employment, the Pearson platform predicts that: (i) only one in five workers performs jobs that will be affected; (ii) professions related to agriculture, trade, and construction exhibit interesting and heterogeneous patterns, suggesting the existence of periods of opportunity along the skills ladder; (iii) only one in ten workers pursues a profession likely to grow. These professions include the sectors/areas of education and health, where technology should have a predominant effect on improving results and not a reduction in the workforce; (iv) Seven out of ten workers are in jobs with greater uncertainty about the future (Bakhshi et al., 2017).

For Portugal, based on the analysis of 800 occupations and 2000 tasks performed in various sectors, it is estimated that the increase in the use of robotics and artificial intelligence can lead to the elimination of 1.1 million jobs, creating from 600,000 to 1.1 million new jobs, especially in health, social assistance, science, technical professions, and construction. The most vulnerable sector is manufacturing and trade. In contrast, the health and social care, and education services sectors face a relatively low risk of job loss due to automation of 38% and 28%, respectively (Cedefop, 2019).

According to the Global Employment Trends for Youth (2020) report, there are approximately 1.3 billion young people between the age of 15 and 24. The transition to the labor market or not has a long-term impact on the lives of these young people and the socio-economic development of their countries. Approximately 497 million young people, about 41% of the global youth population, are linked to the labor market. Of these, 429 million are employed and about 68 million are looking for and are available to work. In this perspective, more than half of young people, accounting for around 776 million, are out of the labor market, and of these, 267 million correspond to young NEETs (they do not study, do not work, or attend any training) (International Labour Organisation, 2020). The study also notes that about 126 million young people, 30% of young employees, remain in extreme or moderate poverty despite having a job. This is due both to low wages and to the precariousness of industrial relations. In a way, the promise of digitization could widen existing inequalities and create new ones as some jobs disappear and some skills become obsolete (World Economic Forum, 2020).

Another aspect to be considered in this reflection is the impact of digitization on tasks. This impact will not be distributed evenly across the different professions, nor will it occur at a constant rate. It is likely to be more concentrated in certain areas of activity, such as industry or financial area, and specific geographical areas, but this does not prevent it from developing into other professions or areas.

In this scenario of great uncertainty, it is imperative to understand the jobs and skills necessary for the future. The theory of dynamic effects puts into perspective an interesting two-

dimensional analysis: (i) first, economies need to produce certain skills to meet the demands of the labor market, however, and at the same time, the current supply of qualifications can actively influence the future needs of the labor market and thus the effect can work in two ways, both being economies to poetize skills, and skills that exponentiate economies; (ii) second, employers tend to invest and/or locate themselves in areas where relevant skills are plentiful (preferably), and this investment can boost demand for other skills; in the same way that antagonistic perspective results in the following equation: no relevant skills = no investment + no search for new skills. In the end, no relevant skills are probably a condition not to invest, which determines not to employ.

Although this digital transformation enhances the results of companies, there was a whole investment made. Digital transformation happens precisely because companies and science have invested in this direction. In 2019, the main concern of directors, CEOs, and senior executives was precisely the risk of digital transformation. The investment in this size was considerable, 1.3 billion dollars, estimated that 900 billion have gone "to waste". By other figures, 70% of all digital transformation initiatives do not achieve their objectives, 2019).

2.1. Competencies

Competencies are "the set of knowledge, attributes, and capabilities that allows individuals to perform an activity or task successfully and consistently, and that can be constructed and improved through learning" (OECD, 2019a). The term "skills" is broadly used and refers to what a person knows, understands and is capable of doing" (European Commission, 2019). These definitions are essential to realizing that skills are the result of function, capabilities, tasks, and learning, not a genetic predisposition, but a process of accommodation of knowing how to do. In terms of extension, skills are of strategic importance for employability, growth, innovation, and social cohesion (Europarl, 2017).

The study of the International Adult Skills Assessment Programme (PIAAC), carried out by the OECD (2019), states that at European level some 70 million adults do not have basic skills such as written comprehension, written expression, and numeracy, reverting to a huge limitation to find decent employment and an adequate standard of living (Europarl, 2017).

The ability of companies to take advantage of the growth potential through the adoption of new technologies is conditioned by skills shortages. Around 40% of European employers say they have difficulty in finding people with the right skills so that businesses can grow and innovate (Europarl, 2017). According to the 2020 Study "The Future of Jobs," this perspective is further intensified, with 55.4% of companies identifying skills shortages as the main obstacle to the adoption of new technologies. This same study states that, despite the current economic crisis, 66% of employers recognize the need to invest in human capital and reveals that the recovery of investment, resulting from the re-qualification of its employees, is one year. On average, companies estimate that about 40% of workers will need re-qualification of six months or less, and 94% of business leaders indicate that 65% of employees are expected to acquire new skills at work. Also according to the study, employers are receptive to supporting workers who will have to exchange functions and predict the need to transition at least 46% of these workers to emerging roles. In this way, companies seek to ensure qualification and re-qualification opportunities for the majority of their employees (73%), with 44% of the skills that employees will need to perform their functions effectively (World Economic Forum, 2020) expected by 2025.

On the other hand, countries with the highest rates of adults with low proficiency in basic skills and digital skills have lower levels of labor productivity and, ultimately, less optimistic prospects for growth and competitiveness. According to the International Labour Organization (International Labour Organization, 2020), between 25% and 45% of the European workforce lack skilled or overqualified for the functions it performs (Cedefop, 2019). In this context, 26% of adult workers lack the skills they have in the job they hold, for example, and more than 30% of highly skilled young people occupy jobs that do not meet their skills and aspirations. Added to these figures is that almost 23% of the population aged 20-64 has insufficient training (Europarl, 2017).

Even in this context, half of the workers will have to update their skills in the next 3 years to be at the level of the expectations of this century. The very concept of skills of the future requires a change so profound that it reaches the foundations of the education system (World Economic Forum, 2020).

The education system will necessarily have to move from a curriculum and evaluation-centered model to a pedagogical system that stimulates critical, reflective, creative, and adaptive thinking and reinforces cognitive and computational skills, predominantly in the area of information technology, data analysis, and cloud computing. The process of pedagogical innovation becomes not only revolutionary but also necessary.

OECD governments have identified the development of cross-cutting skills as a priority, as reflected in the document "A New Skills Agenda for Europe" (European Commission, 2020). In this context, the European Union has established that over the next five years Europe should ensure that: (i) 120 million adults participate in annual learning actions: (ii) 14 million low-skilled adults participate in annual learning actions; (iii) 2 million job-seekers must have a recent learning experience and (iv) 230 million adults have basic digital skills.

For this purpose, this Agenda includes 12 actions: (1) The Pact for Competences; (2) Strengthen strategic information on skills; (3) EU support for national strategic actions to improve skills levels; (4) Vocational education and training (VET) adapted to the future; (5) Implementation of the European Universities initiative and the improvement of scientists' skills; (6) Skills to support ecological and digital transitions; (7) Increase the number of graduates in science, technology, engineering, and mathematics by promoting business and cross-cutting skills; (8) Life skills; (9) Initiative on individual learning accounts; (10) A European approach to micro-credentials; (11) New Europass platform; (12) Improving the framework for unlocking investments (European Commission, 2020).

According to the Skills Panorama of the European Centre for the Development of Vocational Training (Cedefop, 2019), by 2030, total employment in Portugal will increase, driven by the creation of new jobs in administrative services, ICT and energy supply. The occupations that are expected to create newest jobs are office professionals, researchers, and engineers. For the total number of open vacancies (including job substitutions), 4 out of 5 will require high or medium-level qualifications. The change in future employment will be 9.4% (between 2020 and 2030), and the average employment growth in Portugal in the same period is estimated at 27,235. The minimum number is 100 for mining and quarrying, while the maximum is 132,800 for administrative services - an index well above the other sectors. In the European Union, this agency shows that by 2025, 49% of all job vacancies will require high-level qualifications, 40% of mid-level qualifications, while only 11% will require low-level or no qualifications.

This is the essential question. What are the skills of the future?

According to a survey of several theoretical sources, the following are identified:

- Reference: "Next Skills"

Identified skills: Curiosity, imagination, vision, resilience, and self-confidence, as well as the ability to act in a self-organized way. Understand and respect the ideas, perspectives, and values of others, and ability to deal with errors and setbacks, while progress ink in a consolidated manner (OCDE, 2020).

- Reference: "Future Skills for the World of Tomorrow"

Skills identified: literacy learning (learning literacy); self-determination; self-competence; reflective competence; decision-making (decision competence); initiative and performance competence; ambiguity competence; ethical competence; design-thinking competence; innovation competence; systems competence; digital literacy; give sense making; design and future competence (future and design competence); cooperation competence; communication competence (Ehlers, 2020).

- Reference: "The Future of Jobs Report 2020"

Identified skills: Critical thinking and analysis, problem-solving, and self-management skills, such as active learning, resilience, stress tolerance, and flexibility (World Economic Forum, 2020).

- Reference: "The Future of Skills in 2030"

The "Pearson" platform (collaborative research from Nesta and Oxford Martin School) perspectives on-term skills, reconciling for these projections, experts and artificial intelligence. It also provides a forecast overview of the "top competencies" for 2030, relating these skills with the 10 professions with the highest demand in this period. To this end, it uses the O*NET (Occupational Information Network) database, developed under the sponsorship of the U.S. Department of Labor, to constitute a free online database containing definitions and statistics relating to the professions. O*NET is widely considered the most detailed and comprehensive database of competencies used in the professions, establishing itself as a reference source used by countries and international organizations. The limitation (or not) of this study is that it presents projections only for two distinct realities: The United States of America (USA) and the United Kingdom.

Identified competencies: (i) particularly strong emphasis on interpersonal skills related to teaching, social perception, service orientation, and persuasion; (ii) higher-order cognitive skills, such as complex problem solving, originality, fluency of ideas, and active learning; (iii) skills related to systems-oriented thinking (i.e., the ability to recognize, understand and evaluate complex sets of information), such as judgement, decision-making, analysis and evaluation of systems (Bakhshi et al., 2017).

- Reference: World Economic Forum

Identified skills: (i) analytical thinking and innovation; (ii) active learning and learning strategies; (iii) solving complex problems; (iv) thought and critical analysis; (v) creativity, originality, and initiative; (vi) leadership and social influence; (vii) use, monitoring, and technological control; (viii) technological design and programming; (ix) resilience, stress tolerance, and flexibility; (x) reasoning, problem-solving and ideation; (xi) emotional intelligence; (xii) troubleshooting and user experience; (xiii) service guidance; (xiv) systems analysis and evaluation; (xv) persuasion and negotiation (World Economic Forum, 2020).

- Reference: "Key Competences for Lifelong Learning"

Identified skills: result from the combination of knowledge, skills, and attitudes. Key competencies are developed throughout life through formal, non-formal, and formal processes: (i) literacy; (ii) multilingualism; (iii) mathematical competence; (iv) competence in science,

technology, and engineering; (v) digital competence; (vi) personal, social and learning to learn skills; (vii) citizenship competence; (viii) entrepreneurship competence; (ix) cultural awareness; and (x) competence of expression (European Commission, 2019).

- Reference: "Labour Market Relevance and Outcomes of Higher Education Systems: Analytical Framework and Country Practices Report"

Skills identified: (i) good knowledge and technical skills; (ii) good generic cognitive and information processing skills; (iii) social and emotional skills. The competencies of the 21st century comprise 2 subsets: (i) ICT skills - pedagogical and ethical and (ii) higher-order skills (critical thinking, creativity, problem-solving, self-regulated learning, communication, and collaboration) (OECD, 2017).

- Reference: "OECD Skills Outlook 2019 Thriving in a Digital World"

Identified skills: combination of skills: (i) strong cognitive and socio-emotional skills; (ii) digital skills (OECD, 2019b).

The qualification of people to work is one of the primary requirements and can be considered a challenge for industries, knowledge institutions, and governments, which should create incentives and policies aimed at human work issues. Many of today's jobs and many more soon will require specific skills such as (i) technological knowledge, problem-solving and critical thinking; (ii) persistence, collaboration, and empathy; (iii) communication, creativity, innovation, ease of decision making, analytical skills and leadership. These skills are key to the progression of scanning 4.0. and for work in Industry 4.0.

2.2. Learning approaches

It is believed that skills can be developed in formal education with curricula, programs, workshops, laboratory work, training sessions, projects, business visits, and study days, in individual or group learning approaches (Cinque, 2016). In turn, informal learning can help the development of skills, attitudes, and values by promoting the application of the capacities of trainees in problem-solving in non-academic situations, according to the real needs that are not structured a priori (Bamber, 2013).

In a complementary logic, in addition to formal and informal teaching, integrative learning strategies are allied. By promoting multidisciplinary, cooperative, reciprocal learning and critical reflection (Tynjala et al, 2016), these strategies are particularly suitable for the development of sense-making skills, social intelligence, collaboration, and innovative thinking required for work performed in virtual environments. Finally, smart learning is also pointed out as a relevant resource for the development of future-proof skills. It comes with the support of intelligent technologies such as cloud computing, data analysis, and visualization, which promote personalized and adaptive learning (Gros, 2016). It presents itself as the concept that will revolutionize vocational education and training by personalizing learning and freeing the teacher/trainer from the task of collecting and structuring content and contexts.

The complementarity of all these types of learning approaches presents itself as a challenge to be embraced by higher education institutions to develop the appropriate skills for increasingly virtual and intelligent work environments.

3. Empirical Evidence and Results

3.1 Methodology

The methodology and the selection of the method were developed around the main aims of the study. It followed an interpretivist approach, whose purpose is to study and understand the phenomenon under study in its context, thus contributing with improvements to the phenomenon itself. Being an interpretivist study, the results may not be generalised.

The present research has been done in 2021 and was conducted on the Portuguese Polytechnic Institute of Cávado and Ave (IPCA), a young Higher Education Institution for 25 years. IPCA has 5 Higher Schools, namely Management, Technology, Design, Professional Technical, Hospitality and Tourism. IPCA develops as an educational offer through 14 bachelors, 16 master's degrees, 11 postgraduate courses, and 28 Professional Technical Courses. The case study only relates to the master students, in a total amount of 581 students.

This study aims to understand the perceptions of the demand for digital workforce competencies For this purpose, it was prepared a questionnaire with 3 main areas namely socio-biographic data, students' perception, and market needs. It was used a Likert scale from 1 to 5, representing from less to maximum levels. The questionnaire was sent by google form on February 2021 and has been previous evaluated by 3 students and 2 teachers. After one-week data were collected and analysed.

3.2. Results

The sample is composed of 84 students where the most represented gender is the female, with 71.4%. As can be seen in Table 1, most respondents are between 20 and 25 years old, representing 38.1% of the sample. The second group with the highest representativeness is the age group between 26 and 30 years old (23.8%). Lastly, with 6%, the age group between 35 and 40 years old appears.

Table 1: Age of inquired students (years old)

20-25	26-30	31-35	36-40	41-45	more than 45
38,10%	23,80%	8,10%	6,00%	9,50%	14,50%

Source: Authors

Most respondents study at the Higher Management School (57.1%). The Higher Technological School appears in second place, with 22.6%. The third ranking belongs to the Higher Hospitality and Tourism School (10.7%) and finally the Higher Design School with 9.5%.
The masters are related to Audit, Accounting and Finance, Digital Design, Product Design and Development, Electronic and Computer Engineering Computer Science and engineering. Engineering in Digital Game Development. Taxation Management, Municipal Management (b-learning), Organizational Management, Tourism Management, Illustration and Animation, Marketing, Integrated QES Management Systems, and Solicitor.
Most respondents attend the 1st year of the master's degree, representing 60.7% of the sample (Table 2).

Table 2: Year of studies

1st year (curricular)	2nd year (project)
60,70%	39,30%

Source: Authors

Regarding professional experience, 77.4% of respondents have a job. 13.1% have professional experience but are not currently employed and only 9.5% of students in the sample never had job experience. Respondents work in all sectors of activity, with a special focus on services (28.4%), industry, and public services *in exequo*, with 19.4%.

The functions they exercise are very varied and at different levels, from the most operational to managerial positions. Some examples are the following: industrial designer, software developer, certified accountant, management, banking, quality manager, technical assistant, physiotherapist, finance, tourism, logistics, and commercial.

The most frequent professional experience is between 1 and 3 years, representing 32.9%. It follows, with 31.6%, 10 or more years. In last appear he respondents with 7 to 9 years of experience (15.8%), as seen in Table 3.

Table 3: Professional experience (in years)

1 - 3	4 - 6	7 - 9	10 and more
32,90%	19,70%	15,80%	31,60%

Source: Authors

About the topic of digital transformation for the labor market, it is considered very important by respondents, representing this opinion 70.2% of the sample. Considered as important, it is represented by 26.2% and no respondent considers the topic unimportant (Table 4).

Table 4: Digital transformation for the labour market

of no importance	litle importance	neutral	important	very important
0,00%	0,00%	3,60%	26,20%	70,20%

Source: Authors

The importance of new skills for the professional future given the evolution of industry 4.0 is perceived as very important for computer skills (68%), Quality Control (53%), Communication and Virtual Collaboration (52%), Analysis and Decision Making (51%), Computational Thinking and Creativity (48%), Problem Solving (47%) and People Management (41%). For Cognitive Flexibility (60%) and Negotiation (52%), the perception is that they are important.
The most worked skills in the Masters are perceived as important for Coordination with others (44%), Critical thinking (43%), Virtual collaboration (40%), Literacy of the new media (39%), Cognitive flexibility (38%), Communication (37%), Emotional intelligence, Active listening, People management (36%), Analysis and decision making (28%).
The activities considered by the respondents as being the most appropriate to train on how to adapt current skills to the needs of the digital transformation of the economy (60%), Guidance on new and emerging forms of employment (57%), Thematic workshops (face-to-face workshops focusing on topics related to digital transformation) (53%) and Case studies on digital transformation in the labor market (33%). The List of professions due to their

susceptibility to digital transformation, with 43% and the Support Manuals for training and counselling professionals on the subject, with 36%, are considered only adequate.

About the possibility that the master's degree will help them to grow professionally, 52.6% of the respondents say that it will help them a lot and 30.3% totally. Only 1 respondent believed attending the master's degree will not help him at all (Table 5).

Table 5: Master's degree as a possibility to grow professionally

not at all	very litle	neutral	a litle	a lot
1,30%	2,60%	13,20%	52,60%	30,30%

Source: Authors

When inquired about what skills the labor market values, respondents refer to Ethics, People Management and Teamwork, Linguistic Competencies, Creativity, Adaptation and versatility, Availability, Computer skills, Responsibility, Interpersonal relationships, and empathy. They also point out Entrepreneurship, Initiative, and Pro-activity, Communication, Problem-solving. Leadership and Critical thinking.

When asked about their perception of the company's receptivity in terms of applying the new skills, 46.7% of respondents believe that there is a lot of receptivity, 28% that it is neutral, and 21.3% that it is all (Table 6).

Table 6: Perception of the company's receptivity in terms of applying the new skills

not at all	very litle	neutral	a litle	a lot
1,30%	2,70%	28,00%	46,70%	21,30%

Source: Authors

In the exercise of their duties,54,7% of the respondents already have attended some training/action/event to reinforce some of the new skills (Table 7).

Table 7: Training on job to reinforce some of the new skills

yes	no
45,30%	54,75%

Source: Authors

Regarding the need for more information/guidance/training on the impacts of digital transformation at work, 58.7% of the respondents already have sensitized some superior / manager/decision-makers.

3.3. Discussion of Results

Students on the sample seem to know market needs as well as challenges presented by Industry 4.0. Respondents are mostly between 20 and 40 years old, representing 61,9% of the sample. They have different backgrounds and came from different Higher Schools belonging to IPCA. Almost all (97.4%) believe that digital transformation is important or very important for the labor market.

When comparing their perception of what concerns skills and evolution of industry 4.0 to how their masters are preparing them for the future, respondents only refer to Virtual collaboration, Cognitive flexibility, and Communication.

However, when respondents compare skills and evolution of industry 4.0 to how do they assess the use of skills in the performance of their duties, they refer to Virtual collaboration, Cognitive Flexibility, Communication, Computer Skills, and Problem-solving.
Results show that master courses are helping students with the use of skills in the performance of their duties in what relates to Coordination with others, Virtual collaboration, New media literacy, Cognitive flexibility, Communication, Emotional intelligence, Active listening, and Computer skills.

Finally, what concerns students' perception about skills and evolution of industry 4.0 to how their masters are preparing them for the future and how do they assess the use of skills in the performance of their duties, only Virtual collaboration and Cognitive flexibility is simultaneously referred to.

It seemed that master's students remain focused on the present skills even they are aware of the changes that are occurring and challenges that emerge from it. Masters are preparing students for the present market but should be more focused on soft skills, namely critical thinking, creativity, problem-solving, self-learning, ethics, communication, and leadership.

4. Conclusion

Professions and their skills profiles are not immutable. Professions must be redesigned, combining, in this context of digital transformation, exclusively human skills with the benefits of increasing productivity generated by technology. How these competencies are balanced will chart the course of the workforce.

Future skills will be, among others, maths skills and science skills. Critical thinking emerges as the macro competence to consider. It follows creativity and innovation, problem-solving, self-learning, ethics, communication, leadership, the ability to work as a team, and emotional intelligence.

Emotion, empathy, and ethics are presented as key differentiating competencies of robots. In essence, it is about improving the skills that make human beings more human. Digital skills (more technical) are a necessity, but the exponentiation of "intrasubject" and "intersubject" will be a mark of this evolutionary scenario marked by digital transformation.

The education system must adapt and monitor the ongoing change to respond to what the market demands. The teaching model will have to be more focused on critical thinking, innovation, and creativity, making a kind of ablation to the current teaching system very focused on the ability to memorize, solutions and theoretical frameworks for existing problems. Combining types of learning approaches presents itself as a challenge to be embraced by higher education institutions to develop the appropriate skills for increasingly virtual and intelligent work environments.

According to the empirical evidences and results of the case study master's students of IPCA remain focused on the present skills even they are aware of the changes that are occurring and challenges that emerge from it. Masters are preparing students for the present market but should

be more focused on soft skills, namely critical thinking, creativity, problem-solving, self-learning, ethics, communication, and leadership.

The challenges are immense and the qualifications to meet these challenges are diverse and complex. The transformation is already under-way and the Higher Education System is an active agent of this process of change and must adapt its curricula to enhance the development of the digital skills of its students.

For further research it would be interesting to do some correlations between the studied competencies and sustainable entrepreneurship. Perhaps the skills of the 21st century are very much related to the skills associated with sustainable entrepreneurship and Higher Education Institutions must be an agent for change. It also be interesting to understand how happy students are in their work places, as it may influence their perceptions about the value that companies place on the fact that they are taking a Master's degree.

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COMPARISON OF CLUSTERING ALGORITHMS FOR OPTIMAL RESTAURANT LOCATION SELECTION USING LOCATION-BASED SOCIAL NETWORKS DATA

ABSTRACT

Machine learning algorithms are increasingly used in various fields. Unlike supervised algorithms that require the engagement and knowledge of experts in a particular area, unsupervised algorithms do not need it and are therefore more comfortable to use. Clustering algorithms belong to unsupervised algorithms and are used to group data according to a given similarity criterion with achieving significant similarity between data within the same group and minor similarities between data belonging to different groups.

In this paper, five clustering algorithms in restaurant location optimization in Zagreb are analyzed. The clustering algorithms' output result lists municipalities in Zagreb city divided into groups with similar properties. Based on these data, the investor can quickly conclude what individual municipalities are similar and based on that, a more objective assessment of the location of a restaurant or catering facility can be made before the investment.

The data based on which the algorithms divided parts of Zagreb into groups were obtained from a social network that can store user locations. One of the essential functions of the used social network is sharing information about restaurants, cafes, and other catering facilities. The common name of these social networks is a location-based social network. The paper compares the Gaussian Mixture Model algorithm, k-means algorithm, Hierarchies algorithm, Agglomerative Clustering algorithm, and Spectral Clustering algorithm. The selected five algorithms have the property that one of their input variables is the number of clusters.

Keywords: *Clustering, big data, restaurant, Foursquare, location-based social network.*

1. Introduction

The location of restaurants and catering facilities in populated areas is an essential factor that must be taken into account before entering the market and starting a business. In the last century, managers have often made location decisions based on experience and personal judgment. More recently, methods based on quantitative data have been available that can help managers make that decision. One of these methods is clustering, which divides objects into groups whose

members are similar. Clustering and similar methods belong to machine learning are generally used by managers who manage many restaurants and catering facilities and enter new markets unknown to them.

For clustering to be used when choosing a new restaurant location, it is necessary to collect data on parts of a specific populated area. Based on them, using clustering, divide these parts into similar clusters. By analyzing the obtained clusters, we can objectively assess the general purpose of the inhabited area. Fortunately, clustering data is available on Location-based social networks.

In this paper, five different clustering algorithms are compared, using location-based social network data to help managers choose the optimal location for a restaurant or catering facility. The second section provides a brief overview of the papers that analyze the impact of the location on the business. The third section analyses the clustering algorithms used, while the fourth section describes the data, methodology and results used. The discussion and conclusion are in the last two sections.

2. The impact of location on the business

Choosing a location is a crucial decision that a company must make when starting a business, affecting its success. Location, whether good or bad, always involves the optimal operation of a company. The choice of location affects both revenue and operating costs. More attractive locations also mean higher rental or purchase costs. In comparison, less attractive locations, despite lower rental or purchase costs, can negatively affect attracting customers or attracting promising employees.

Depending on the industry in which it exists and the specifics of the activity in which it is engaged, the company should consider different criteria when choosing a location. For service businesses such as restaurants and cafes, accessibility and proximity to customers are vital. The location of customers and suppliers is also essential for the restaurant's business.

There is a lot of scientific and professional research on the importance and impact of location on an organization's business and development. Regardless of the type of organization and its business, location plays a significant role in their business. Numerous authors have investigated the impact of location on hotel profitability and survival (Gémar, Moniche & Morales, 2016) (Vivel-Bua, Lado-Sestayo, & Otero-Gonzalez, 2016), and the impact of various factors on location decision making (Yang, Luo & Law, 2014) (Adam & Mensah, 2014) (Canina, Enz & Harrison, 2005) (Lado-Sestayo, Otero-Gonzalez, Vivel-Bua & Martorell-Cunill, 2016). The location also impacts other tourist offers, accommodation capacities, and tourist behaviour (Shoval, McKercher, Ng & Birenboim, 2011). Bryan Tan believes that demand, brand loyalty, quality are essential for a successful restaurant business. He considers the location of the restaurant to be the most important determinant. Using location-based social networks data, he analyzed three parameters of power consumption, percentage of target customers, and the number of competitors based on the analysis of the optimal location of an Asian restaurant in Toronto. He concluded that location selection is a crucial factor in a restaurant's success and that such a location analysis can affect a restaurant's success (Tan, 2021). Kalnins and Chung discovered a general trend towards Clustering and Shoval and Cohen-Hattab, confirmed that there is a tendency of accommodation to concentrate in the city centre (Kalnins & Chung, 2004) (Shoval & Cohen-Hattab, 2001).

3. Clustering algorithms

Clustering is a powerful data analysis method whose importance is growing with the increasing processing power of computers. Anderberg classifies clustering algorithms into two categories, hierarchical and non-hierarchical. An example of a hierarchical algorithm is agglomerative clustering, while the most used non-hierarchical algorithm is k-means (Anderberg, 1973). Fasulo used other names when dividing clustering methods, so he divided them into partitioning and hierarchical clustering. In partitioning clustering, each object belongs to one group, while in hierarchical clustering, each group with more than one member is divided into smaller groups (Fasulo, 1999). Jain et al. propose a different taxonomy of clustering algorithms, dividing them into heuristic-based, density-based, and model-based (Jain, Topchy, Law & Buhmann, 2004). Rokach has further modified and expanded this division and proposes a division into partitioning, density-based, soft-computing, grid-based, model-based and hierarchical methods (Rokach, 2009). Xu and Tian present a division into two categories, classical and modern clustering algorithms. Classical algorithms are further divided into nine categories: algorithms based on partition, hierarchy, fuzzy theory, distribution, density, graph theory, grid, fractal theory, and model. Modern algorithms are divided into ten categories, algorithms based on a kernel, ensemble, swarm intelligence, quantum theory, spectral graph theory, affinity propagation, density and distance, and algorithms for spatial data, for the data stream and for large-scale data (Xu & Tian, 2015). Five algorithms are used in this paper: agglomerative, BIRCH, a mixture of Gaussians, K-means and spectral clustering. Below is a brief description of each.

3.1. Agglomerative Clustering

The agglomerative clustering method has been known since the 1970s (Cormack, 1971). The specificity of agglomerative clustering ranges from a finite number of objects n to be clustered. In each subsequent step, the two nearest clusters merge, and the number of sets of objects decreases to eventually reach one set (Day & Edelsbrunner, 1984). overtime, the authors have proposed various Agglomerative clustering optimizations, so Kurita offers an algorithm that uses a heap to store the distances of all pairs of clusters, while Ackerman et al. conclude that the method has not been studied theoretically enough and give a detailed overview and explanation (Kurita, 1991) (Ackermann, Blömer, Kuntze & Sohler, 2014).

3.2. BIRCH

The full name of this clustering method is Balanced Iterative Reducing and Clustering using Hierarchies. It is intended for large multidimensional data sets and offers the possibility of parallel processing. Zhang et al. in their paper prove that BIRCH is significantly better than the K-means algorithm in several characteristics (quality, stability, and speed) (Zhang et al., 1997)(Zhang et al., 1996). Lorbeer et al. propose a variation of an A-BIRCH algorithm and use it to perform an automatic threshold estimation for the existing algorithm (Lorbeer et al., 2018)

3.3. Mixture of Gaussians

A Gaussian mixture model is based on assumptions that all data points can be generated from unknown number of Gaussian distributions with unknown parameters. It is defined by Pearson one hundred and twenty years ago (Pearson, 1901). Dasgupta encouraged more intensive use of the model with his paper two decades ago (Dasgupta, 1999).

3.4. K-Means

K-means is one of the better-known clustering algorithms. It is proposed by Steinhous (Steinhaus, 1956). Before starting clustering, it is necessary to define the number of clusters. The algorithm tries to separate the samples into clusters to minimize the sum of the squares of the distance of the samples within the cluster. One of the fundamental disadvantages is the dependence of performance on initial conditions (Scikit-learn developers, 2021).

A large number of authors has analyzed the k-means algorithm, and many optimizations have been proposed. Alsabt et al. proposed an efficient k-means clustering algorithm that significantly reduced computation time (Alsabti, Ranka & Singh, 1997). Na et al. proposed an acceleration method based on storing previous iterations' properties, thus avoiding calculating each object's distance (Na, Xumin & Yong, 2010).

3.5. Spectral Clustering

Spectral clustering creates an affinity matrix for paired samples, normalizes them, and calculates the normalized matrix's eigenvectors. The method is effective for a small number of clusters (De Sa, 2005). Very often, it has better results than the k-means method, and it is easy to implement (Von Luxburg, 2007).

4. Zagreb case study

4.1. Data and methodology

Zagreb is the capital of the Republic of Croatia, with about 800,000 inhabitants. From 2011 to 2018, the number of tourists doubled, i.e. from 600,000 per year to 1400,000 tourists per year (City Office for Strategic Planning and City Development, 2021). The peak in the number of tourists was in 2019. Due to the pandemic caused by the COVID-19 virus in 2020, a significant decline was observed (City Office for Strategic Planning and City Development, 2021). This situation will force the closure of some restaurants and catering facilities, which may be an opportunity to open new restaurants after the pandemic stops.

As already mentioned, one of the most critical factors affecting a restaurant's business is its location. For the potential investor to assess the characteristics of individual parts of Zagreb as objectively as possible, the already existing division by municipalities will be used. Table 1 lists all municipalities in the city of Zagreb. The table also shows the area, population in 2001 and 2011, and population density per square kilometre. In figure 1, a satellite image of Zagreb city with visible boundaries of individual municipalities can be seen.

Table 1: Zagreb municipalities list

	Municipalities	Area (km²)	Population (2011)	Population (2001)	Population density (2001)
1.	Donji Grad	3.01	37,123	45,108	14,956.2
2.	Gornji Grad – Medveščak	10.12	31,279	36,384	3,593.5
3.	Trnje	7.37	42,126	45,267	6,146.2
4.	Maksimir	14.35	49,448	49,750	3,467.1
5.	Peščenica – Žitnjak	35.30	56,446	58,283	1,651.3
6.	Novi Zagreb – istok	16.54	59,227	65,301	3,947.1
7.	Novi Zagreb – zapad	62.59	58,025	48,981	782.5
8.	Trešnjevka – sjever	5.83	55,342	55,358	9,498.6
9.	Trešnjevka – jug	9.84	66,595	67,162	6,828.1
10.	Črnomerec	24.33	39,040	38,762	1,593.4
11.	Gornja Dubrava	40.28	62,221	61,388	1,524.1
12.	Donja Dubrava	10.82	36,461	35,944	3,321.1
13.	Stenjevec	12.18	51,849	41,257	3,387.3
14.	Podsused – Vrapče	36.05	45,771	42,360	1,175.1
15.	Podsljeme	60.11	19,249	17,744	295.2
16.	Sesvete	165.26	70,633	59,212	358.3
17.	Brezovica	127.45	12,040	10,884	85.4
	TOTAL	641.43	792,875	779,145	1,214.9

Source: Croatian Bureau of Statistics

Figure 1: Zagreb with municipalities borders
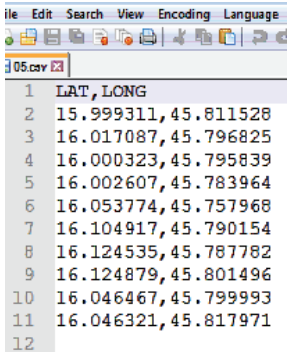
Source: by the authors

To use clustering algorithms and divide individual municipalities of the city of Zagreb into clusters where cluster members have similar characteristics, it is necessary to have data on individual municipalities. Some towns have many publicly available data on their official websites, but Zagreb is not among them. An excellent example of a city with a range of information available on its official website is Hong Kong (The Government of the Hong Kong Special Administrative Region, 2021). For this reason, the paper uses data available on a Location-based social network called Foursquare.

Foursquare Labs Inc. is an American company founded in 2009 in New York. The app they offered in the smartphone market was called Foursquare, and it allowed real-time location sharing and location tagging. The application was free and was among the first to offer this concept, and very quickly gathered many users who used it to mark, rate and comment on restaurants. More than ten years have passed since the company was founded. They currently offer several different products based on the concept of a location social network, but for different categories of users. Applications designed for mobile platforms are the Foursquare City Guide, Marsbot for Airpods, Panel App and Foursquare Swarm (Foursquare Labs Inc, 2021).

One of the services offered by Foursquare Labs Inc is the Foursquare API. It is an interface to their database where it is enough to enter latitude and longitude, and radius to get all the objects they have stored in their database. There are restaurants, coffee bars, shops, monuments, zoos, pet stores, grocery stores, trails and more. Access to the database is free for a small number of queries, while it is charged if the number of queries to their database is above the specified limit. Unfortunately, their database does not have information on individual facilities' location at the municipal level within cities. To obtain good quality results, each municipality is described by a polygon. Using the algorithm for finding the centre of the polygon, each municipality's central point's latitude and longitude are defined. After that, data on facilities were obtained for each municipality in the form of a table. Figure 2 shows an example of a file describing a polygon for a particular municipality.

Figure 2: Municipality polygon example

Source: authors

Figures 3 show the central points of individual municipalities with the numbers corresponding to the first column in Table 1.

Figure 3: Central points of all municipalities
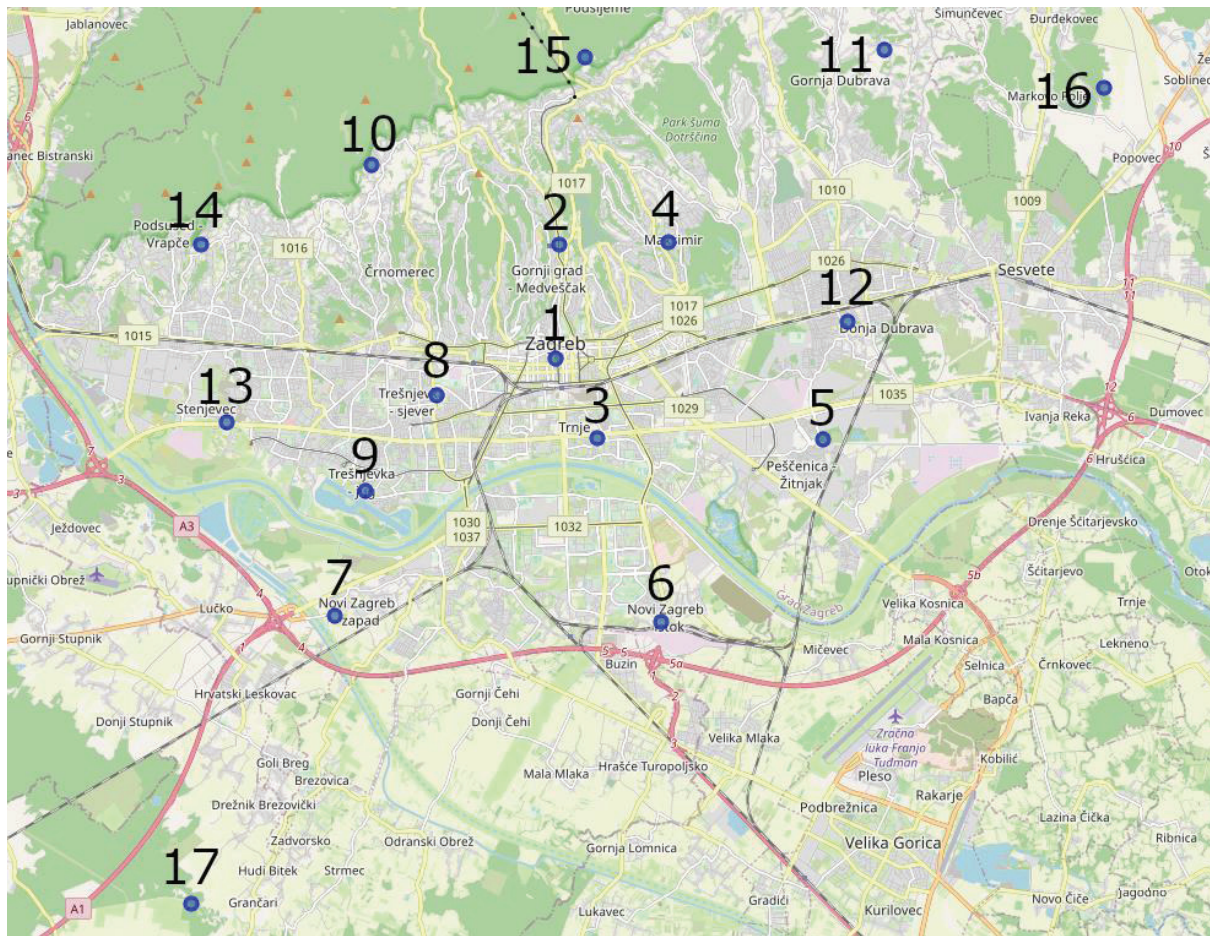
Source: authors

Xu et al. list four basic steps in applying a clustering algorithm: feature selection or extraction, clustering algorithm design or selection, cluster validation, and interpretation results (Xu & Wunsch, 2005). This is the completion of the first step, feature selection or extraction. Before using the above five algorithms, it is necessary to define the number of clusters. One of the most famous methods is the so-called elbow method. The technique consists of displaying the explained variation or sum of squared distances depending on the number of clusters. The elbow of the curve is selected as the cluster number.

Figure 4: Elbow method for optimal cluster number
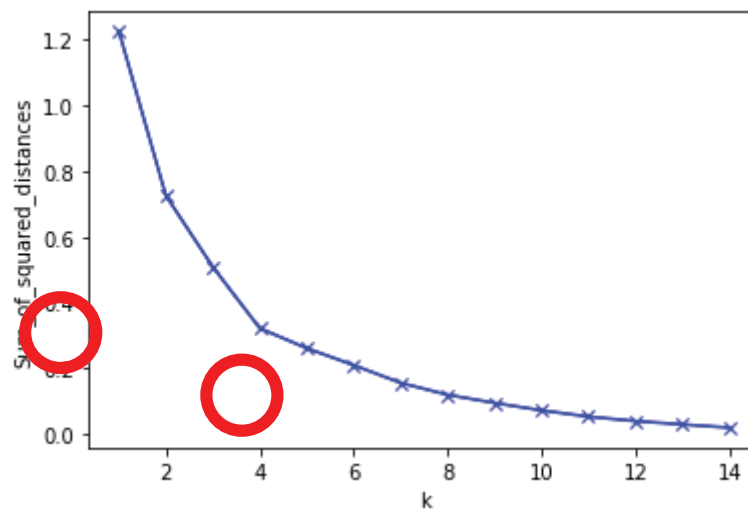
Source: authors

Figure 4 shows a graph obtained from the data, indicating that the optimal number of clusters is 3. After testing with only three clusters, the algorithms would put one municipality in each of the two clusters, while in the third cluster, there were 15 municipalities left. For this reason, the number of clusters has been increased to 7, and in figure four are rounded the places where the elbows are located. The elbow above number 4 is much more noticeable than the one above number 8.

4.2. Results

Figure 5: Municipalities divided into seven clusters (Agglomerative Clustering)
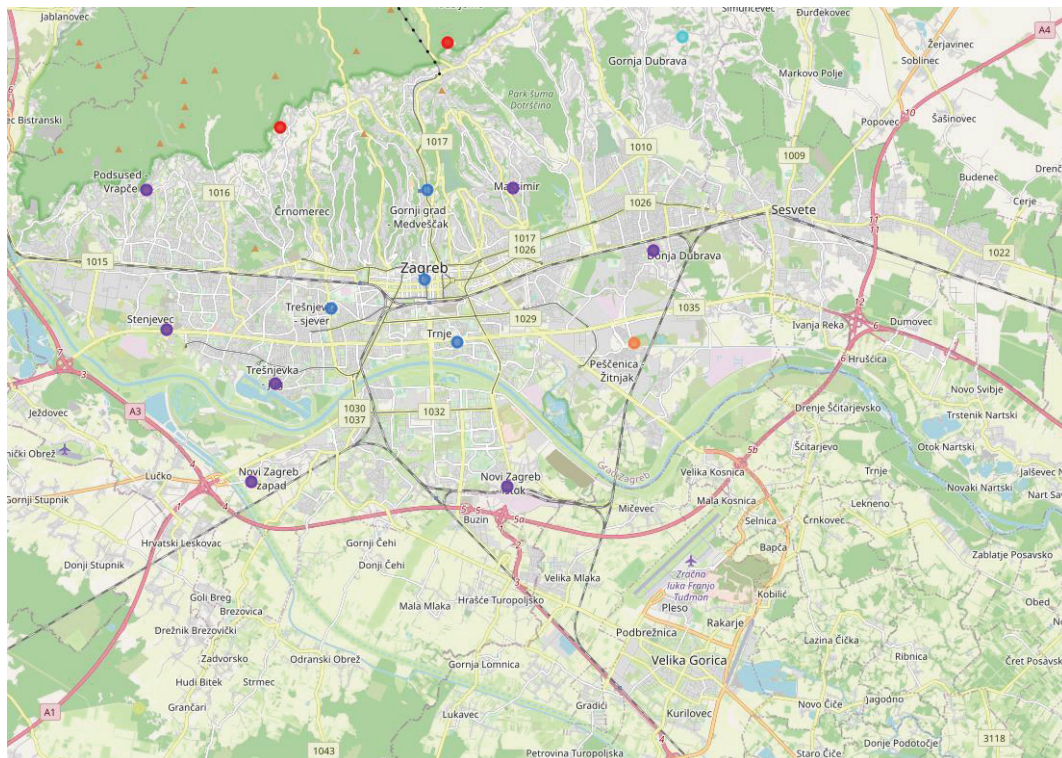
Source: authors

Figure 6: Municipalities divided into seven clusters (BIRCH Clustering)
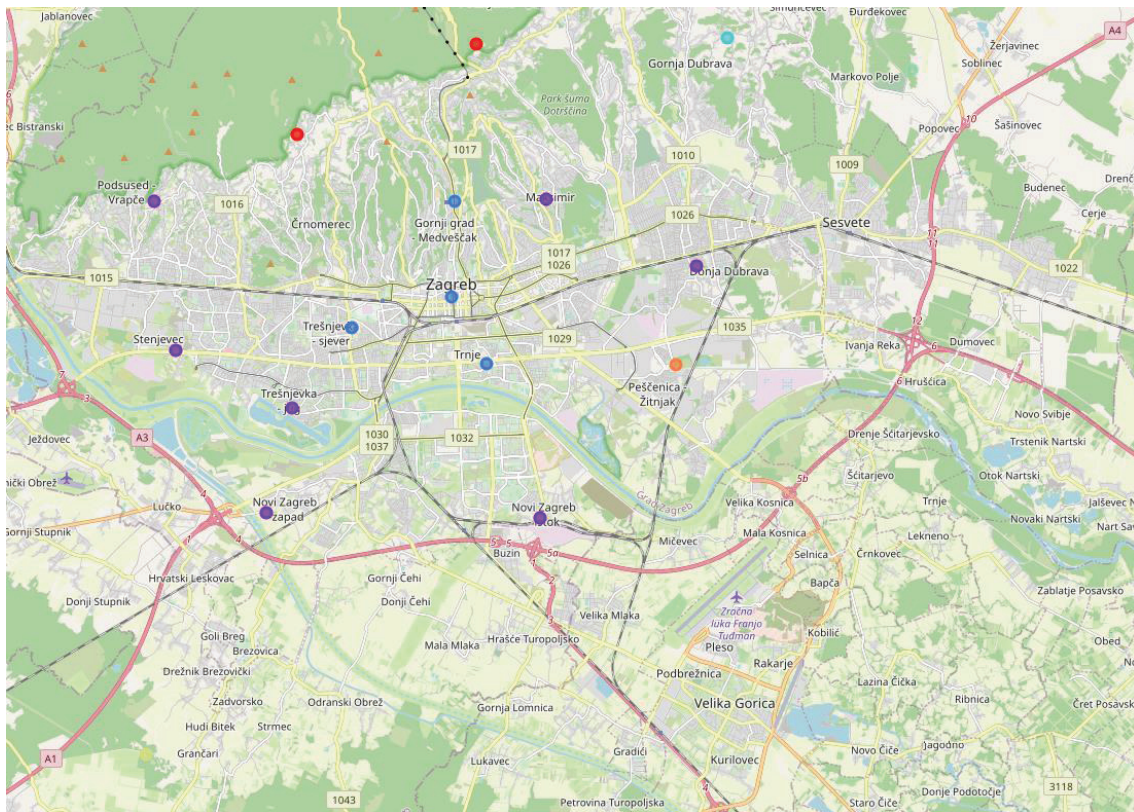
Source: authors

Figure 7: Municipalities divided into seven clusters (Mixture of Gaussians)
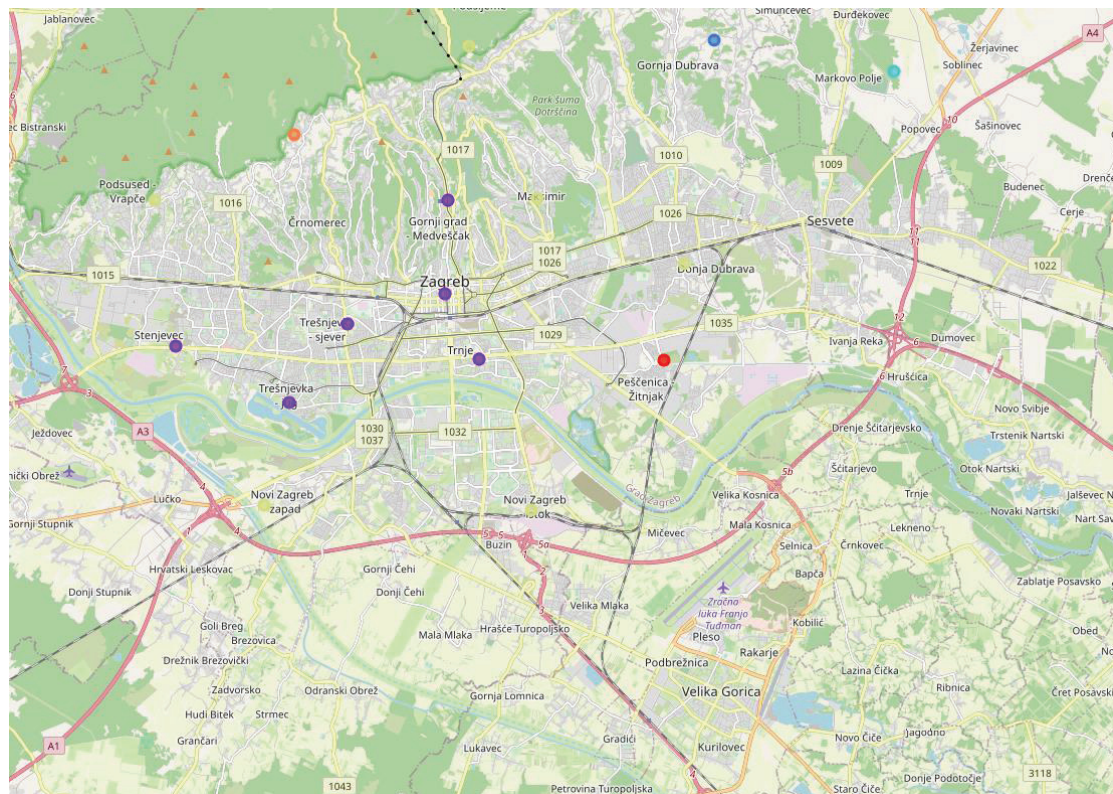
Source: authors

Figure 8: Municipalities divided into seven clusters (K-means)
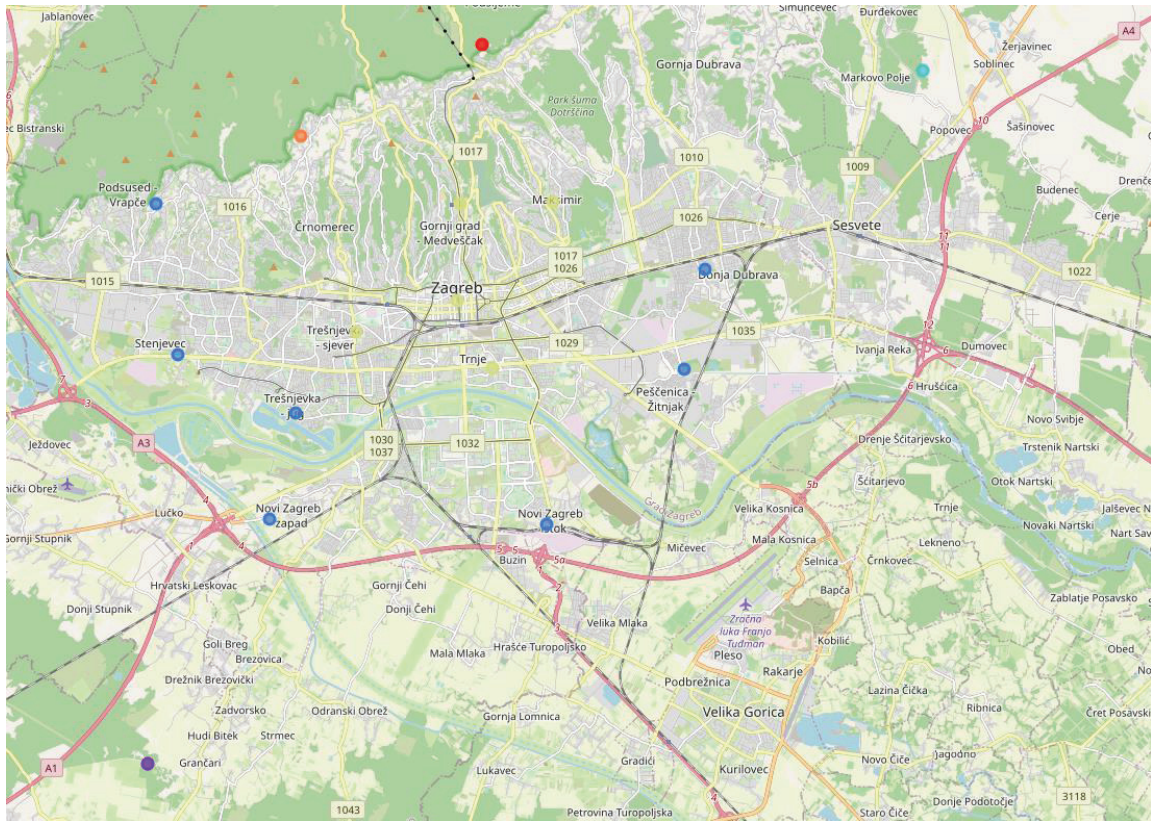
Source: authors

Figure 9: Municipalities divided into seven clusters (Spectral Clustering)
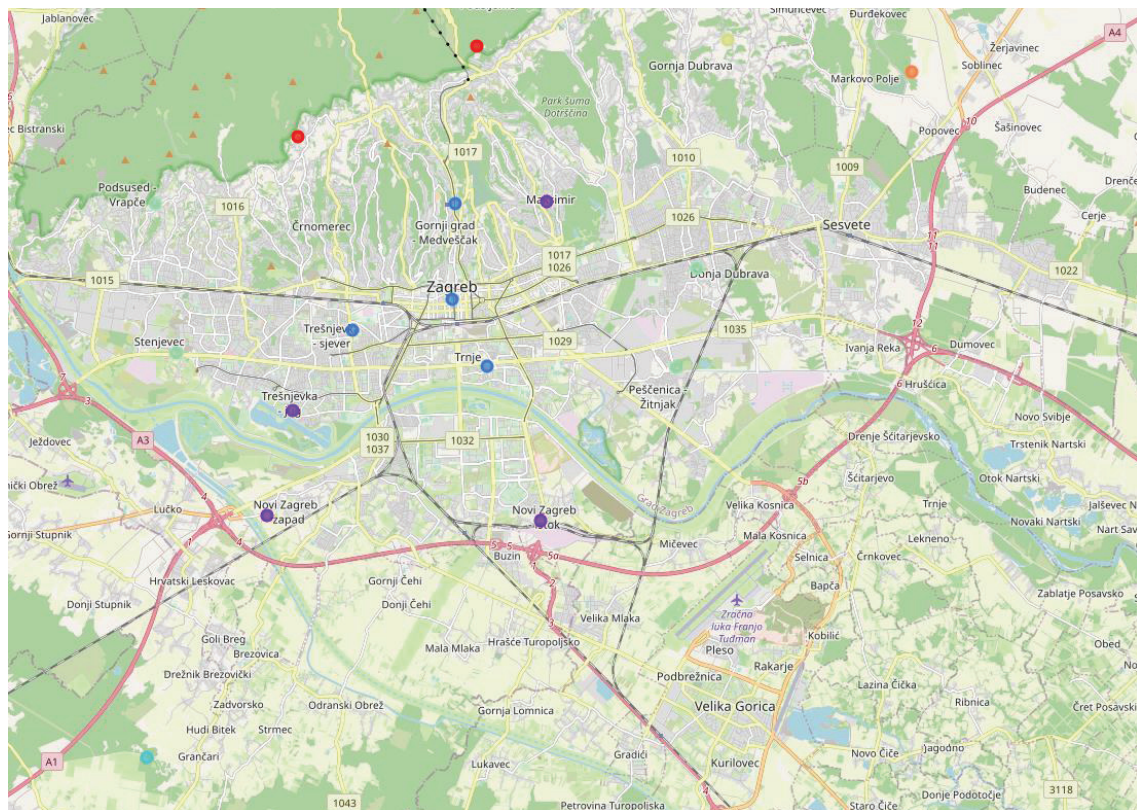
Source: authors

Figure 10: Comparison of the number of municipalities within a cluster
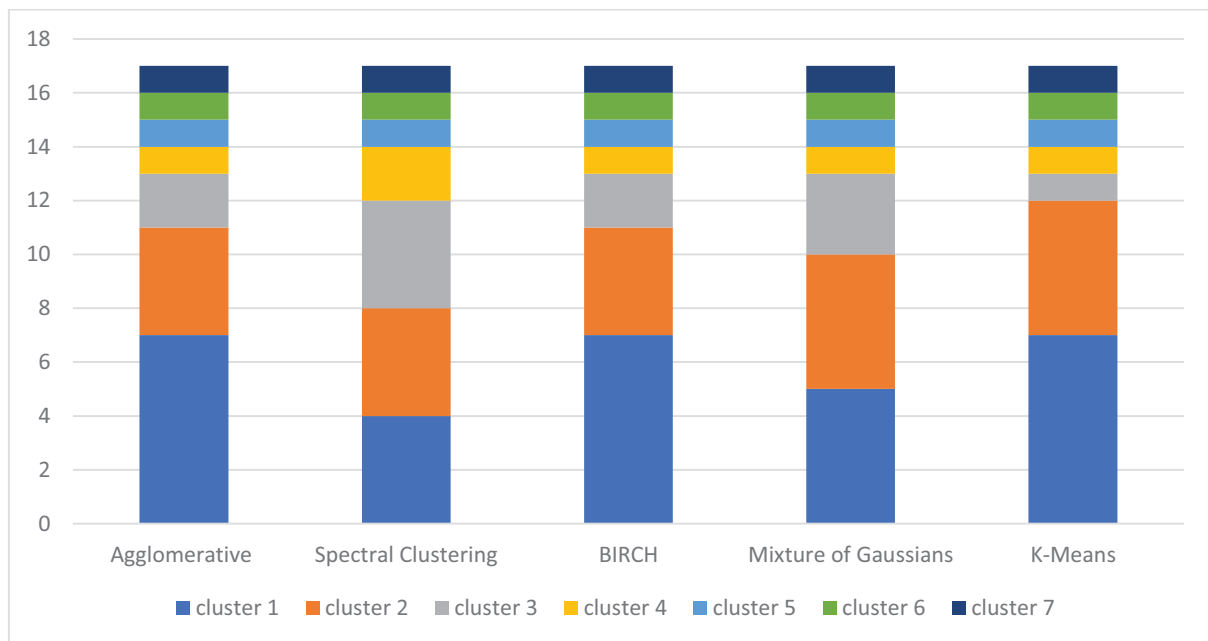
5. Discussion

Several authors have used Foursquare API and clustering algorithms in their research. Novovic et al. used the foursquare API for user's mobility flows aggregation and analyzed dynamics over two years in ten cities (Novović, Grujić, Brdar, Govedarica, & Crnojević, 2020). Sun used the same data source in analyzing the locality of spatial interactions in New York City, and Noulas et al. combine data obtained from the Foursquare API with data from mobile operators to infer user activity in urban environments (Sun, 2016) (Noulas, Mascolo & Frias-Martinez, 2013). It is evident that the foursquare service data are of sufficient quality to draw conclusions based on them. In the case of applying different clustering algorithms based on that data, it can be seen that the results are similar. The similarity is best seen in Figure 10, which shows the number of municipalities per cluster. In figures 5, 6, 7, 8 and 9 can be seen that all algorithms put four municipalities in the centre of Zagreb's city (Donji grad, Gornji grad, Trnje and Trešnjevka sjever) in one cluster. Also, two municipalities south of the river Sav (Novi Zagreb istok and Novi Zagreb zapad) belong to the same cluster in all five algorithms.

Furthermore, Figure 5 and Figure 6 are identical, which may indicate an error. This is not an error, but Agglomerative and BIRCH clustering algorithms give the same complete result. This is also visible in figure 10.

The proposed model can be compared with other models, but it is challenging to evaluate the results obtained by each algorithm. One possibility is to assess the results obtained by real estate professionals, where the number of professionals should be large enough to avoid subjectivity.

6. Conclusion

The paper points out that clustering algorithms with data available on location-based social networks can be used to analyze the properties of individual municipalities within the city of Zagreb. Based on the available data, the potential investor has a more objective picture of the assets of individual municipalities, which is very important if they do not know the city well enough. Also, the clustering results can be attractive to different professions, and finally, the

results themselves can be used by the city administration itself to analyze the city's development. Such analyzes should be done continuously because the addition of a time-domain could follow trends in individual municipalities.

The presented approach can be improved in several ways. First, data from other location-based social networks should be obtained. One of the exciting characteristics that would affect the division is undoubtedly the monthly income per family member within a municipality. Besides, the algorithm could be improved in a way that more precisely locations objects within individual municipalities.

One of the shortcomings of the paper is certainly the lack of evaluation of the obtained results. This could be realized by having the quality of the results assessed by experienced real estate agents and this is one of the possible future paper upgrades.

Finally, the Zagreb City Administration should be aware that the public availability of data on individual municipalities can increase investors' interest for the simple reason that they can more objectively assess which location is more attractive for them to invest in.

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THE EFFECT OF STUDENTS' SOCIO-ECONOMIC STATUS ON EATING AND HEALTHY HABITS

ABSTRACT

In addition to gaining insights into students' physical activity and healthy habits, the aim of this research was to assess the effect of students' socio-economic status on their eating and healthy habits. Statistical analysis was carried out on the survey data gained from 110 students attending the Faculty of Education whose mean age is 20.1. The results of the chi-squared test and Fisher-Freeman-Halton exact test showed that, at the level of significance of 5%, there is a statistically significant correlation between some socio-economic variables and variables describing participants' physical activities and eating habits. The students whose socio-economic status is better participated more frequently in physical activities in the observed period. This could be explained by their habits, which are related to their financial status. The students who exercise regularly expressed greater satisfaction with their body image, which positively affects their self-esteem. Satisfied and self-confident individual deals with tasks better, which results in success and work productivity that benefits the entire community.

Keywords: *socio-economic status, eating habits, healthy habits, physical activity, students.*

1. Introduction

The World Health Organization (WHO) defines physical activity as an activity that refers to all movement, i.e., all movement in everyday life, including physical activity at work or in school, recreation, and sports activity (WHO, 2018). The World Health Organization's recommendations for people over the age of 18 are 150 minutes of moderate-intensity aerobic activity or 75 minutes of high-intensity activity per week. According to Mišigoj-Duraković et al. (2018) physical exercise is a regular and meaningful exercise based on a structured plan and program that improves the level of physical abilities and its components. Physical activity helps schoolchildren and young people in socialization as well as in building better interpersonal relationships. It can also prevent socially undesirable behavior, and drug and alcohol abuse (Remeš, 2015). Research has demonstrated specific benefits such as improved physical and physiological health parameters and positive health outcomes in areas of mental health and

wellbeing (Chekroud et al., 2018; Mathieu et al., 2012). Quality lifestyle encompasses a lifestyle of a healthy diet and physical activity (Andrijašević, 2008).

Recreation and tourism are economic areas in the context of income and job creation. There is a great deal of positive sociological, economic and cultural effects of sports tourism: it is useful for tourists, providers of (sports) services , and the wider community, with significant economic effects (Weed, 2008; according to Jozić, 2016). Economic well-being is the main argument in discussing the need to provide sports and recreational programs (Jurakić, 2009). The cost of health care increases every year, which may be related to a sedentary lifestyle (Healyet et al., 2008 cited in Remeš, 2015). Research has shown that higher levels of physical activity during leisure time can reduce health care costs in society (Pratt et al., 2001 cited in Jurakić, 2009). Physical activity improves mental functioning leading to a feeling of good mood and well-being, reduced stress, and increased self-esteem (Ekeland, Heian, Hagen & Coren, 2005 cited in Jurakić, 2015). Physically active people are generally more satisfied with their lives, i.e., they report a higher quality of life (Pucci, Rech, Fermino & Reis, 2012 cited in Jurakić, 2015). Social capital has been shown to have a positive effect on health well-being in young people and to reduce obesity (Richmond, Subramanian, 2008). Lindström et al. (2001) researched whether socio-economic differences in psychosocial resources could explain differences in physical activity in leisure time. The authors concluded that differences in physical activity in leisure time can vary with the social capital of socio-economic groups.

During adolescence, life habits are formed, and among those, eating habits play a significant part (Lošić, 2014). A new living environment often results in changing lifestyle and health habits. The level of physical activity as well as the intake of fruits and vegetables decreases, while at the same time the consumption of fast food and alcohol increases (Koprivnjak, 2008). The student population tends to consume foods of high energy value and reduced nutritional value and skip meals during the day, most often breakfast (Koprivnjak, 2008; Yahia et al., 2008; Banjari et al., 2011). Poor diet and poor health habits (lack of physical activity or smoking) result in an increasing number of overweight young people (Kolodinsky et al., 2007). Another negative effect on students' nutrition when they leave their parents' home is the financial state that reduces the choice of food they can afford on a daily or weekly basis (Papadaki et al., 2007). For many, going to college entails managing study, work, social life, and independent life without parents (Breene, 2013). The obesity risk factors for students include financial problems, skipping meals, lack of dietary diversity, and frequent consumption of fast food (Driskell et al., 2005). In addition to gaining insights into students' physical activity and healthy habits, the aim of this research is to assess the effect of students' socio-economic status on their eating and healthy habits.

Considering the set aim of the research, we start from the following research questions:

1. What is the connection between the students' socio-economic status and their health and eating habits?
2. What is the students' self-perception like and the satisfaction with their own appearance?
3. What is the connection between regular physical exercise, satisfaction with their own appearance and self-esteem?

2. Methodology

The research included students from two study programs held at the Faculty of Education (Undergraduate university study program of Early and pre-school education and Integrated undergraduate and graduate university Class teacher study) and was done during the course Swimming, which is held at both study programs. The research was conducted in the 2018/2019 academic year. A total of 110 students from the Faculty of Education in Osijek participated in

this research, with 68.18% attending the Class teacher study program. Given that most students at the Faculty of Education are female, the participants in this research were mostly female (90.91%).

The research was conducted online, and it included three sets of questions. The first one consisted of 16 questions and was used to gather the demographic information about participants and the information about their living and studying expenses. There were 13 questions in this set formed as multiple-choice questions in which participants had to select their answer from a set of pre-defined answers, and 3 short-answer-type questions (age, number of immediate family members, number of permanently employed immediate family members). The second set of questions (27 questions) was taken from the *Questionnaire of health behaviour* (Ćurković et al., 2007) and the third set of questions (21 questions) was the *Questionnaire about kinesiological activities and risky behaviours of students* (Ćurković, 2010).

Before filling out questionnaires, students were familiarized with the purpose of the research and they voluntarily participated in the research knowing that they could withdraw from the research at any time. For data analysis, Statistica 13 and SPSS were used. The chi-squared test of correlation between variables and Fisher-Freeman-Halton exact test were carried out to establish if there is a correlation between socio-economic variables used in this research and variables dealing with physical activity and eating habits.

3. Results

The results show that majority of participants study outside their place of residence (75.45%) and the highest number of participants (44.54%) declared that they live in a non-subsidized private accommodation. Regarding their socio-economic profile, the highest number of them (40.00%) revealed that they have four immediate family members, half of the participants (50.00%) claimed that two members of their immediate family are permanently employed, more than a half of the participants (52.73%) estimated that their monthly expenses are HRK 2,000 – 4,000. On answering the question on who covers their living and study expenses, an almost equal number of participants stated that it is mostly (40.00%) or exclusively their parents (39.09%). The highest number of participants (63.63%) does not work while studying and 47.27% of participants have never gotten an academic scholarship. However, the majority of them (77.27%) estimated that their current financial status is good (see Figure 1) and slightly more than half of the respondents (50.91%) stated that they mostly live within their financial abilities (see Figure 2).

Figure 1: Participants' current financial status
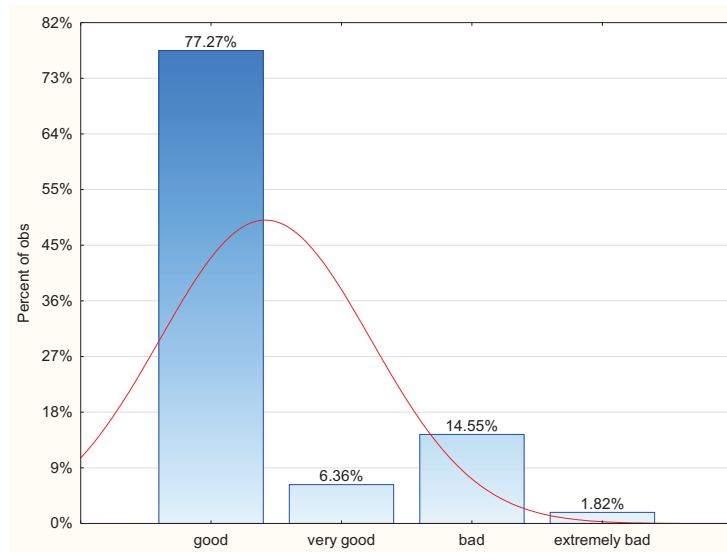
Source: Authors

Figure 2: Living within financial abilities
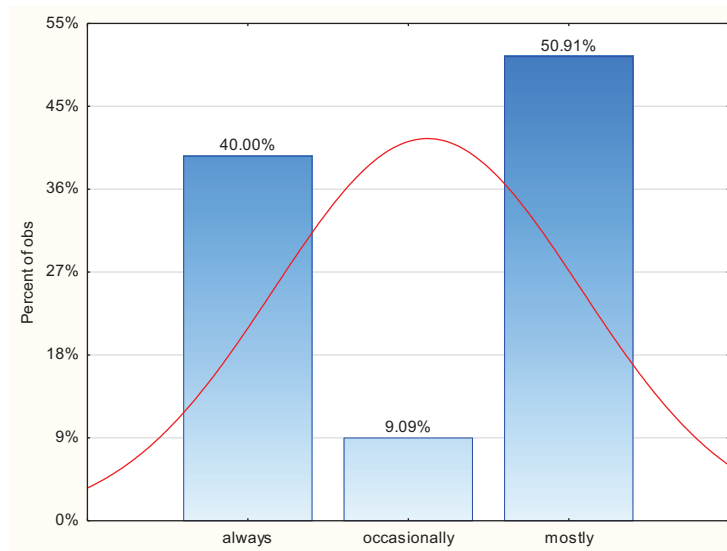
Source: Authors

When the relationship between socio-economic variables was examined, a statistically significant difference at the level of significance of 0.05 was found (two-sided Fisher-Freeman-Halton test) between who covers participants' living and study expenses and their current financial status (p=.041). Additionally, the Fisher-Freeman-Halton test indicated a statistically significant correlation between participants' monthly expenses and accommodation during studying (p=.025) at a 5% level of significance.

The chi-squared test was performed to analyze if there is a correlation between the level of participants' current *financial status* and the estimation of how often they eat fast food in seven days. It showed that, at the level of significance of 5%, there is a statistically significant moderate correlation (Cramers' V=0.31) between these variables ($\chi^2(12)=30.00$, p=0.002). However, since more than 20% of expected frequencies were less than 5, these test results need to be taken with caution, so the Fisher-Freeman-Halton test was performed. The Fisher-

Freeman-Halton test verified that there is a statistically significant difference (at the level of significance of 5%) between participants' financial status and eating fast food in seven days (p=.037, two-sided test). Figure 3 shows the difference between financial status and how often participants eat fast food per week.

Figure 3: Participants financial status in relation to how often they eat fast food per week
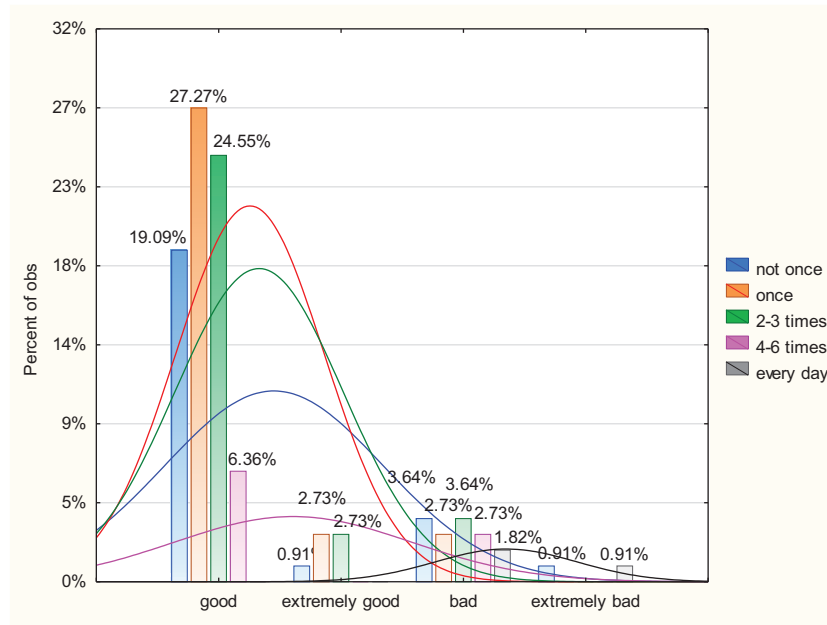
Source: Authors

Moreover, this Fisher-Freeman-Halton test also showed that there is a statistically significant correlation between participants' *financial status* and: satisfaction with life (p=.004, two-sided test), their health in general (p=.003, two-sided test), self-satisfaction (p=.012, two-sided test), cigarette smoking (p=.047, two-sided test), and physical condition (p=.044, two-sided test).

Furthermore, a statistically significant correlation at 0.05 level of significance was noticed between the variable *working during studying* and: self-satisfaction (p=.015, two-sided Fisher-Freeman-Halton test), and physical condition (p=.045, two-sided Fisher-Freeman-Halton test). The difference between working while studying and participants' physical condition is shown in Figure 4.

Figure 4: Working while studying concerning participants' physical condition
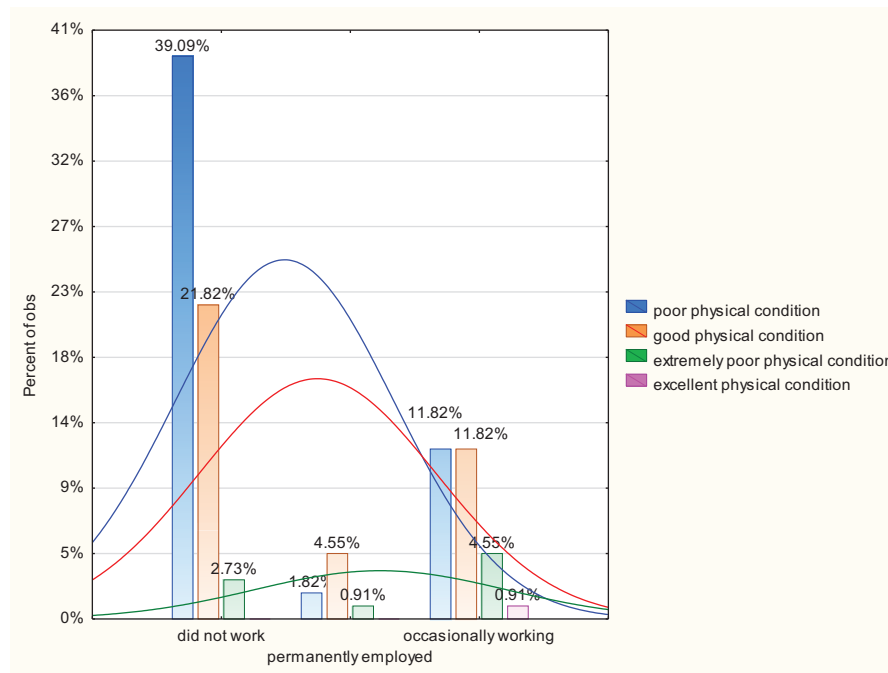
Source: Authors

When the correlation of the variable *living in accordance with financial abilitie*s and other variables was examined, the Fisher-Freeman-Halton test revealed that there is a statistically significant difference (at 0.05 level of significance) between this variable and health in general (p=.018, two-sided test), self-satisfaction (p=.020, two-sided test) and fruit and vegetables consumption (p=.026, two-sided test).

4. Discussion

In the analysis, it was determined that the largest number of students study away from home, and very often in a non-subsidized private accommodation. The accommodation capacities in student dormitories are insufficient for all students, so they opt for private accommodation. They estimate that their monthly expenses are HRK 2,000 – 4,000, which depends on the quality of the accommodation but also the lifestyle habits. Most students are financially supported by their parents, but a smaller percentage of students also work while studying. Students are mostly satisfied with their financial situation. When the relationship between socio-economic variables was examined, a statistically significant difference at the level of significance of 0.05 was found (two-sided Fisher-Freeman-Halton test) between who covers students' living and study expenses and their current financial status (p=.041). The students' satisfactory financial status could be explained by the fact that most of them are financially supported by parents, which is usually a secure and permanent source of income, independent of the student's engagement and possible earning opportunities. For many, going to college means facing how to reconcile study, work, social life, and independent living without their parents (Breene, 2013), while a steady income from parents provides financial stability and other benefits. Additionally, the Fisher-Freeman-Halton test indicated a statistically significant correlation between students' monthly expenses and accommodation during studying (p=.025) at a 5% level of significance. The majority of students live in a private non-subsidized accommodation, which is a sign of financially satisfactory status, i.e., stability provided by the source of financing – parents.

The obtained results described the correlation between financial status and the frequency of fast-food consumption. There are 66.9% of students who consume fast food once or less during a week. Fast food is usually available to everyone and does not present a large financial burden. The relatively satisfactory financial situation of students enables better eating habits. Time spent at college largely affects an individual's life, given that it often presupposes an increased need for responsible behavior, which includes food choices and healthy living habits (Colić Barić et al., 2003), which may be another reason for the small share of fast food in the diet of the observed group. During adolescence, lifestyle habits are formed, and eating habits play a significant part (Lošić, 2014). Given the specifics of the faculty included in this study (the Faculty of Education), where several courses provide information on the importance of proper nutrition and avoiding fast food, life and eating habits are going in a positive direction.

Moreover, the Fisher-Freeman-Halton test also showed that there is a statistically significant correlation between participants' financial capabilities and life satisfaction. There are 85.3% of students who are completely or partially satisfied with life, which shows a very high percentage of satisfaction. The morbogenic risk factors for students include financial problems, skipping meals, lack of dietary diversity, and frequent fast-food consumption (Driskell et al., 2005). The absence of these, potentially morbogenic factors, contributes to life satisfaction, but also positively affects students' health in general. Financial stability can also result in the consumption of various vices, including smoking. The worldwide trend is to reduce or completely stop the consumption of tobacco products, and one of the models is the constant increase in the price of cigarettes. Relatively satisfactory financial status, unfortunately, makes tobacco products available to students. Quality lifestyle is related to a lifestyle that includes a healthy diet and physical activity (Andrijašević, 2008). Students who are aware of the importance of physical activity and good physical condition and who are satisfied with their lives, independently choose activities that will lead them to the desired goal. The current trend of physical exercise includes organized and guided activities (aerobics, fitness centers, individual training, etc.) that require a stable financial status, which explains the correlation between physical fitness and the financial abilities of participants.

Students who work or have worked during their studies have also shown a high degree of self-satisfaction, probably because they feel, at least in part, independent because their work has contributed to this correlation. Working while studying often refers to jobs related to students' future occupation and is one of the possible factors that contribute to a high degree of self-satisfaction. Complementary sources of income can contribute to the overall quality of life. Students who work while studying are in better physical condition since they can afford various forms of physical exercise (fitness, individual programs, gyms, etc.). Physical activity has a positive effect on self-confidence and increases self-efficacy (McAuley et al., 2000) and this indirectly increases the level of self-satisfaction.

5. Conclusion

In the analysis of the results, it was found that the largest number of students' study away from home, which significantly affects their way of life. The new situation is influenced by various factors in the new environment, but also by the current socio-economic profile. The survey showed that students are generally satisfied with their status, which is related to several variables. Their financial stability is closely related to the fact that the majority is financially supported by their parents, but it is also reflected in several other variables such as infrequent consumption of fast food, physical activity, and smoking. Financial stability positively affects life satisfaction and caring for a proper diet, but also provides room for some vices. It seems

that additional sources of income (working while studying) can have a positive effect on self-satisfaction and better physical condition.

The methodological limitations of this research are related to sample size and sample selection since all participants are from one faculty. So, in future research, the sample should be expanded to include participants from other faculties as well as older and younger respondents.

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AUDITOR ROTATION AND KEY AUDIT MATTERS IN THE REPUBLIC OF CROATIA: THE MODERATING ROLE OF APPOINTING A BIG FOUR COMPANY

ABSTRACT

The aim of this paper was to test the moderating effect of appointing the Big Four auditor on the relationship between auditor rotation and the number of key audit matters disclosed in an independent auditor's report. The research sample was created using data publicly available on the Zagreb Stock Exchange and it comprised 66 companies whose shares had been listed on the same stock market in the four-year period from 2016 to 2019, i. e. 264 observations. Panel analysis was used to estimate the regression model which has been used for hypothesis testing. Control variables, such as company size, profitability, leverage, receivables and inventories to total assets as well as the number of subsidiaries, have been also included in the model. The direction of the relationship between auditor rotation and key audit matters was difficult to predict because two opposing forces could influence the number of key audit matters – increased auditor's independence and reduced level of knowledge concerning client's business activities. However, it had been expected that the moderating effect of appointing Big Four auditing companies would have a positive effect on the relationship between auditor rotation and the number of key audit matters because of the shorter learning process and a higher level of independence. Despite the fact that the positive moderating effect of newly engaged Big Four auditors on the relationship between auditor rotation and the number of key audit matters was, according to the expectations, stronger than the negative effect of auditor rotation on the number of key audit matters, these relationships weren't statistically significant. Consequentially, the research hypothesis could not be accepted.

Keywords: *auditor rotation, Big Four, key audit matters.*

1. Introduction

The traditional model of audit reporting has often been criticized as it is considered that "the audit report is highly standardized and its information content is low" (Bedard et al., 2014, 5). Therefore "several institutions and regulators began to work on a new reporting model for

auditors in order to enhance the report's content and informational value" (Pinto and Morais, 2018, 2). Among these activities, The International Auditing and Assurance Standards Board (IAASB) issued a new standard – International Standard on Auditing 701 (ISA 701) - "Communicating key audit matters in independent auditor's report" (Croatian Chamber of Auditors, 2016). This standard introduced a new auditor's reporting model where the most significant change was the introduction of key audit matters (in further text – KAMs). One of the main goals of the new model of audit reporting, which is often called the model of extended audit reporting, is to increase the information content of audit reports and reduce the information gap between auditors and users of their reports. Therefore, including KAMs in an auditor's report should improve the auditor's communication with financial statement users and reduce information and expectation gaps. According to provisions of ISA 701, KAMs are "those issues that, by auditor's professional judgement, are of utmost importance in current period's financial statement audit. KAMs are selected among issues that were communicated to management" (Croatian Chamber of Auditors, 2016, par. 8).

A significant part of research related to the new model of audit reporting is related to the analysis of information content and communicative value of auditor's report (Köhler et al., 2016, Sirois et al., 2017, Tušek & Ježovita, 2018) and "less research focuses on what might influence the disclosure of KAMs by auditors" (Pinto & Morais, 2019, 146). Pinto and Morais point out how further research in this area is recommended and they state how "identification of the determinants of the number of KAMs is relevant for three main reasons" (Pinto & Morais, 2019, 147). First of all, they argue that the greater number of KAMs reduces the usefulness of an auditor's report. This is in line with research conducted by Sirois et al. (2017) where they conclude how more KAMs in reports increase the complexity of audit reports and reduce their importance. As another reason for identifying factors relevant for disclosure of KAMs, the fact that KAMs attract users' attention and make parts of financial statements related to KAMs more highlighted (Pinto & Morais, 2019, Orquin & Loose, 2013) is stated. The third reason is evidenced through the fact that KAMs are more concise and credible than other disclosures in financial statements (Christensen et al., 2014), and therefore financial statement users can use them as substitutions for other disclosures in financial statements which may be more relevant. Analysis of factors that influence the number of KAMs was also emphasized by Köhler et al. (2016) since they suggested that future research should focus on the impact of auditor's characteristics on the communication of KAMs.

The main research question within this paper is how auditor rotation impacts the number of KAMs depending on the 'type' of the auditor. Research conducted within this paper provides direct evidence on the relation between KAM disclosure (number of KAMs) and two influencing variables: auditor rotation and appointing Big Four company, on a sample of companies listed on the Zagreb Stock Exchange. Authors assume that appointing Big Four auditors has a moderating effect on the relationship between auditor rotation and the number of KAMs. Existing evidence shows that type of audit firm (Big Four vs. other audit companies) is correlated with KAM disclosure (Velte, 2018, Wuttichindanon & Issarawornrawanich, 2020, Velte, 2020, Ferreira & Morais, 2020). Wuttichindanon and Issarawornrawanich (2020) evidence a positive correlation between appointing Big Four auditors and KAM disclosure on a sample of companies from Thailand. Velte (2018, 2020) assumed positive impact of appointing Big Four auditors since "Big Four audit firms have more resources and industry-specific knowledge compared to small and medium-sized audit firms" (Velte, 2020, 190) and research results confirmed this assumption since Big Four variable was significant variable for KAM disclosure on a sample of UK firms. Regarding audit rotation, Velte (2018, 2020) evidenced a significant and negative correlation between this variable and KAM disclosure

which is in line with his assumption how "regarding learning effects of longer audit tenure we expected a negative relationship between rotation and KAM" (Velte, 2020, 190).

In research conducted within this paper, we assume that the moderating effect of appointing Big Four auditor will have a positive effect on the relationship between audit rotation and KAM disclosure due to shorter learning process and a higher level of independence. Control variables, such as company size, profitability, leverage, the ratio of receivables and inventories to total assets, and number of subsidiaries are also included in the model. The authors conducted research on a sample of companies listed on the Zagreb Stock Exchange in the four-year period from 2016 to 2019. The sample comprised 66 companies, i. e. 264 firm-year observations. For the hypothesis testing panel analysis was used to estimate the regression model. This paper contributes to the existing literature in this area since previously conducted studies in Croatia examined improvements in the auditor's reporting model (Tušek and Ježovita, 2018) and information value of auditor's report (Filipović et al., 2019). To our best knowledge, there is only one study (Šušak and Filipović, 2020) related to factors that influence disclosure of KAMs for the Croatian market. More precisely, in this study authors analysed the relation between the announcement of audit fees and KAM disclosure and found no significant relationship. Our research contributes to the existing literature on KAM disclosure since the accent is on moderating the role of appointing Big Four auditors and the impact of appointing Big Four auditors on the relationship between auditor rotation and KAMs.

The paper is organized as follows. After the first, introductory section, the second part of the paper presents a relevant literature review. Within the third section research hypothesis is developed, research sample and research design are presented. The following section brings research results while in the last part of the paper concluding remarks and recommendations for further research are presented.

2. Literature review

In this part of the paper, authors present recent research that is relevant in the context of our research topic. We focus on research related to factors that are relevant in the context of disclosures of KAMs in an auditor's report. Pinto and Morais (2019) analysed factors that influence the number of KAMs in auditor's report in three European countries: the UK, France, and the Netherlands. Their findings show that a higher number of KAMs is positively associated with a number of business segments, more precise accounting standards, and audit fees. On the other side a negative association is noted for banks and the number of disclosed KAMs. Authors explain this evidence by the "fact that financial institutions are in highly regulated and supervised industry that reduces the need to disclose the KAMs" (Pinto and Morais, 2019, 147).

Research on determining factors of KAM disclosure in Thailand was conducted by Wuttichindanon and Issarawornrawanich (2020). The sample comprised of companies listed on the Stock Exchange of Thailand and included 996 firm-years in 2016 and 2017. Research results show that factors influencing disclosure of KAMs in Thailand are auditor's litigation risk, firm complexity, profitability, and industry type. More precisely, positive association was identified for the number of KAMs and the following variables: Big Four audit firms, firms with many subsidiaries, and firms in technology, property and construction, and finance industries.

Furthermore, the number of KAMs is positively correlated with the number of independent directors while a negative association was identified for the profitability variable and number of KAMs. Wuttichindanon and Issarawornrawanich (2020) found a positive correlation

between Big Four audit firms and disclosure of KAMs, which is opposite to the findings from Western countries where the insignificant correlation was evidenced (Sierra-Garcia et al., 2019). Also, positive correlation was identified for corporate governance variable number of independent directors meaning that companies with a greater proportion of independent directors tend to disclose more KAMs. Control variables related to firm characteristics also showed a significant correlation with KAM disclosures.

Velte (2018) investigated the relationship between the percentage of women in audit committees and KAM disclosure on a sample of UK firms. Research results indicated how the higher percentage of women in audit committees results in higher readability of KAM disclosures. The author included several control variables as well and results showed that firm characteristics related to size, profitability, and number of business segments had a positive significant impact on KAM. Furthermore, results indicated how "the appointment of a Big Four audit firm and the issuance of a modified going concern opinion contributed to the number of KAM disclosures in a positive way while an audit firm rotation contributed in a negative way" (Velte, 2018, 752-753). Other control variables: leverage, ratio of current assets and total assets, ratio sales outside the UK and total assets, and cross-listing on the NYSE, AMEX, or NASDAQ were not found significant for the model.

Association between financial and industry expertise of audit committee members and KAMs within related audit reports on a sample of UK listed companies was performed by Velte (2020). The research sample included 1.319 firm-year observations for the years 2014-2017. Research results confirmed that audit committees' financial and industry expertise observed separately and combined are positively correlated with KAM disclosure. However, this relation is stronger when financial and industry expertise is combined. Among control variables different corporate governance specific, as well as firm-specific variables, were also analysed. Results showed that among firm-specific controls ROA has a positive impact on KAM disclosure. Among corporate governance controls, the number of audit committee meetings, Big Four auditors, and the existence of a modified going concern opinion have a significant positive impact on KAM while audit firm rotation showed significant negative impact on KAM disclosure.

Lin et al. (2020) examined the impact of directors' and officers' liability insurance on KAM disclosures. They argued how the number of KAMs can be observed as a measure of the company's corporate governance risk and assumed a positive impact of directors' and officers' liability insurance on the number of KAMs. The research sample comprised 1.501 Taiwan's listed companies in 2016. Besides the impact of directors' and officers' liability insurance on KAM disclosures, different control variables were also included in the model. These variables were divided into the following categories: firm-specific variables, corporate governance variables, auditing quality variables, specialist insurers' variables, variables of board structure, and industry-specific variables. Results evidenced how "the number of KAMs is higher at a company that purchases D&O liability insurance and for which the insurance coverage is relatively large, which in turn leads to an increase in the number of KAMs reported" (Lin et al., 2020, 998). Also, authors state that "not only does the reputation effect of the accounting firm and the quality of its audit affect the number of KAMs but the different characteristics of its clients also give rise to significant differences in the number of KAMs reported" (Lin et al., 2020, 998).

The number of KAMs disclosed by Brazilian companies and factors associated with KAM disclosure was analysed by Ferreira and Morais (2020). The research sample comprised 447 Brazilian companies listed on the Brazilian stock market in 2016. Regarding factors associated

with KAM disclosure, the authors analysed variables related to auditor characteristics and those related to the audited companies. Research results indicated a positive relationship between KAM disclosure and the following variables: Big Four auditor and complexity of a company. Negative relation was confirmed for variables auditor's fees and auditor's opinion being modified. Authors state how "contrary to expectations, the higher the auditor's fees in relation to total assets, the lower the number of KAMs" (Ferreira & Morais, 2020, 263).

Šušak and Filipović (2020) analysed the impact of audit fee disclosure on the number of KAMs. The research sample comprised of 73 companies listed on the Croatian capital market and audit reports for the year 2018 were analysed. According to research results, there was no statistically significant correlation among observed variables and it could not be concluded that the announcement of audit fee had an impact on KAM disclosure.

Given that Big Four auditors had a positive relationship with the issuance of KAMs in existing research, the main presumption in this research was that auditor rotation, which resulted in appointing Big Four auditors, would result in the increased effect, i. e. higher number of KAMs. Taking into account notions from previous research, the following research hypothesis was established: *There is a statistically significant and positive moderating effect of appointing Big Four auditing company on the relationship between auditor rotation and the number of key audit matters.*

3. Methodology and research hypothesis

The data necessary for creating a research sample was collected from the official website of the Zagreb Stock Exchange and it comprises 66 companies whose shares were listed on the same stock market in the four-year period from 2016 to 2019, i. e. 264 observations. Financial institutions such as commercial banks, insurance companies, and funds were excluded from the research sample, as well as the companies that were delisted from the Zagreb Stock Exchange after 1st October 2020, companies that were listed in the Zagreb Stock Exchange after 1st January 2019, companies which did not have published auditor's reports, and companies which were classified in industries that had the lowest number of observations, i. e. industries below five observations.

In order to determine a model suitable for the statistical analysis, the Hausman test was applied (Boolaky et al., 2019). Its results had indicated that the random effects panel model should be used instead of the fixed effects panel model. Consequently, panel analysis was used to estimate the random-effects model, and its regression coefficients were analysed to determine if the research hypothesis should be accepted. Control variables, such as company size, profitability, leverage, receivables and inventories to total assets, as well as the number of subsidiaries, have been also included in the model:

$$KAM_{i,t} = \beta_0 + \beta_1{}^*ROT_{i,t} + \beta_2{}^*BIG4_{i,t} + \beta_3{}^*BIG4 \times ROT_{i,t} + \beta_4{}^*SUBS_{i,t} + \beta_5{}^*SIZE_{i,t} + \beta_6{}^*ROA_{i,t} + \beta_7{}^*LOSS_{i,t} + \beta_8{}^*LEV_{i,t} + \beta_9{}^*RIA_{i,t} + u_{i,t}$$

where:
Dependent variable:
KAM = number of key audit matters disclosed in an auditor's report

Test variables:

ROT = auditor rotation expressed as a dichotomous variable which could take one of two values – value one if there was a change of audit company in a current financial year and value zero if there was not a change of audit company in relation to a previous financial year)

BIG4 = affiliation of an audit company to the Big Four expressed as a dichotomous variable (it could take one of two values – value one if a company can be classified among the Big Four audit companies and value zero if a company can not be classified among the Big Four audit companies)

BIG4 x ROT = interaction term between affiliation of audit company to the Big Four and auditor rotation

Control variables:

SUBS = number of subsidiaries controlled by a company

SIZE = company size measured by the natural logarithm of total assets

ROA = return on assets (profitability measure)

LOSS = financial result expressed as a dichotomous variable (it could take one of two values – value one if a company had made losses and value zero if a company had made a profit in a certain financial year)

LEV = a leverage ratio that shows the amount of total liabilities relative to total assets

RIA = a ratio that shows the amount of receivables and inventories relative to total assets

β_0 = intercept value

$\beta_1 - \beta_9$ = independent variables' coefficients

u = statistical model error.

Considering previous research, a negative relationship between the dependent variable and auditor rotation could be predicted because of the "learning effects of longer audit tenure" (Velte, 2018, 751). On the other side, there is also a possibility that the rotation could result in "improved audit independence" (Suttipun, 2020, 31). Considering those notions, it isn't surprising that "the results of the influence of audit rotation on KAM reporting are mixed" (Maedee, 2006, Velte, 2018, in Suttipun, 2020, 31).

Also, it was expected that the Big Four audit companies will have a positive impact on the relationship between KAMs disclosed in an auditor's report and auditor rotation given that they "have more resources and industry-specific knowledge compared to small and medium-sized audit firms" (Velte, 2018, 751). Several control variables were also included in the regression model. Firstly, this research used "the number of subsidiaries … as a proxy of business complexity" (Ferreira & Morais, 2020, in Wuttichindanon and Issarawornrawanich, 2020, 570) because "the number of KAMs is large for firms with numerous subsidiaries" (Ferreira & Morais, 2020, in Wuttichindanon & Issarawornrawanich, 2020, 565).

Another variable that expresses complexity is the auditee's size – "the larger the size of the audited entity and the more complex the business, the more KAMs are disclosed, and vice versa" (Li, 2020, 401). The mentioned variable was included in research conducted by Abdelfattah et al. (2020, 6), who measured it with the "natural logarithm of total assets". On the other side, "studies show that larger firms also have more power to negotiate with auditors in terms of audit fees" (Casterella et al., 2004, Huang et al., 2007, in Pinto & Morais, 2019, 151) and that "large clients are able to bring more pressure to bear on auditors to disclose fewer KAMs" (Pinto & Morais, 2019, 151). Taking previous remarks into account, the relationship between the size of a company and the dependent variable was not predicted.

The financial performance of a company is predicted to have a negative relationship with the dependent variable given that "companies with higher profitability tend to have less probability of default and tend to receive an unqualified audit opinion" (Loebbecke et al., 1989, Laitinen and Laitinen, 1998, Beasley et al., 1999, in Pinto and Morais, 2019, 151), while "companies with lower profitability tend to use more creative accounting in the preparation of financial statements that increase the probability of a qualified opinion and/or the disclosure of more KAMs" (Pinto & Morais, 2019, 151). Return on assets (Velte, 2020) and binary variable expressing the financial result of a company (Abdelfattah et al., 2020) are used as the measures of profitability.

When companies have higher leverage they are perceived riskier and it is expected that an auditor will disclose a higher number of KAMs for riskier companies, i. e. positive relationship with the dependent variable is presumed (Velte, 2018). Taking into account increased audit risk, receivables and inventory are included as a control variable, and a positive association with the dependent variable is predicted because those accounting items are "more difficult to audit", "have a higher probability of error" (Pinto & Morais, 2019, 151) and "require specialized audit procedures" (Simunic, 1980, Hay et al., 2006, in Pinto & Morais, 2019, 151).

4. Research results

Descriptive statistics are presented in Tables 1-4. Standard deviations and means were calculated for dependent variable on a yearly basis, from 2016 to 2019. The average number of KAMs disclosed in auditor's reports was increasing from 2017 (1.285714) to 2019 (1.419355). Standard deviation had been decreasing from 2016 to 2018, but it increased in 2019.

Table 1: Descriptive statistics – mean and standard deviation (key audit matters)

Year	Mean	Standard deviation
2016	1.314815	0.9280549
2017	1.285714	0.7796103
2018	1.360656	0.7753018
2019	1.419355	0.8005815

Source: Analysis conducted by authors using the Stata 13.1 (StataCorp, 2013) and information from auditor's reports and annual financial statements publicly available at the official website of the Zagreb Stock Exchange.

Also, the dependent variable was analysed in the context of two test variables, affiliation to the Big Four (Table 2) and auditor rotation (Table 3). In 2016 and 2017, the average number of KAMs disclosed by the Big Four companies was higher than the average number of KAMs disclosed by companies that did not belong to the Big Four. The situation was opposite in 2018 and 2019 when the average number of KAMs disclosed by the Big Four companies was lower than the average number of KAMs disclosed by companies that did not belong to the Big Four. Apparently, standard deviations were lower for Big Four companies in all considered financial years, indicating lower variation.

Table 2: Descriptive statistics – dependent variable partitioned by affiliation of appointed audit company to the Big Four

Year	BIG4	Mean	Standard deviation
2016	0	1	0.9780193
	1	1.566667	0.8172002
2017	0	1.230769	0.862911
	1	1.333333	0.711159
2018	0	1.5	0.9486833
	1	1.257143	0.6108267
2019	0	1.551724	0.8274836
	1	1.225806	0.7169229

Source: Analysis conducted by authors using the Stata 13.1 (StataCorp, 2013) and information from auditor's reports and annual financial statements publicly available at the official website of the Zagreb Stock Exchange.

Table 3: Descriptive statistics – dependent variable partitioned by the rotation of audit company in a current financial year

Year	ROT	Mean	Standard deviation
2016	0	1.27907	0.9083103
	1	1.333333	1.118034
2017	0	1.232558	0.8117356
	1	1.5	0.7559289
2018	0	1.395349	0.8766694
	1	1.235294	0.4372373
2019	0	1.4	0.83666
	1	1.285714	0.6112498

Source: Analysis conducted by authors using the Stata 13.1 (StataCorp, 2013) and information from auditor's reports and annual financial statements publicly available at the official website of the Zagreb Stock Exchange.

The situation regarding auditor rotation was identical to that of affiliation to the Big Four. In 2016 and 2017, the average number of KAMs disclosed for companies that rotated their auditors was higher than the average number of KAMs disclosed by companies that did not rotate their auditors. Adversely, in 2018 and 2019, the average number of KAMs disclosed by companies that rotated their auditors was lower than the average number of KAMs disclosed by companies that did not rotate their auditors. Standard deviations were lower for the Big Four companies in all considered financial years, except for 2016. Descriptive statistics are presented in Table 4. Auditor rotation and affiliation of an audit company to the Big Four are expressed as a dichotomous variable, thus it can be stated that 22 percent of companies changed their audit company in relation to a previous financial year and 55 percent of companies appointed a Big Four audit company. Also, 62 percent of companies made losses. The average number of subsidiaries controlled by a company was 3.14, return on assets was 0.07 percent, company size was 8.74, leverage ratio was 0.42, and ratio that shows the amount of receivables and inventories relative to total assets was 0.19. Besides mean values, standard deviation, minimum, and maximum are also included in this table.

Table 4: Descriptive statistics – mean, standard deviation, minimum, and maximum (independent variables)

Variable	Mean	Standard deviation	Minimum	Maximum
ROT	0.2212389	0.4160024	0	1
BIG4	0.5527426	0.4982627	0	1
SUBS	3.138996	4.404453	0	28
SIZE	8.736331	0.5529317	7.620491	10.33308
ROA	0.0065122	0.1024583	-0.9665553	0.2236259
LOSS	0.618677	0.4866593	0	1
LEV	0.4226207	0.2120763	0.0489001	1.106445
RIA	0.1857551	0.1736915	0.0007672	0.7786773

Source: Analysis conducted by authors using the Stata 13.1 (StataCorp, 2013) and information from auditor's reports and annual financial statements publicly available at the official website of the Zagreb Stock Exchange.

To determine the existence of the multicollinearity problem, the correlation matrix was calculated. The results included in Table 5 indicate that correlation coefficients were significant and positive between the dependent variable and the number of subsidiaries, as well as between the dependent variable and the size of an auditee. This is in line with the notions introduced by Li (2020) and Wuttichindanon and Issaraworranich (2020). Furthermore, there were statistically significant correlation coefficients between several independent variables, but it is important to note, in the context of multicollinearity, that these correlation coefficients did not exceed the threshold of 0.8 (Gujarati, 2003, 359, in Ezat, 2019). This was also confirmed with values of variance inflation factor contained in Table 6, given that none of these values exceeded the threshold of 10 (Velte, 2018).

Table 5: Correlation matrix of research variables

	KAM	ROT	BIG4	SUBS	SIZE	ROA	LOSS	LEV	RIA
KAM	1.0000								
ROT	-0.0076	1.0000							
BIG4	0.0049	-0.0140	1.0000						
SUBS	0.3111*	0.0308	0.1326*	1.0000					
SIZE	0.2449*	-0.0370	0.4695*	0.4769*	1.0000				
ROA	-0.0072	0.0147	-0.1063	-0.0303	0.1303*	1.0000			
LOSS	-0.0316	0.0425	-0.1051	-0.0545	-0.1372*	0.3855*	1.0000		
LEV	0.0117	-0.0171	0.0873	0.1519*	0.0716	-0.3117*	-0.1518*	1.0000	
RIA	0.0700	-0.0464	-0.0610	0.2620*	0.0676	0.0360	-0.1006	0.2821*	1.0000

* Statistically significant at 5 percent.
Source: Analysis conducted by authors using the Stata 13.1 (StataCorp, 2013) and information from auditor's reports and annual financial statements publicly available at the official website of the Zagreb Stock Exchange.

Table 6: Variance inflation factors

Variable	VIF	1/VIF
ROT	2.26	0.442009
SIZE	1.86	0.538266
BIG4	1.63	0.615236
ROA	1.53	0.654440
SUBS	1.45	0.688302
LOSS	1.29	0.775749
LEV	1.25	0.800394
RIA	1.18	0.847468
Mean VIF	1.66	

Source: Analysis conducted by authors using the Stata 13.1 (StataCorp, 2013) and information from auditor's reports and annual financial statements publicly available at the official website of the Zagreb Stock Exchange.

Finally, the regression model was estimated using panel data analysis. As evident from Table 7, the coefficient of BIG4 was marginally significant at the 10 percent threshold. Accordingly, it can be stated that the relationship between audit company affiliation to the Big Four and number of KAMs included in auditor's report is negative, i. e. it is expected, contrary to the relationship presumed in this research, that their reports will contain less KAMs than reports of companies which do not belong to the Big Four.

Table 7: Regression model – Panel data analysis

Variable	Coefficient	Standard Error	z	P > z
ROT	-0.0721134	0.1619297	-0.45	0.656
BIG4	-0.2519684	0.1539157	-1.64	0.102
BIG4 x ROT	0.1348748	0.2245069	0.60	0.548
SUBS	0.0282007	0.0173692	1.62	0.104
SIZE	0.3472323	0.1745217	1.99	0.047
ROA	-0.4267596	0.5371792	-0.79	0.427
LOSS	0.1438907	0.1339186	1.07	0.283
LEV	-0.0353184	0.3456091	-0.10	0.919
RIA	-0.0862617	0.4671664	-0.18	0.854
_cons	-1.673549	1.508658	-1.11	0.267

Source: Analysis conducted by authors using the Stata 13.1 (StataCorp, 2013) and information from auditor's reports and annual financial statements publicly available at the official website of the Zagreb Stock Exchange.

The interaction term between affiliation of an audit company to the Big Four and auditor rotation was positive (0.13), indicating that the positive moderating effect of newly engaged Big Four auditors on the relationship between auditor rotation and the number of KAMs was, according to the expectations, stronger than the negative effect of auditor rotation on the number of KAMs (-0.07), but none of them was statistically significant. Accordingly, the research hypothesis that there is a statistically significant and positive moderating effect of appointing a Big Four auditing company on the relationship between auditor rotation and the number of KAMs was not accepted.

Regarding control variables, the coefficient representing the relationship between the number of subsidiaries and the number of KAMs disclosed in an auditor's report was marginally significant at the 10 percent threshold and positive, indicating that higher corporate complexity is likely to result in a higher number of KAMs. This is in line with the notions supported by Wuttichindanon and Issarawornrawanich (2020). The coefficient of an auditee size was statistically significant at the five percent threshold and positive, indicating that large auditees are more likely to have a higher number of KAMs disclosed in their auditor's reports, which is in line with Li (2020).

5. Conclusion

Given the importance of the external audit for the stability of a financial system, constant improvements are required to maintain stakeholders' trust. The introduction of KAMs in the contents of independent auditor's report represents efforts to provide them with a piece of more accurate information on the financial position and performance of a company. But these improvements cannot be analysed in a vacuum, and they have to be considered in relation to other variables in order to create regulative synergies. For instance, auditor rotation is one of those variables with a potential impact on KAMs disclosure. The question was posed regarding the effect of the Big Four auditors, given their greater resources, on the relationship between auditor rotation and the number of KAMs. Although the interaction term between the affiliation to the Big Four companies and auditor rotation was positive and, according to the expectations, stronger than the negative effect of auditor rotation on the number of KAMs, it was not statistically significant. Thus, the research hypothesis that there is a statistically significant and positive moderating effect of appointing a Big Four auditing company on the relationship between auditor rotation and the number of KAMs was not accepted. Consequently, it was concluded that the affiliation to the Big Four doesn't affect the main relation that was examined. Auditor rotation did not have a significant impact on the number of KAMs, and that could be attributed to its ambiguous influence on the dependent variable. Moreover, appointing a Big Four auditor did not have a positive impact on the number of KAMs, as expected based on previous research. This could signify that audit companies which belong to the Big Four attach less importance to the disclosures of KAMs. That is also an avenue for the future research. In addition, the research sample was constrained to listed companies in the Republic of Croatia and the analysis could be conducted in other countries with distinct audit markets. The results of the research are of importance primarily to investors and clients, but also to regulatory bodies.

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EU COUNTRIES FROM A QUALITY OF LIFE PERSPECTIVE

ABSTRACT

Quality of life as a multidisciplinary concept is the main theme of this paper, and can be defined as an individual's satisfaction and degree of well-being. The paper presents this concept theoretically, and the main goal is to present the quality-of-life indicators of EU citizens. Aside from literature review, the selected secondary results of the subjective quality-of-life indicators were analysed, mostly by using the comparison method. The conclusion is that quality-of-life research can provide policy makers with important information about citizens' satisfaction and that it may be desirable to rely more on them in the future if the well-being of the population is the main goal of the society. The contributing factors to the lower level of satisfaction are the high number of working hours per week, the low level of employment, the lack of confidence among the residents regarding the legality of the system, and the citizens' lack of confidence in the European Parliament. The obtained results are reliable, but not satisfactory, and therefore a timely response to the results is needed to ensure the highest quality of life for citizens, which is also the most important goal and the reason for conducting a large number of quality-of-life surveys.

Keywords: *quality of life, well-being, Eurostat, European Quality of Life Survey.*

1. Introduction

Quality of life as a multidisciplinary concept is most often determined by the degree of satisfaction and well-being of an individual with various material and immaterial components such as education, employment, health, housing conditions, etc (Frajman Ivković, 2012). Quality of life surveys, which have increased exponentially in the last decade, are conducted to identify in time the difficulty of meeting basic needs, if any, to establish how satisfied residents are with basic living conditions, how much they trust their governments, what makes them (un)satisfied and so on. Also, the competitiveness of countries and their quality of life, in general, are often correlated. Competitiveness can be seen as the ability to achieve the success that leads to a highly productive economy and an improved standard of living for the entire population (Frajman-Jakšić, 2009) Thus, it is impossible to achieve a higher degree of competitiveness of the country based on the quality of only one factor, but the joint action of

most factors is necessary. In this paper, the emphasis is placed on the quality of life and the necessity of its monitoring and quantification not only from the objective perspective but also from the subjective perspective, which often completes the picture of the welfare of the state and its competitiveness.

2. Quality of life and well-being

The term quality of life has already been mentioned in his works by Aristotle in Ancient Greece, who argued that quality of life means different things among different peoples and varies from person to person depending on the current situation (Čiček, 2013). According to Krizmanić and Kolesarić, as stated in work Vuletić and Mujkić (2002), quality of life is a subjective experience of one's own life determined by objective circumstances in which a person lives, personality characteristics that affect the perception of reality and his life experience. Authors Vuletić and Mujkić (2002) say that quality of life is primarily a psychological phenomenon, i.e. an attitude towards one's own life and its areas or aspects. Quality of life can be defined as the degree of satisfaction and well-being of individuals with food, employment, security, education, and other components that affect the quality of life. Quality of life is not necessarily determined by wealth and well-being, although basic living needs are met, they do not have to be a sufficient condition for quality of life (Lučev & Tadinac, 2008). Quality of life is measured by subjective and objective indicators, and each of the indicators has certain advantages and disadvantages.

Subjective indicators focus on individuals and the impact of certain aspects on the lives of individuals such as health, education, family, while objective indicators include measurable economic measures that provide insight into material wealth.

2.1. Objective indicators of well-being

Objective well-being is based on the so-called hard data, i.e. it represents an external view of quality of life measured by statistical indicators most often obtained from official statistical offices, institutes, etc. The objective well-being of society means the achievement and maintenance of economic development. However, objective well-being is often still called economic well-being, which is not entirely correct given that economic development depends on economic as well as non-economic factors. Gross domestic product as the market value of all final products and services produced within a country in a given period of time and other economic measures (such as inflation rate, unemployment rate, the balance of payments, etc.) have long been considered the main indicators of a country's prosperity. Since such measures provide insight only into material wealth without considering measures such as education, health, environmental protection, they can not be taken as the main indicators of well-being because an increase in a country's material well-being does not necessarily lead to a better standard of living for all its citizens (Frajman Ivković, 2012).

UNDP's (Bandura, 2006) survey of performance indicators called A Survey of Composite Indices Measuring Country Performance aimed to find indicators aimed at ranking or assessing the performance of a country using a wide range of issues such as competitiveness, government, social aspects, human rights, environment, security, and globalization, etc. The main conclusion of this publication is that the quantity of indicators has accelerated significantly since 1990, with a growing number of institutions developing and publishing alternative indicators. In a period of 26 years, the number of indicators has increased 8 times. The UNDP's report from 2008 (Bandura, 2008)[1] speaks of 178 indicators, which shows a further increase in the number of indicators, although not as rapid as in the period 1991-2006. Indicators (such as The

Economic Aspects of Welfare, The Index of Social Progress, The Index of Sustainable Economic Welfare, The Human Development Index, The Genuine Progress Indicator, The Environmental Performance Index, The Ecological Footprint) are not the subject of this paper but are it subjective indicators of well-being shown below (Frajman Ivković, 2012).

2.2. Subjective indicators of well-being

According to Frajman Ivković (2012), subjective well-being is basing on so-called soft data and measures people's perception. Kaliterna Lipovčan and Prizmić-Larsen (2006) talk about four different indicators of subjective well-being: feelings of happiness, life satisfaction, personal and national well-being. This approach focuses on insight into the cognitive and affective reactions of an individual to his / her own life as a whole, but also individual aspects of life such as health, work, and relationships, to better understand the quality of life (Diener and Suh, 1997). Frajman Ivković (2012) lists some of the indicators used to measure subjective well-being (SWB) at the European and global level: Gross National Happiness (GNH), which was created to replace GDP as a measure of society's progress, the World Database of Happiness from the Netherlands, the Happy Planet Index, The World Happiness Repot, the Eurobarometer Survey, The European Quality of Life Survey, the Quality of Life Index (QoLI) and many others.

The Happy Planet Indeks (HPI) includes both subjective and objective indicators, and measures what is important to people - sustainable well-being for all, measures how well nations work to achieve long and happy life. The Happy Planet Index measures through four indicators: well-being, life expectancy, output inequality, and environmental footprint. Schepelmann et al. (2010) emphasize that HPI is not a measure of the happiest country in the world but returns a look at the economy from the very beginning by emphasizing what inputs (resources) are and what outputs are (human lives of varying duration and happiness). They also point out that it includes life expectancy and environmental factors, and according to its name, it is considering that measures exclusively the happiness of the state.

The World Happiness Report is a significant overview of the state of global happiness that ranks 156 countries of the world according to how happy their citizens see themselves. The World Happiness Report is the global annual publication of the United Nations Network for Sustainable Development, and the first publication published in April 2012, in support of the UN Summit: Prosperity and Happiness: Defining a New Economic Paradigm. This report presented available global data on national happiness, and each survey includes updated evaluations and a series of chapters on specific topics that further explore the science of well-being and happiness in specific countries and regions. Seventh Happiness Report focuses on happiness and community: how happiness has evolved over the past decade, with a focus on technology, societal norms, conflicts, and government policies that have driven those changes (World Happiness Report 2019).

The European Quality of Life Survey is a unique pan-European survey conducted every four years that examines the objective circumstances of the lives of European citizens. EQLS takes into account many indicators such as employment, education, income, housing, family, health, and the balance between the private and business worlds. EQLS successfully complements traditional indicators of economic growth and living standards, such as GDP or income.

Subjective indicators of well-being are also addressed by Eurostat using the Quality of Life tool, which shows the general satisfaction of Europeans with various aspects of life and offers

the possibility of comparing the selected country with the other Member States and with the European Union average. The main indicators that indicate the level of quality of life according to Eurostat (European Commission), are general life satisfaction, material living conditions, housing conditions, employment, time management, education, health, social relations, security, governance, and the environment. Each of these dimensions is measured using statistical indicators that take into account objective factors such as housing conditions, income and working status, and subjective estimates of these factors, which will be explained in more detail in the next chapter (Eurostat, Croatian Bureau of Statistics).

There are more and more indicators like this and similar ones that also aim to explore the quality of life every day, which makes it easier to identify the reasons why residents feel a certain level of (dis) satisfaction.

3. Quality of life in the European Union

3.1. Quality of life according to World Happiness Report

World Happiness Report is bases on six indicators: GDP per capita, social support, healthy life expectancy, freedom of decision-making, generosity, and the perception of corruption. The 2019 report addresses three sets of factors: 1. the connection between government and happiness, 2. the power of prosocial behavior, and 3. changes in information technology. Figure 1 contains three sets of results, for Western Europe, Central, and Eastern Europe and the Commonwealth of Independent States (CIS) (World Happiness Report, 2019).

Figure 1: Convergence of Happiness in Europe, 2006 – 2018

Source: World Happiness Report 2019

All three groups of countries show average life estimates that declined after the 2007-2008 financial crisis, with the largest decline in Western Europe, then in the CIS, and only then a slight decline in Central and Eastern Europe. The recovery of happiness after the crisis began

first in the Commonwealth of Independent States, then in Central and Eastern Europe, while the situation in Western Europe began to improve only in 2015. The CIS situation reached almost the level of that in Central and Eastern Europe until 2014 but then continued to decline, while in Central and Eastern Europe it continued to grow in parallel with the rise in Western Europe after 2015. The presentation represents the convergence of happiness between the three parts of Europe but with the recent emergence of a gap between Central and Eastern Europe and the Commonwealth of Independent States (World Happiness Report 2019).

3.2. Quality of life in the European Union according to the European Quality of Life Survey

So far, four EQLS surveys have been conducted and over the years the survey has spread to a larger geographical area (Eurofound, 2016)[2]:

— The first EQLS - took place in 2003 in 28 countries, 25 EU Member States and 3 candidate countries: Turkey, Bulgaria, and Romania
— The second EQLS - took place in 2007 in 31 countries: 27 EU Member States, Norway, and candidate countries Croatia, Macedonia and Turkey
— The third EQLS - was implemented in 2012 in 34 countries: 27 EU member states and 7 candidate and potential candidate countries: Croatia, Macedonia, Iceland, Montenegro, Serbia, Kosovo, and Turkey
— The fourth EQLS - took place in 2016 in 33 countries: 28 EU member states and 5 candidate countries: Albania, Macedonia, Montenegro, Serbia, and Turkey.

During each cycle, a random sample of the adult population aged 18 and over living in private households is selected, based on a statistical sample and covering a cross-section of society.

The research results contain detailed information on a wide range of problems across three basic areas (Eurofound, 2016):
1. Quality of life - subjective well-being, optimism, health, the standard of living and poverty, balance between private and business life.
2. Quality of society - social insecurity, perception of social exclusion and social tension, trust in people and institutions, participation and engagement in the community, and involvement in training and lifelong learning.
3. Quality of public services - health care, long-term care, child care, and other public services.

Insight into the results and report of the conducted research provides Eurofound, an agency of the European Union founded in 1975, which serves to improve living and working conditions. Its role is to provide knowledge, information, advice, and expertise on working conditions and sustainable work, changes in the labor market, and quality of life based on comparable information, research, and analysis. In the continuation of the work, the emphasis will be on the area of quality of life, which includes subjective well-being, living standards, and the balance of business and private life.

3.2.1. Subjective well-being

In the survey through happiness level questions, participants were asked to rate their personal happiness on a scale of 1 to 10 with the intention of "capturing" the emotional aspects. It expected that happiness in this context would be different from life satisfaction, but there is a

possibility of difference as it is seen through different cultures (Eurofound, 2016). Figure 2 shows the evolution of happiness and life satisfaction between 2011 and 2016.

Figure 2: Level of happiness and life satisfaction by countries, 2011 – 2016
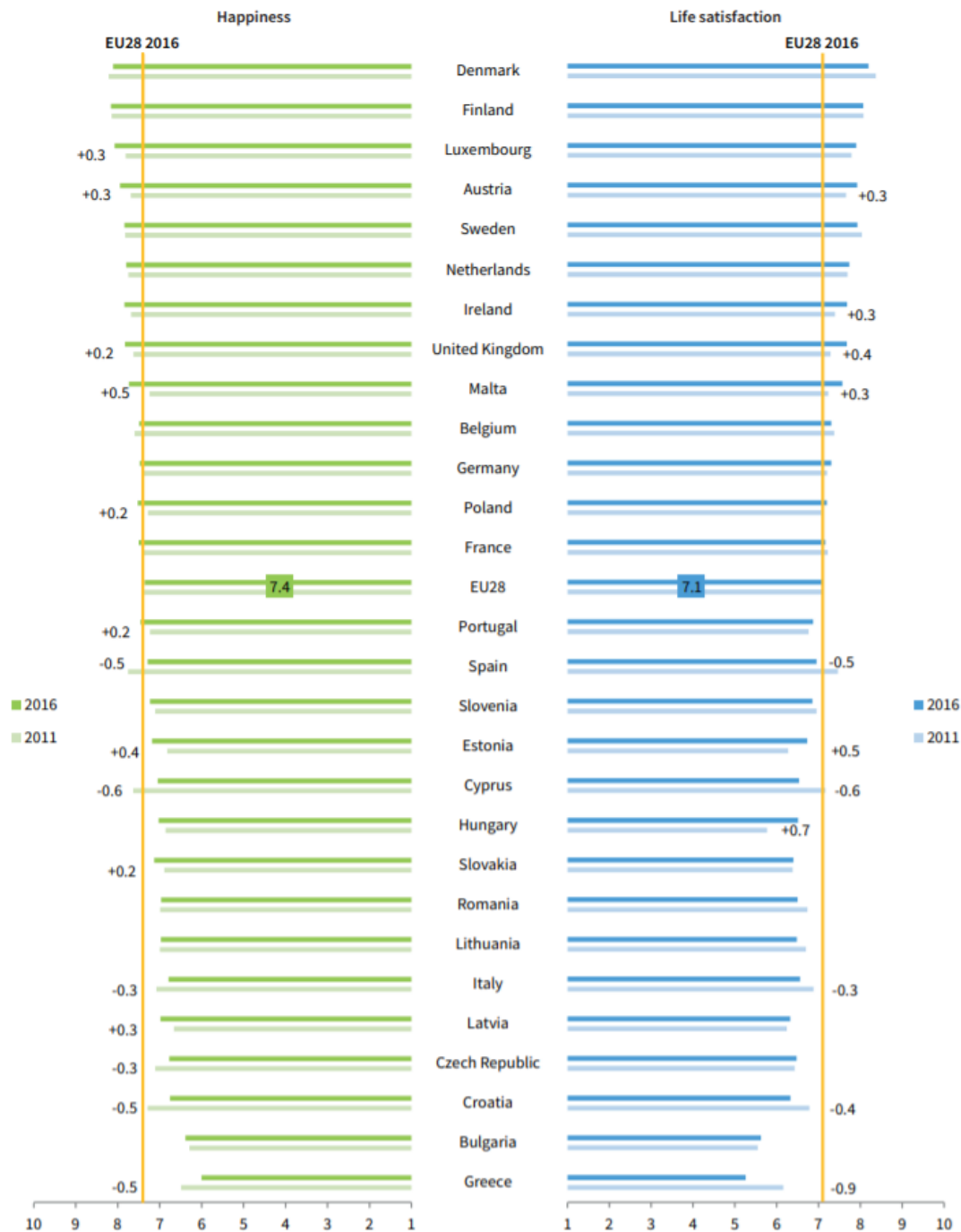
Source: Eurofound, 2016

The level of happiness of the members of the European Union is marked in green, and the level of life satisfaction is shown in blue. Happiness and life satisfaction are measured on a scale of 1 to 10. The average level of happiness ranges between 7.4-7.5 and life satisfaction between 7.0-7.1. In almost all countries, people attached a higher value to the level of happiness than to the level of life satisfaction, thus confirming the contradiction between the two concepts. The question asked (question number 4) was: "All things considered, how satisfied would you say

you are with your life these days? Please tell me on a scale of 1 to 10, where 1 means very dissatisfied and 10 means very satisfied.". Question 5 read: "Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy.". Figure 4 shows the difference in the results of 2011 and 2016. There was a large decrease in the level of happiness and life satisfaction in Croatia, Cyprus, Greece, Italy, and Spain, and there was a decrease only in the level of happiness in Austria, Estonia, Malta, and the United Kingdom. The increase in life satisfaction occurred only in Hungary and Ireland, and the increase in happiness in Latvia, Poland, Portugal, and Slovakia (Eurofound, 2016).

In some countries, subjective well-being has remained fairly stable for years, as is the case in Denmark, Germany, and Luxembourg. Positive change, more or less continuous, has occurred in Austria, Bulgaria, Ireland, Latvia, Portugal, and Romania. In general, the level of well-being in Greece provides the most concern, which is close to the bottom in almost all well-being measures. Many of these measures have continued to deteriorate in the last few years after the already deteriorating post-crisis period.

3.2.1. Living standards and deprivation

It is important to note that the living standard of the population, opportunities, and opportunities are not only closely related to income but also housing conditions, expenses, wealth, benefits, as well as their needs and the needs of their household. Thus, Europeans are less dissatisfied with their financial situation than they were in 2011. The EQLS results for 2016 show that 65% of Europeans believe that the financial situation of their household has remained the same as it was 12 months ago, 14% believe that it has improved, and 21% that the situation has worsened. In 2011, 35% of Europeans felt that their financial situation had deteriorated from 12 months ago. The exception is Greece where the vast majority in 2011 felt that the financial situation had not changed, while the most common response of several countries was that the financial situation of their household had deteriorated compared to 12 months before. These trends are visible in Table 1 (Eurofound, 2016).

Table 1: Trends in living standard satisfaction levels, by country

	2003	2007	2011	2016	Trend
Denmark	8.4	8.5	8.3	8.3	
Sweden	7.7	8.2	7.9	8.2	
Austria	8	7	8	8.1	
Luxembourg	7.9	8.1	7.8	7.8	
Ireland	7.6	7.2	7.3	7.8	
United Kingdom	7.4	7.5	7.3	7.7	
Netherlands	7.5	7.8	7.7	7.7	
Finland*	7.6	7.8	7.6	7.6	
Germany	7.5	7.1	7.2	7.4	
Malta	7.5	7.5	7	7.3	
Belgium	7.6	7.4	7.4	7.1	
France	6.9	7.2	6.9	6.9	
Portugal	6	6.1	6.5	6.8	
Spain	7	6.9	6.9	6.8	
Poland	5.5	6.3	6.2	6.7	
Slovakia	5.1	6.7	6.3	6.7	
Estonia	5.7	6.6	6.2	6.7	
Romania	6.1	6.4	6.4	6.7	
Hungary	5.8	5.3	5.8	6.6	
Italy	7.1	6.7	6.8	6.6	
Cyprus	6.9	7	7.5	6.6	
Czech Republic	6.2	6.5	6.3	6.6	
Slovenia	6.6	6.6	6.3	6.4	
Lithuania	5.1	6.1	6.1	6.4	
Latvia	5.8	5.6	5.9	6.2	
Croatia	N/A	5.7	5.9	6	
Bulgaria	4	4.5	4.7	5.6	
Greece	6.6	6.5	5.9	5.5	
EU28	**6.9**	**6.9**	**6.9**	**7.0**	

Source: Eurofound, 2016

In Table 1, green indicates a statistical improvement between 2011 and 2016 and red a statistical deterioration in the same period. The question asked was: "Could you please tell me on a scale of 1 to 10 how satisfied you are with each of the following items, where 1 means you are very dissatisfied and 10 means you are very satisfied?" (Eurofound, 2016).

Numerous European households barely make ends meet, even in the richest countries, 10% of households reported difficulties in making ends meet. Figure 3 shows the length of the line showing the difference between the highest and lowest income quarters of each country individually (Eurofound, 2016).

Figure 3: Reporting difficulties making ends meet, by income quartile (%)
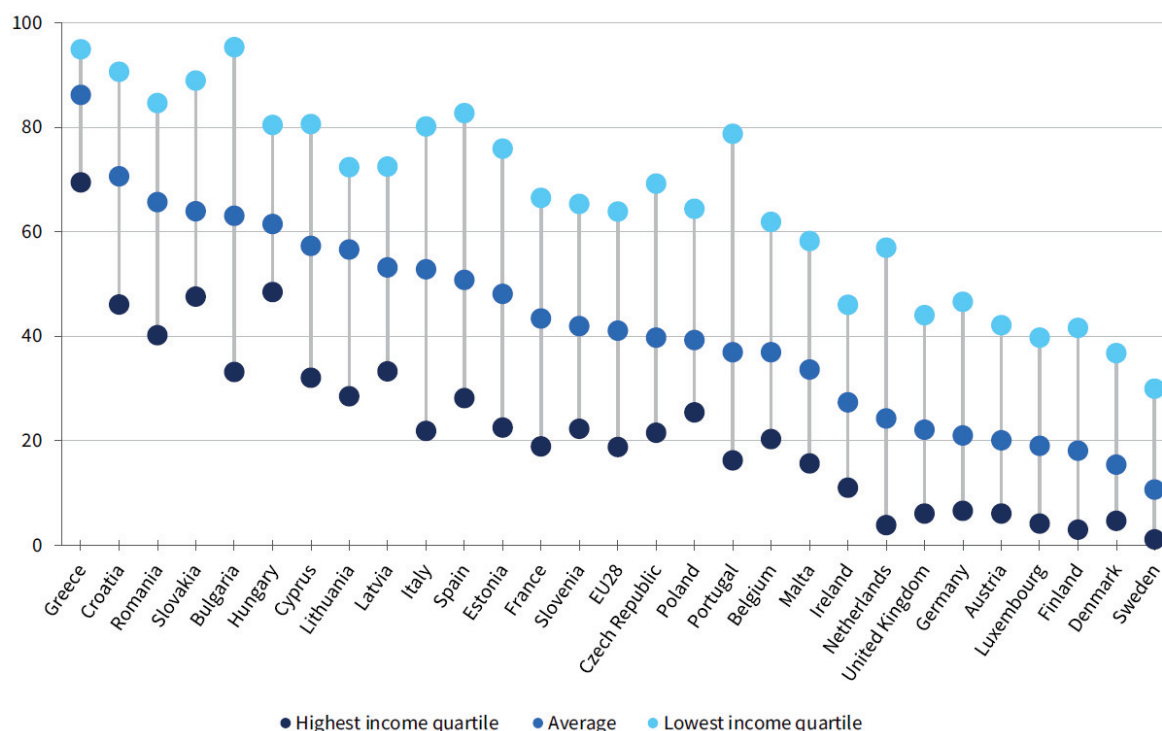
Source: Eurofound, 2016

The largest difference between those with the lowest income quartile and those with the highest is particularly pronounced in Bulgaria, Italy, and Portugal, although differences are also pronounced in France and the Netherlands. The figure also highlights the differences between EU member states. For example, in Sweden, the proportion of those who report difficulty joining the ends in the lowest income quartile is lower than the proportions recorded for the highest income quartile in Croatia, Greece, Hungary, Romania, and Slovakia (Eurofound, 2016).

3.2.2. Work–life balance and care responsibilities

EQLS measures problems related to balancing business and private life through three different dimensions by asking respondents whether they are (Eurofound, 2016):
- too tired from work to do household chores,
- experienced difficulties in meeting family responsibilities due to time spent at work,
- had difficulty concentrating at work due to family responsibilities.

The countries where respondents most often claim to be tired from doing housework are the Balkan countries (67% of respondents) and the Western islands (66%), and the countries where a small proportion of respondents claim to have difficulty doing housework after work several times weekly are the Nordic countries (53%) and Continental countries (Austria, Belgium, France, Germany, Luxembourg, the Netherlands, 55%). The impact of time spent at work on family duties is most often reported by respondents in the Balkans (51%) and Eastern Europe (50%), the problem of concentration at work due to family obligations is also mostly in the Balkans (31%) and Eastern Europe (28%). Also, from Table 2 it can be seen that the balance of private and business life is affected by the number of children a person has and their hours spent at work (Eurofound, 2016).

Table 2: Proportion of respondents in employment claiming that work–life balance issues occur at least several times a month (%)

		Too tired from work to do household jobs	Difficulty fulfilling family responsibilities because of time spent at work	Difficulty concentrating at work because of family responsibilities
Country cluster*	Nordic (Denmark, Finland, Sweden)	53	26	13
	Continental (Austria, Belgium, France, Germany, Luxembourg, Netherlands)	55	33	15
	Western islands (Ireland, United Kingdom)	66	37	17
	Mediterranean (Cyprus, Greece, Italy, Malta, Portugal, Spain)	60	39	21
	Eastern Europe (Czech Republic, Croatia, Hungary, Poland, Slovakia, Slovenia)	63	50	28
	Baltic (Estonia, Latvia, Lithuania)	60	43	23
	Balkan (Bulgaria, Romania)	67	51	31
Occupational class**	Managers/Professionals	59	38	15
	White-collar	57	35	19
	Blue-collar	64	45	23
Type of contract	Permanent contract	59	36	18
	Fixed-term contract	62	45	22
	No contract	63	39	21
Number of children under 18	None	58	35	18
	1	62	43	22
	2	58	41	21
	3+	67	45	25
Hours worked per week	1–29	49	23	15
	30–39	56	31	18
	40–49	60	40	19
	50+	73	59	26
Total	EU28	60	38	19

Source: Eurofound, 2016

The number of children is a key factor leading to problems in the balance between private and business life. While the results may not be surprising, they certainly point to the importance of developing childcare services, especially if society wants to boost higher birth rates and balance the impact of demographic aging (Eurofound, 2016).

3.3. Life in the happiest and most unhappy country of the European Union

According to the European Quality of Life Survey Report, in 2016 the highest level of happiness was achieved by Denmark. In Denmark, the level of subjective well-being has remained relatively stable over the years, and the level of satisfaction with living standards in 2016 was 8.3, which also gave it a leading position. That Danes balance their private and business lives well is also shown by the fact that Denmark, with an index of 6.5, is right behind the leading Netherlands in successfully balancing private and business life (Eurofound, 2016).

According to the latest available Eurostat data, overall life satisfaction in Denmark is as high as 8.0 out of a possible 10, ranking above the other 27 EU countries. 37.7% of the population is completely satisfied with the finances, so the average is 7.6 / 10, which puts Denmark in the first place together with Switzerland, and the average equivalent net income is €29,794 (2018), which again brings it to number one. Satisfaction with housing conditions in Denmark is 8.4 / 10, so it shares the leading position with Finland, being above the EU average, and the

employment rate in Denmark is a high 75.4% (2018). The fact that the Danes are satisfied with the availability of their speaking time confirms their position in the first place and this criterion (7.8 / 10). The average number of working hours in Denmark in 2018 was 33.2, which puts it in second place, and below the EU average. With the most confidence in the legal system of the state, Denmark again found itself in the leading position (7.5 / 10), and the percentage of the population who have confidence in the European Parliament is 62.0% (European Commission).

The great economic pressure showed an impact on the average subjective well-being of the state, in this case, Greece after the great economic crisis, and so there was a great decline in the happiness and life satisfaction of Greece. After an earlier decline in subjective well-being, further deterioration occurred between 2011 and 2016. In Greece, the level of satisfaction with the standard of living in 2016 was a miserable 5.5, and the European Union average was 7.0. Balancing private and business life can also have a positive or negative impact on overall satisfaction, so Greece is at the very bottom with a score of 4.9 below which is only the Republic of Croatia (Eurofound, 2016).

Overall (dis)satisfaction with life in general in Greece is 6.2 / 10, with the majority of residents describing their satisfaction as mediocre (51.8%), thus being below the EU average (7.0 / 10). The financial satisfaction of the Greek population is 4.3 / 10, and the average annual equivalent net income is € 7,863 (2018), which is almost twice lower than the EU average (€ 16,909). Satisfaction with housing conditions in Greece is only 19.0%, posing at the very bottom, ahead of Bulgaria and Latvia (EU average 32.5%). In terms of employment, Greeks are the least satisfied population with 14.0% of their jobs, and the employment rate is only 54.9%, which is why they are also at the bottom. Greeks are also the population that is least satisfied with their available time (11.6%), and the average number of working hours is a high 42.0 hours, which again places them in the most unfavorable place in the table. 4.1 / 10 inhabitants have faith in the legality of the system, and 37.0% of citizens have faith in the European Parliament (EU average 48.0%) (European Commission).

3.4. Happiness in the EU countries

Table 3 shows the results of happiness for the Member States of the European Union according to the latest data for all three selected subjective indicators. The data of the world happiness database in the table show the results of happiness for 82 countries for the period 2010-2018, and the highest happiness was achieved by Denmark, and the lowest by Bulgaria (without data on the remaining seven members of the European Union). The highest result for the planet's happiness index according to the data for 2016 was achieved by Spain and the lowest result by Luxembourg. Luxembourg and Spain have an approximately high life expectancy (Spain = 82.2 Luxembourg = 81.1), life satisfaction is higher in Luxembourg (Spain = 6.3 Luxembourg = 7.0), but the ecological footprint of Luxembourg is far higher (Spain = 3.7 Luxembourg = 15.8) and thus achieves a worse overall result of the planet's happiness index. The latest available data for 2019 is according to the World Happiness Report, where Denmark, again, achieves the highest overall score, and Bulgaria also the lowest overall score.

Table 3: A comparison of the happiness of the three subjective indicators according to the latest dana

COUNTRY	World Database of Happiness (0-10)	Happy Planet Index	The World Happiness Report (0-8)
Austria	-	30.5	7.246
Belgium	7.5	23.7	6.923
Bulgaria	4.6	20.4	5.011
Croatia	-	30.2	5.432
Cyprus	7.0	30.7	6.046
Czech Republic	6.5	27.3	6.852
Dennmark	8.5	32.7	7.600
Estonia	6.2	17.9	5.893
Finland	8.0	31.3	7.769
France	6.3	30.4	6.592
Germany	7.2	29.8	6.985
Greece	-	23.6	5.287
Hungary	5.8	26.4	5.758
Ireland	6.8	30.0	7.021
Italy	7.6	28.1	6.223
Latvia	-	17.1	5.940
Lithuania	-	21.0	6.149
Luxembourg	-	13.2	7.090
Malta	-	29.0	6.726
Netherlands	7.6	35.3	7.488
Poland	7.0	27.5	6.182
Portugal	6.0	24.8	5.693
Romania	6.3	28.8	6.070
Slovakia	6.8	28.2	6.198
Slovenia	7.0	24.6	6.118
Spain	6.9	36.0	6.354
Sweden	7.7	28.0	7.343
United Kingdom	7.3	31.9	7.054

Source: Customized according to: World Database of Happiness, Happy Planet Index 2016, World Happiness Report 2019

The data from the World Database of Happiness and the World Happiness Reports are consistent and yield the same results, taking into account the lack of data on the seven EU countries. According to the planet's happiness index, Denmark and the Netherlands had the highest life satisfaction and Bulgaria the lowest, but the planet's happiness index takes into account some other previously mentioned indicators, so the results are not the same as the world happiness base and the world happiness report.

4. Conclusion

The main topic of this paper is the quality of life that can be defined as the degree of well-being and satisfaction of an individual with his own life as a whole. Quality of life is determined by objective indicators (gross domestic product, unemployment rate, inflation rate and balance of payments), and subjective indicators (happiness, life satisfaction, satisfaction with health, education, and life in general). Subjective indicators are measured using various indicators such as gross national happiness, the global happiness base, the European Quality of Life Survey, and others. The paper sought to point out the great differences in happiness and well-being among the EU Member States and the various factors that influence this. The work is limited in terms of the latest available data, so it was not possible to access the older data of the World Database of Happiness, but only the latest available, but they are not complete since they are available for only 82 countries.

Studying the selected indicators and measures of well-being and quality of life of the population in the European Union and their research results, the conclusion is that the results are objective and reliable, but not satisfactory. In addition to a good study of the obtained results, it is necessary to implement them and improve the parameters that are not at a satisfactory level. It is necessary to introduce changes that will provide residents of the entire European Union with fewer working hours, which averaged 37.1 per week in the EU so that people have more time to do household and family duties. Also, the lower level of satisfaction is contributed by the low level of employment due to which residents are not able to secure better living conditions, both tangible and intangible. For employment to be higher, it is necessary, in addition to creating new jobs and opportunities for advancement, to ensure a lower level of the low-educated part of the population, but also to encourage vocational occupations that are dying out day by day. It is a sad fact that the people of the European Union (do not) believe in the legality of the system and politics, and one of the proofs that confirm the fact that the European Union is not doing everything it could and should show that more than half of the population does not believe in the European Parliament. behaves. In addition to material and monetary indicators, great attention should be paid to the environment and the pollution caused by residents. Smog, pollution of natural waters, and impurities of natural beaches and deaths of animals due to plastic waste are becoming more common. Preservation of the natural environment should be one of the most important goals of the European Union for the times to come because the environment and natural features and beauties improve or in this case worsen the quality of life of residents.

Some EU Member States have been stable for years and at the very top of the results until some move from the back, which is largely due to the state policy of member states, which needs to be improved and emulate the countries that have been at the top for years. A timely reaction to the obtained results and a more serious understanding of the problem of (dis) trust in the European Parliament is needed for citizens to see other advantages of the European Union besides the possibility of easier travel to other Member States in search of a better life. In addition to studying these results and testing, it is necessary to "listen" to citizens, regain lost trust and do what they ask of the European Union, and that is a higher quality of life. Furthermore, given that welfare measures affect the competitiveness of countries, it is necessary to redefine the competitiveness that should be the ability of the country (region, location) to achieve higher goals for citizens than GDP. Measures of subjective well-being could and should certainly be the starting point for this.

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A scientific paper

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THE IMPORTANCE OF CROSS-FUNCTIONAL COOPERATION FOR BUSINESS GROWTH ON THE EXAMPLE OF A LARGE AGRICULTURAL ENTERPRISE

ABSTRACT

One of the main goals of the management of companies focused on production activities is the constant growth and development of the company and the emphasis is not necessarily on financial indicators. Some of the more important objectives include increasing the number of employees, introducing a new product line, greater employee education, and increased cooperation between functions. Traditional and agile management are often mentioned approaches that are applied in companies, and it is important to understand their theoretical framework in order for them to be adequately applied in business growth. Numerous economic theorists, in addition to emphasizing the importance of management, quality communication and process execution, also point out cross-functional knowledge and communication as vital in achieving the company's business goals. All functions within the company meet with an extremely dynamic economy and an environment in which they perform many day-to-day activities
In this paper we will use the example of a large agricultural company to describe the cross-functional collaboration during the process of introducing and developing new labels or modifying existing labels for finished products that are exported to the foreign markets. The empirical research offers an overview of the current situation on quality and the level of cross-functional cooperation between employees working in procurement, sales, production, logistic department and warehouse operations. Based on that study, adequate measures and activities will be presented, which could improve communication between key teams for the development of new products at no additional cost. The ultimate goal of developing cooperation between various functions is the long-term improvement of the company's business operations.

Keywords: *communication, development, growth, industry, new products.*

1. Introduction

Growth and business development is one of the main strategic goals of any market-oriented company. The aforementioned goal is extremely broad and must be broken down into a numerous smaller goals and strategies in order to achieve it. Of the factors that influence on the growth and development, human capital is one, if not the most important resource of any company. Whether is it a small, medium or large company, communication between all employees is the key for performing even the simplest of activities. All employees together create an organizational culture that is specific to each company, and it affects all other activities. Communication makes the foundation of all activities; it is important to develop assertive and professional communication among employees. The importance of cross-functional cooperation is seen through a number of day-to-day projects or processes where employees from different sectors work on together. Budget planning, development of the new products, modification of existing products, development of new services, response to complaints to customers or suppliers and process reorganization are just some of the activities that cannot be done by only one sector without involving at least two or three of the minima of sectors. The research related to cross-function cooperation and communication in general included employees of procurement, sales, production, logistics and the warehousing operations from the territory of the Republic of Croatia. The conclusions are presented in the part of the paper containing the results and discussion. In addition to the above research, the procedure will be presented when developing new labels or modifying existing labels for finished products that are exported to the foreign markets, on the example of a large agricultural company. The procedure will be explained in detail, analysed, the shortcomings will be shown and what would be the adequate measures for the improvement and acceleration of the procedures. For the hypothesis to which this paper will provide an answer through the theoretical and practical part is: cross-functional cooperation is one of the key factors for company growth and operating business, and awareness of the importance of cooperation is highly developed amongst the employees of procurement, sales, production, logistics and warehousing business.

2. Previous research

The study included 356 retailers from the largest supermarkets in the Western Balkans. In this study Končar, Miloš Marić (2015) says that the results showed statistically significant correlation between the analysed indicators and countries, and served as the basis for defining the model of employees' job satisfaction in the Western Balkans retail sector. Result of this paper is that managers can perceive the impact of the analysed indicators – salaries and benefits, working conditions, reward system, career development, job security, collegiality and communication to create a business environment in which employees will be satisfied, more devoted to work and more productive.

Pološki Vokić and Grizelj (2007) conducted the research which was related to the impact of additional education for the development of Croatian companies. The first part of the research has comprised the state of education and its development in the Republic of Croatia on the basis of five parameters; afterwards were presented the results of a statistical analysis of the connection between the state of education and development in Croatian organisations and their characteristics. Comparison of the results gained with this research with indicators of education and development of the previous researches has shown that organisations in Croatia improve its practice of education and development, but they are still far below the level and importance of the education and development that is available in the successful global organizations. Also, the study showed that in the domain of education and development in Croatia does not significantly lead those organizations from which it was expected to do so, therefore, those

larger organisations in a foreign property, manages the propulsive activities, i.e., in those organisations with younger and more educated work force. From there arises, as theoretically states, the empirical findings of this paper that points to the need for major investments in Croatian organizations in education and development of their employees, not only in order for the establishing the competitiveness in the domestic market, but also for the achievement of competitive advantages in all more integrated European and world markets.

"The importance of adjusting the level of interaction and cooperation between sectors according to the urgency of the situation is suggested, with special emphasis on the logistics sector. Situation characteristic of low interaction and low collaboration would be where only the logistics department is involved. Thus, situation in this cell would represent those activities which the company considers department specific. High interaction and high collaboration characterize situations where critical products/orders are being shipped, products are customized to customer specifications, and/or many order exceptions can occur" (Kahn, Mentzer, 1996).

"Study indicates that product competitive advantage is an important variable that explains why marketing manufacturing integration may be linked with greater product success. The findings support the theory that integration leads to greater product design quality, where design quality is a holistic concept comprised of both product performance and conformance attributes. This benefit is apparent in each of the four stages of NPD that we studied, though the direct benefits appear larger in technical development and subsequent stages" (Swink, Song, 2007).

"When working relations between marketing and logistics are poor, the coordination and communication that is crucial for the provision of optimal distribution service may be lacking. In addition, personnel may divert considerable attention and effort from serving customers to internal issues like turf protection, and deflecting blame for errors and shortfalls" (Ellinger, 2000).

"The results indicate that as inter-organizational implants depend on employees at their own organizations to complete their work, they are more likely to engage in face-to-face modes of communication. This finding suggests face-to-face communication mediates the relationship between intra-organizational task interdependence and cognitive congruence" (Grawe, Ralston, 2019).

On the basis of the conducted research on a sample of 800 directors from 19 countries, Ćoric and Musa (2015) investigated the level of communication impact on the organizational effectiveness. The satisfaction with the internal communication has been observed, which has been defined as a multidimensional structure and was found that on average the lowest level of satisfaction the surveyed members of the organizations stated as a data dimension about their personal success (feedback information's). For the purpose to strengthen their satisfaction with the feedback information's, and in accordance alongside the its total effectiveness, organizations must develop internal communication programs by which they will further promote two-ways relationships among participants in internal communication, and then to incite their openness and transparency. Of all eight dimensions were characterised with the total satisfaction with internal communications, the highest level of integration manifests the communication climate, and a high correlation level implies the dimensions of personal data pertained to personal success, by which it has been confirmed the results of the previous researches.

3. Company organization and the organizational culture

Company's organization is closely related to organizational culture. Large companies can have guidelines created for the organizational culture, but culture is often created by the influence of

all employees when performing a number of joint activities. For all of the employees are key to the quality organization of the company's business, but they have an extremely important role when creating a quality organizational culture. "Organizational culture refers to the way employees perceive the characteristics of an organization's culture, but not their preferences for those characteristics. Most of the large organizations have one dominant culture and numerous groups of subcultures" (Robbins, Judge, 2010, 575). "Managers must always be aware of the status and the use of the organizational resources. These resources that were made of all available assets for activation during the production process, can be classified into four basic types: human resources, monetary resources, raw materials and the capital" (Certo, Certo, 2009, 8). Human capital is always mentioned in the economic literature as an extremely important key factor in the organization of a company. For the human resources as a function, they have the task of a proper organization of the processes, attracting, retaining and educating quality employees. In practice, the situation is not so simple, especially in large companies, where a team of five to six human resources employees is responsible for 1000 employees. Therefore, the importance of each employee for the growth and development of a healthy organizational culture is emphasized. "The organizational culture is interwoven into all the activities of the organization. It affects the way of organization, type of structure and degree of decentralization, approves the use of authority, the type of power that has been used, the degree of formalization, standardization of procedures, method of control, resource allocation, management of human potential, scope and method of business planning, strategy and others" (Sikavica, Bahtijarević-Šiber, Pološki Vokić, 2008, 414). Everyday processes, strategic and operational management decisions, business results and all other key factors incline for a positive business outcome are influenced by the organizational culture. Often many procedures within the company are attached to the influence of the current culture, i.e., it can be concluded that the culture directly affects the operational organization of business processes within the company. ''It's the best situation when leaders can change their styles depending on the feedback they receive from the environment. In deciding which style best suits a particular context or purpose, consider which style best suits you as well as the needs, expectations, and goals of the organization or a group'' (Rouse, Rouse, 2005, 206). The great number of the strategic plans fail when tactical details have not been included. After setting up of the long-term / short-term goals and defining strategies, plans must be implemented by people. Long-term / short-term goals and strategies must be broken down into smaller elements in order to be achieved on time and without unnecessary effort (Potter, 2008, 62). Managerial styles, whether of operational or strategic management are based on feedback from the environment, and even more so on the feedback within the company.

4. Importance of improving internal communication for the company growth and development

The importance of internal communication in achieving any of the business result is unquestionable, but it is important to create such an atmosphere in which communication acts in a quality, timely and in accurate manner. "The fact is that recently there has been more and more talking about the so-called Integrated communications, whose basic goal is to achieve the maximum possible synergy from well-coordinated, systematically managed and thoughtful management of business communications. Integration implies the meaningful that is complementary to all tools of public relations with all tools of marketing" (Hodak, Holy, 2012, 44). Synergy between sectors is undoubtedly the basis of any activity within the company, therefore it is not enough that communication only exists, but it must be at the highest possible level. "More and more companies are paying special attention to sellers, as the reputation and success of the company, both with intermediaries and end customers often

depend on them. Sales instructions are specially prepared and contain key information about the company, policy, mode of operation, strategies and products. It often goes so far as to give the structure of materials, production processes, prices, sales techniques and assistance that the seller must offer to the buyer" (Kesić, 1997, 246). Sales is in charge of communication with the customers, but the basis for quality sales communication is quality internal communication within the company. All sectors involved in production must communicate clearly and precisely in order for the final products or services to be delivered to the customer on timely manner and in the agreed quality.

Modern technology helps maintain the speed and transparency of communication within the company, but also spread to the external communication with the customers, suppliers and other partners. Technology can always help, but it can never completely replace direct communication. Business communications also have bad characteristics especially when communication is conducted through modern technologies rather than through direct contact. They act weaker in relation to the direct personal contact. When a misunderstanding has taken place, it sometimes takes a long time to resolve the dispute. However, these weaknesses do not significantly affect the importance of business communications for business operations, especially in the conditions of automation of office operations (Kliment, 1996, 13). "The communication plan is the core of strategic communication management. It aligns the communication activity with the mission, with the long-term and short-term goals, strategy and tactics of the organization in a measurable way" (Potter, 2008, 72). Internal communication also affects the external communication of the company, so the negative and positive influences within the company must be properly interpreted towards external associates with quality external communication.

The organizational culture of the company must create a positive atmosphere for holding productive meetings within the sector, and also if representatives of several other sectors are found to cooperate. Through a few common minutes, numerous misunderstandings can be resolved, common steps can be agreed for future activities, existing challenges can be resolved and any conflict situations can be resolved. "At the very mention of the word meeting it has been found as repulsive. Namely, this social form was often used to inform subordinates in the organizational hierarchy. Although information's about work tasks and operations alone cannot always be connoted negatively, it should be said that communication as an interactive communication process was often missing when communicators, among other things, influence changes in attitudes and opinions by the power of argument" (Perinić, 2008, 102).

By means of the joint cooperation of all sectors increases innovative thinking and innovative solutions. This thesis is especially emphasized in large companies, where traditional organization is represented. Smaller companies are more agile, but there still must exists extremely high cooperation among the employees. "Innovation is almost always an accidental result of human interaction among employees, when they are not forced to come together by an artificial construct such as meetings or a work unit. It is more likely that something innovative will happen when leaders create an environment and develop a culture that encourages interaction" (Holtz, 2008, 200).

Adaptation to the situation and to the interlocutors is the basis of a long-term and quality communication within the company, regardless of its size. It is always taken into account that all people are different and that they react differently to tasks, comments and criticism. A professional approach to each person with an emphasis on the development of social intelligence can be a key basis for defining quality operational communication between the sectors. "Communication competence consists precisely in the ability to recognize situations and adapt the style and content of the performance to that specific situation. But the condition for the abovementioned is that the speaker and the other participants must be sure about the definition of the situation" (Leinert-Novosel, 2012, 126). Meetings and conferences subsist

from the matter of discussions. In the meetings participate the participants with different opinions. New aspects are being found. Sometimes the surprisingly new solutions are found" (Schneider-Flaig, 2016, 161).

5. Research methodology and statistical data processing

In order to investigate the level of cross-functional cooperation in companies through primary research, the authors have used the LinkedIn social network and personal contacts to directly target employees found in procurement, production, sales, logistics and warehousing on the territory of the Republic of Croatia. A survey questionnaire was created that consist of a section related to employee demographic information, such as their gender, age, the length of service, education, and the sector in which the respondents are employed. The second part of the survey questionnaire consists of specific questions related to everyday cross-functional communication in the respondents' companies. A total of six questions are related to specific situations within the company such as the number of meetings between sectors in the company, the average daily communication with other sectors within the company, proposals for activities that improve cooperation between teams, ways to resolve conflicts within the company, and the ways of rewarding employees and factors that influence the employee's motivation. Direct and open questions were avoided, and the questionnaire consisted of a combination of the Likert scale and closed questions. By the method of primary research, i.e., by direct interviewing of the employees, it has led to the procedure of changing and creating a new label or packaging for the foreign markets on the example of a large agricultural company.

Descriptive data refer to the examination of the arithmetic mean and standard deviation of the respondents' answers in the sample. The arithmetic mean is a measure of the central tendency that represents a particular set of data, while the standard deviation represents the average deviation from that number. Other questions are presented through the frequency of answers and what is the percentage in relation to the total number of observed sectors. . In Table 1 is shown the structure of respondents by gender, age, length of service and education.

Table 1: Sample structure

		N	**Percentage**
Gender	Male	72	62.1%
	Female	44	37.9%
Age	25-34	34	29.3%
	35-44	49	42.2%
	45-54	29	25.0%
	55-64	4	3.5%
Length of service	0 - 10 years	33	28.4%
	11-20 years	51	44.0%
	21-40 and more	32	27.6%
Education	Elementary School	1	0.9%
	Secondary education (SSS)	32	27.6%
	Higher education / professional study	30	25.9%
	University degree / university study	47	40.5%
	Mr. Sc. / PhD	6	5.2%

Source: authors

The study was conducted on a sample of 116 participants (62,1% male and 37,9 % female participants) from 25 to 64 years of age. The largest number of participants is between the 35 and 44 years of age (42,2 %). Most of those employees have 11 to 20 years of work experience (44%) and those who have a university degree (finished college, 40,5 %).

6. Research results

Before the beginning of the research, the goal was set to investigate the level of cross-functional cooperation between different sectors in companies that were oriented to production activities in the real sector. The LinkedIn social network and direct communication via e-mail were used to contact employees who specialize in procurement, sales, producing, warehousing and logistics. Also was investigated the procedure of making new labels or packaging for foreign markets, on the example of a large agricultural company In Figure 1 is shown the percentage of sectors from which respondents come.

Figure 1: Sectors in which respondents are employed
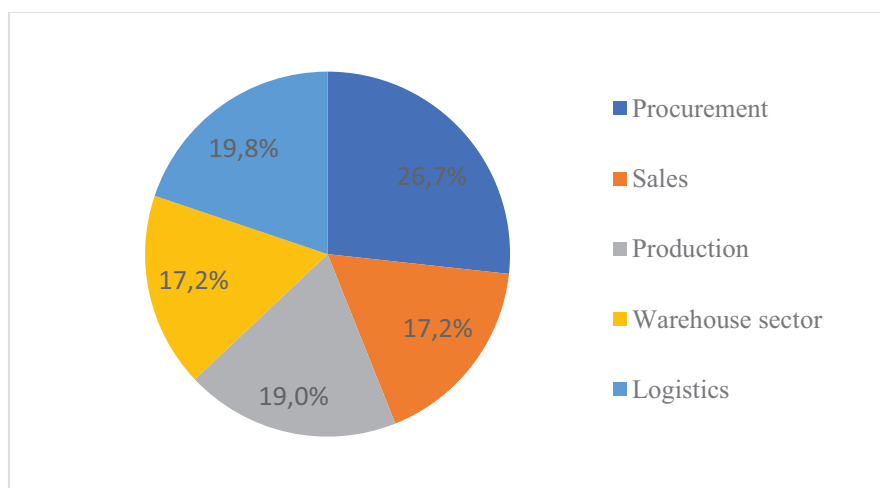
Source: authors

Respondents who participated in the survey work in the sectors of procurement, sales, production, warehousing and logistics (representation by sector from 17 to 27%). On Figure 2 is shown the dynamics of communication between sectors.

Figure 2: Frequency of meetings between sectors

	Procurement	Sales	Production	Logistics	Warehouse sector
■ Several times a week	22,6%	40,0%	31,8%	21,7%	20,0%
■ Once a week	51,6%	25,0%	50,0%	47,8%	55,0%
■ 2-3 times a month	12,9%	25,0%	4,5%	26,1%	0,0%
■ 1 per month	9,7%	10,0%	13,6%	4,3%	25,0%
■ Meetings are not required	3,2%	0,0%	0,0%	0,0%	0,0%
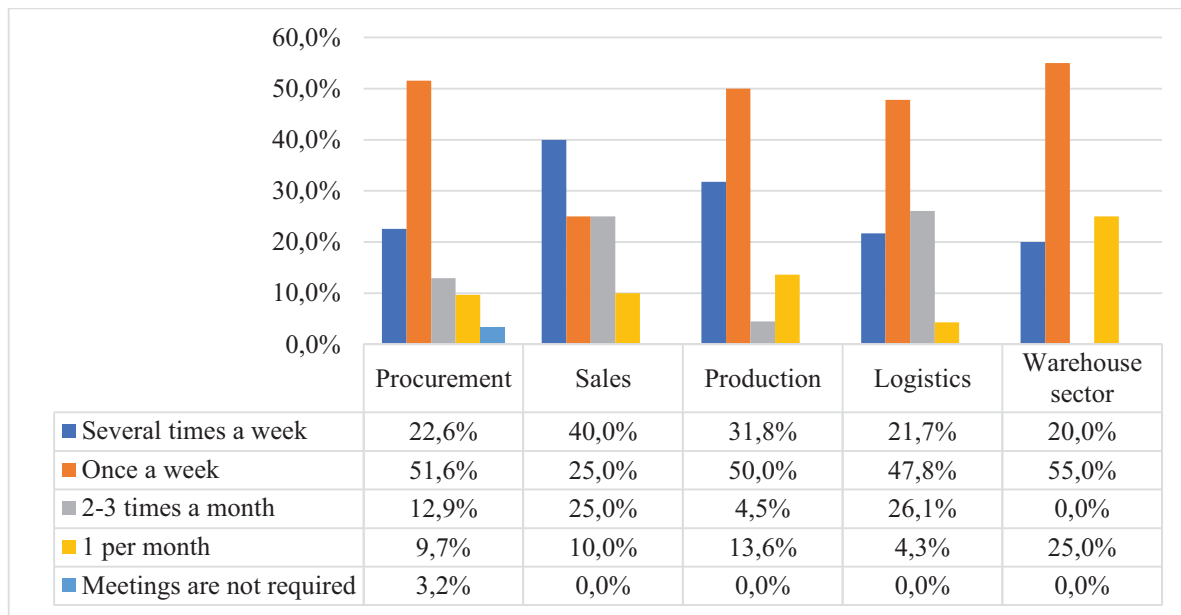
Source: authors

Employees in the sales sector believe that meetings between functions should be held several times a week (40%) to improve communication within the company, while employees in other sectors (procurement, manufacturing, logistics and warehousing) response that meetings should be held once a week. Respondents confirmed awareness of the importance of constant communication and meetings for the development of cross-functional synergy. On Figure 3 is shown the average communication of respondents with other functions.

Figure 3: Average communication with other functions

	Procurement	Sales	Production	Logistics	Warehouse sector
■ 1-2 times	35,5%	15,0%	18,2%	13,0%	5,0%
■ 3-5 times	12,9%	40,0%	40,9%	47,8%	50,0%
■ 6 and more times	48,4%	45,0%	31,8%	39,1%	45,0%
■ I rarely communicate with colleagues outside of my sector	3,2%	0,0%	9,1%	0,0%	0,0%
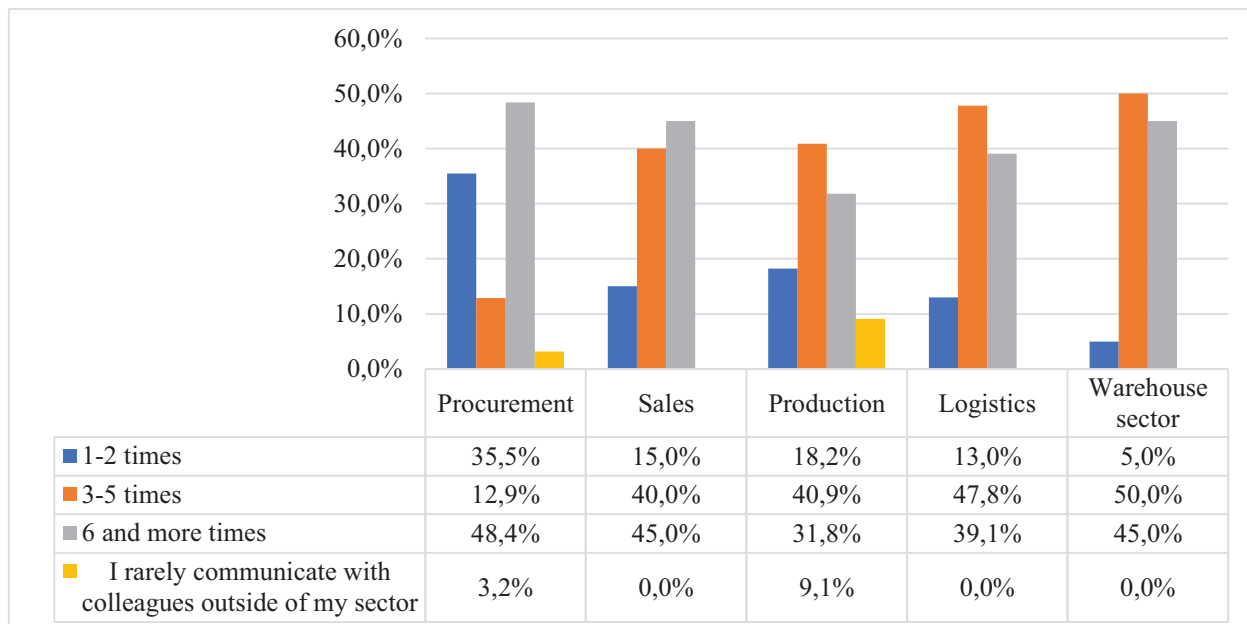
Source: authors

Research participants from the manufacturing, logistics and warehousing sectors quote that they communicate 3 to 5 times a day with colleagues from other functions within the company, and those from the purchasing and sales sector 6 or more times a day. On Figure 4 is shown which activities employees selected as the best by sector for improving cross-sector activities.

Figure 4: Cited activities for the improvement of cooperation between sectors
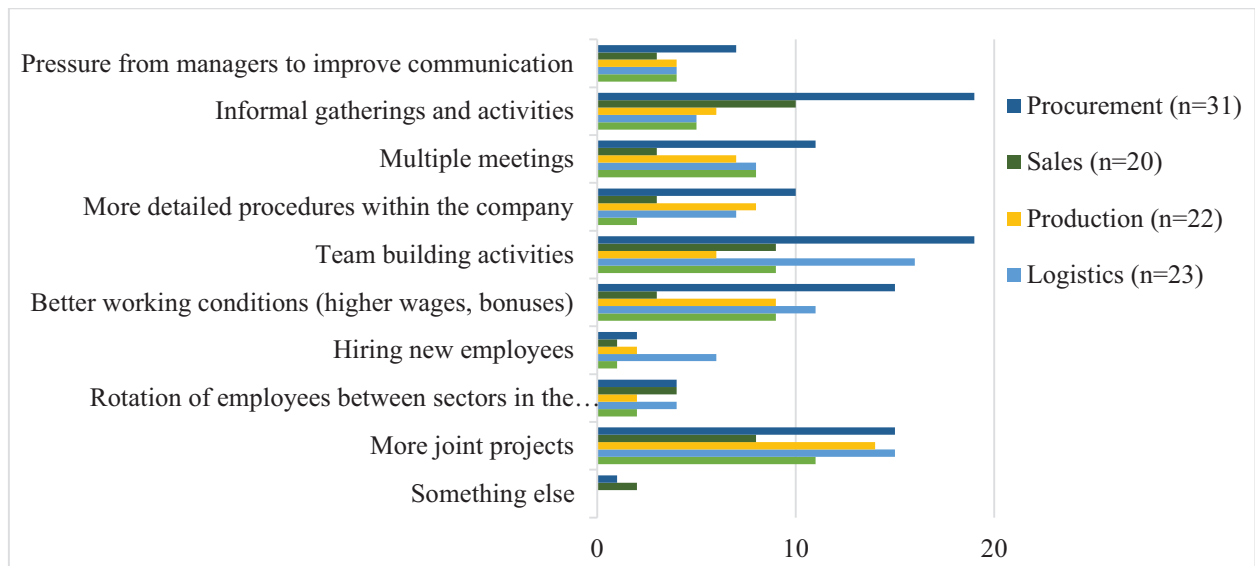
Source: authors

Employees in the procurement sector state that to the greatest extent informal gatherings and activities, team building activities, more joint projects and better working conditions would contribute to the improvement of cooperation between sectors / functions in the company. Employees in the sales sector believe that informal gatherings and activities, team building activities and more joint projects would improve cooperation between sectors / functions in the company. Employees in the manufacturing and warehousing sector state that more joint projects, better working conditions, more meetings and team building activities would improve cooperation between sectors / functions in the company. Employees from the logistics sector consider team building activities, more joint projects and better working conditions to be the most important for improving cooperation between sectors / functions in the company. In Table 2 is shown which ways to resolve conflict situations the respondents, according to the sectors, have chosen to be the best.

Table 2: The best way to resolve conflict situations within a company

	Sector									
	Procurement (n = 31)		**Sales (n = 20)**		**Production (n = 22)**		**Logistics (n = 23)**		**Warehousing (n = 20)**	
	ƒ	*%*	*ƒ*	*%*	*ƒ*	*%*	*ƒ*	*%*	*ƒ*	*%*
Conflict is resolved through conversation and agreement	28	90,3	20	100	22	100	23	100	20	100
Ignoring the conflict until the situation calms down	1	3,2	2	10	0	0	0	0	0	0
Involvement of managers / directors in conflict solving	9	29	4	20	10	45,5	11	47,8	8	40
Complaint to human resources	0	0	0	0	2	9,1	1	4,3	2	10
Change of a workplace	0	0	1	5	0	0	0	0	1	5
None of the stated	0	0	0	0	0	0	0	0	0	0

Note: *ƒ* - frequency
Source: authors

Employees in all surveyed sectors of the company do agree that the conflict is resolved through conversation and agreement. Those employed in the manufacturing and logistics sectors in the greatest extent, when compared to the other surveyed sectors, stated that executives and directors are to be involved in conflict resolution (45.5% of employees in the manufacturing sector and 47.8% of employees in the logistics sector). Almost all surveyed employees agree that changing jobs or ignoring conflicts are not the best ways to resolve conflict situations in a company. In Table 3 is shown which methods respondents consider to be the best when increasing the volume of work.

Table 3: Rewarding employees when tasks have been increased

	Sector									
	Procurement (n = 31)		Sales (n = 20)		Production (n = 22)		Logistics (n = 23)		Warehousing (n = 20)	
	f	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*
Increase of salary	28	90,3	15	75	20	90,9	20	87	17	85
Public recognition / praise of superiors	13	41,9	9	45	8	36,4	15	65,2	8	40
Better / new laptop	3	9,7	1	5	1	4,5	3	13	0	0
New official mobile phone	3	9,7	3	15	2	9,1	2	8,7	0	0
Possibility to use an official car	4	12,9	3	15	3	13,6	4	17,4	1	5
Trainings and seminars at the expense of the company	20	64,5	12	60	13	59,1	17	73,9	8	40
Paid doctorate / master's degree	9	29	3	15	5	22,7	2	8,7	0	0
One-time financial stimulation	9	29	8	40	6	27,3	13	56,5	10	50
Promotion to a better job	20	64,5	8	40	12	54,5	11	47,8	9	45
Additional days off	4	12,9	8	40	2	9,1	4	17,4	7	35

Note: *f* - frequency
Source: authors

Based on the obtained research results, it can be concluded that employees in all surveyed sectors are mostly motivated by increase in salary, what is the case in the procurement and production sectors. In the procurement and production sectors, employees are mostly motivated by trainings and seminars at the expense of the company and promotion to a better job. Employees in the sales sector are most motivated by trainings and seminars at the expense

of the company, public recognition and praise from their superiors. In the logistics sector, employees are mostly motivated by public recognition and praise from their superiors, education and seminars at the expense of the company, and one-time financial incentives. Those employees in the warehousing sector are most motivated by one-time financial stimulation and promotion to a better job. In Table 4 are shown all the factors that affect employee motivation with respect to the sector they're coming from.

Table 4: Factors that affect employee's communication with respect to sectors

	Sector									
	Procurement (n = 31)		Sales (n = 20)		Production (n = 22)		Logistics (n=23)		Warehousing (n = 20)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Communication between functions / departments / sectors is fast and timely	4,1	0,91	4,4	0,5	4,09	1,01	4,22	0,79	3,55	1,14
Meetings between functions / departments / sectors are held regularly	4,1	1,14	3,8	1,24	3,73	1,42	4,26	0,91	3,25	1,25
Good communication between functions / departments / sectors brings better business results	4,61	0,72	4,8	0,41	4,77	0,42	4,87	0,34	4	1,25
Clear procedures for cooperation are established (e.g., development of the new products, managing of complaints, procurement procedures)	4,35	0,55	4,45	0,82	4,18	1,01	4,35	0,71	4,05	1,31
The set rules and procedures are regularly followed	4	0,81	4,25	0,78	4	0,92	4,3	0,63	3,95	1,19
Functions / departments / sectors are equally open for communication, assistance and cooperation with other functions	4,1	0,87	3,9	1,21	3,95	1,09	4,22	0,73	3,85	1,22
Managers / directors encourage quality and regular communication with other functions	4,06	0,99	4,15	0,98	4,05	1,17	4,48	0,79	3,5	1,31
The Sector / service that I am a part of has a great team atmosphere	4,23	1,05	4,45	0,75	4,32	0,64	4,35	0,93	3,9	1,25
The focus is always on solving the problem: it's not on the person who caused the problem	3,94	1,2	4,1	0,85	3,86	1,03	4,09	1,16	3,3	1,34
Poor communication affects motivation and goals achievement	4,71	0,69	3,95	1,5	4,59	0,95	4,22	1,16	4	1,25

Source: authors

All respondents mainly agree, in whole or partly, that good communication between functions / departments / sectors brings better business results, which is a confirmation of the set hypothesis. Those employees in the sales sector mostly believe that clear procedures have been set for cooperation in the company and that their sector has an excellent team atmosphere. Employees in the procurement sector mostly believe that poor communication affects the motivation and achievement of goals, and those in the logistics sector reasoned that managers / directors encourage quality and regular communication with other functions. For the individuals employed in the warehousing sector they at least agree with the above statements in relation to the employees in other sectors.

7. Example of cross function cooperation on the example of a large agricultural enterprise

A large agricultural enterprise with more than 1.000 employees in its business adheres to a number of procedures, due to the fact that in the organizational structure exists a sector that control processes, rules and procedures. One of the most important and most dynamic procedures in which an extremely large number of sectors participate is the procedure of creating or changing labels or packaging for the new markets. Due to their dynamics, sales, marketing, production, quality management service and procurement are included.

The request for a new market or product is sent by the responsible person from the sales department to the head of product development and quality control or to the responsible person in the plant where the request for the opening a new market is specified. Head of the product development and quality control or the responsible person in the plant prepares the text of the declaration in line to the EU legislation, and then it submits it to the sales department.

If the head of product development and quality control, or the responsible person in the plant, or in the sales department have a declaration written in the required language, then they send it from the sales department for certification to the distributor. If there is no declaration in the language of the requested market then it is sent in English to the distributor or buyer for official translation. If the distributor or customer does not officially translate the declaration then the responsible person in the marketing department send declaration for an official translation. The responsible person from the marketing department sends an official translation to the responsible person in the sales department.

The responsible person in the sales department sends for verification the text of the declaration to the distributor or buyer, which confirms the compliance of the declaration with the valid legislation of the requested market. The certified declaration from the distributor is sent by the responsible person of the sales department to the head of product development and quality control, or to the responsible person in the plant who forwards it to the responsible person in the marketing department, together with the additional requirements (for translations, markings, etc.). The declaration shall state the method of application, dimensions and quantities of labels or packaging.

The head of product development and quality control or the head of the management system or the responsible person with the marketing should agree on the colour, dimensions of the label (sticker) or packaging, the place of application of the label, etc., while arranging the quantities of labels or packaging with sales.

The responsible person in the plant or the management system manager sends a request form with the ordered quantities of labels or packaging to the procurement department.

The Purchasing Marketing Department has defined suppliers for purchasing of certain types of labels or packaging. The marketing department sends declarations to the supplier and information to the procurement department that the project has been initiated with a specification of the type of label or packaging, its dimensions and quantity.

Marketing with the supplier works on the preparation of labels or packaging which is sent for certification to the head of product development and quality control, or to the responsible person in the plant, and the responsible person in the sales department in cooperation with the distributor or customer makes the final verification of declaration, that is, it provides a check-up for a graphical preparation of a label or the packaging shall match the certified declaration and then send a feedback to the marketing department.

After certification by the product development and quality control manager or the responsible person in the plant and the distributor or the customer, the marketing department confirms the preparation of labels or packaging to the supplier, and forwards the information on for the final certified preparations to the purchasing and sales departments.

The procurement specialist sends the purchase order to the supplier with a certified and prepared labels or packaging that has been delivered to them exclusively by the responsible person in the marketing department.

8. Conclusion

The importance of cooperation between sectors has unquestionably proved to be one of the most important factors for the growth and development of the company. Primarily, here it can be concluded that the human capital possessed by the company is an extremely important issue for creating a quality business climate and organizational culture within the company. It is the organization and business climate that encourage employees for quality, timely and professional cooperation in all business areas. The importance of this cooperation is extremely emphasized in large companies in which there are many separate sectors that must cooperate and by no means cannot perform such activities independently. The task of management is to create clear procedures, organize their own teams, motivate and to guide employees through daily activities and challenges. The research has confirmed the set hypothesis: cross-functional cooperation is one of the key factors for company growth and operating business, and awareness of the importance of cooperation is highly developed among employees of procurement, sales, production, logistics and warehousing. The employees that were surveyed are from the territory of the Republic of Croatia, originating from the procurement, sales, production and warehousing sectors and consequently, the hypothesis was confirmed that cross-function cooperation at the company level is extremely important. All respondents agreed that meetings between functions were required for at least once a week, and preferably several times a week. Employees of all sectors have regular daily communication with other functions, which shows the importance of educating employees about timely and assertive communication. Informal gatherings and activities, team building activities and several joint projects proved to be the most important factors according to the respondents, to improve cooperation, and their answers reflected that employees are aware of the importance of encouragement of the good relations between the sectors. Conflict situations in any company are inevitable, but they can be prevented by the proper reaction from superiors and employees themselves. As a rule, all situations can be resolved through conversation and agreement, but in the case of more serious conflict situations, it is necessary to involve managers or superiors. On the example of a large agricultural enterprise, it has been shown how a seemingly simple procedure for changing or creating labels and packaging for foreign markets can cover several sectors, and how many steps it contains before a new label or packaging is ordered. It is this procedure that shows the importance of communication, respect for structure and the importance of a quality organizational climate that encourages quality cooperation between sectors.

Previous studies have confirmed the importance of focusing on the activities and strategies of enterprises when developing cross-functional cooperation. In addition to knowing the

importance of cooperation between sectors, the mutual link between this paper's conclusions stated that is extremely important to invest in education of employees, what in a long term improves the quality of the operating business, and directly improves the cross-functional cooperation. The important thing is to develop a set of measures that employees will recognize, and who are directly motivated to a better cooperation with other employees, but also the general construction of a cultural support, motivation and improvement of doing business among employees. The contribution of this work of science is a conclusion that cannot be carried out with unique strategy and process improvement of the cross-function cooperation at the level of the company, but that each company must analyse the daily operational processes at the level of each sector and to adapt motivational and organizational strategies within each sector. Motivational factors are mutual, so do the ways of resolving conflict situations and awareness about the importance of individual factors for the development of cross-functional cooperation, but each factor differently effects on individual sectors, and the task of each manager is precisely to recognize the abovementioned factors and to get them correctly organized. Future research should provide answers on whether a crisis situation such as a pandemic has an influence on the factors that have effect on cooperation between sectors within enterprise and which are detailed reasons for the differences in the perception of the cross-function cooperation between individual sectors within the enterprise. The limiting factor during the research is a smaller number of respondents, because of the targeted research towards the experts on the area of the Republic of Croatia, from the areas of purchasing, sales, production, warehouse operations and logistics. It's difficult to collect a well-balanced number of respondents in relation to the length of service and their age, in order to bring relevant conclusions to the aforementioned demographic factors. The number of companies that are exclusively oriented towards the agricultural production on the territory of the Republic of Croatia is rather small, and because of that it was not able to carry out targeted surveys of employees within these sectors that would encompass a relevant number of respondents. Direct research was conducted on the example of a large agricultural company, on the example of modification / creation of the label or packaging for the foreign markets. A small number of surveys were conducted in line with this topic of this paper, i.e., the opinion of employees from the real sector towards the sectors they come from was not investigated through the direct communication or by means of the survey. Because of that it was difficult to make a detail comparison of this work with other papers, but the conclusions were brought on the basis of the common links in the research.

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FACTORS INFLUENCING STUDENTS' BEHAVIORAL INTENTION TO USE DIGITALLY-SIGNED CREDENTIALS

ABSTRACT

Given the novelty of the technical framework for digitally-signed credentials developed in 2020 and low adoption rates in higher education, this is one of the first research studies focusing on adoption issues of digitally-signed credentials. Other significant contributions of the study are acknowledging the national-level context for the implementation of the framework for digitally-signed credentials in higher education, and the focus on the perspective of credential owners, i.e. learners or students - the largest group of future users. As users who receive their credentials, students can store, organise and share their digital credentials in their Europass library, e-Portfolio or other platforms and wallets. In that regard, a well-known model of acceptance and use of technology (Unified theory of acceptance and use of technology, UTAUT) is used to examine their intention to use the digitally-signed credentials. The conceptual model is based on the UTAUT model factors, extended with two additional factors – trust and perceived risk. Empirical data needed to validate the model and examine the research hypotheses (based on relationships between Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Trust, Perceived Risk and Behavioural Intention) were collected using online questionnaires administered to students in a controlled environment. A structural equation modelling (SEM) analysis based on the feedback from over 300 participants is presented in the paper. Based on the review and the results, the study deliberates the potential and the conditions for effective implementation of digitally-signed credentials in higher education institutions and identifies limitations and future research directions.

Keywords: *Digitally signed credentials, UTAUT, Behavioural intention, Higher education, Students.*

1. Introduction: Digitally-signed credentials

One of the significant opportunities and challenges that digital transformation brings to education and training today is developing a framework for digitally-signed credentials. The framework is addressed explicitly in strategy-level plans at the European level and identified

as one of the priorities (specifically, developing the Europass Digital Credentials Infrastructure). With the new plans regarding the uptake of digitally-signed credentials by end-users, mechanisms for adaptation of certified versions of learners' credentials are explored, in addition to, or instead of the paper-based credentials. Herein, the benefits of using the novel framework are presented and potential adoption issues that this paper specifically aims to address.

Corradini et al. (2007) explain the differences between digital identity and digital citizenship and introduce the term digital credentials representing signed statements concerning attributes of a subject. A digital credential serves the purpose of communicating a statement made by a third party about a subject in a trustworthy manner. With the growing number of study programs offered in higher education institutions and the ever-increasing number of education providers, a need to issue digitally signed and certified versions of the credentials arises, in addition to or instead of the paper formats (Hijden, 2019). The academic achievements of students completing a degree are traditionally recorded and communicated through testamurs and academic transcripts. However, the nature of these is that they provide limited opportunities for graduates to demonstrate the skills and abilities associated with their graduate identity or worldview (Fain, 2014). By using digitally-signed credentials in higher education, numerous benefits have been identified for various higher education stakeholders by policy-makers (e.g. Europass Europa.eu, n.d.). In particular, reducing administrative barriers are emphasised and accelerating processes, but also reducing overall costs. Even more critical are: reducing the risk of falsified qualifications and easier access and verification for various stakeholders. The empowerment of citizens in the management and promotion of their qualifications is also an important aspect. Stemming from the inherent benefits of digitally-signed credentials, it is clear that its use will change the interactions between stakeholders from higher education institutions and broader society. In a scenario where employers and the community recognise the value of digital credentials, the need for traditional records of acquired qualifications will be called into question.

The foundations and legal basis for the development of the Europass Digital Credentials (EDC) infrastructure are set in two fundamental documents: The Decision of the European Parliament and Council of the European Union (2018) on a common framework for the provision of better services for skills and qualifications (Europass) adopted in 2018 emphasises the importance of establishing a digital qualification system. The Digital Education Action Plan (European Commission, 2020b) highlights the need to provide a framework for issuing digitally-certified qualifications and validating digitally-acquired skills that are trusted, multilingual and can be stored in existing professional profiles such as Europass (action No. 3). Other relevant policy-level documents are the European strategy for data (European Commission, 2020a) and European Skills Agenda (European Commission, 2020c). The vision is that the framework would be aligned with the European Qualifications Framework (EQF) and the European Classification of Skills, Competences, Qualifications and Occupations (ESCO) as the development continues. Integrating with the Europass infrastructure, the new solution has the potential to enable and standardise digitally-signed credentials across the European Higher Education Area, whereby awarding bodies confirm and provide proof of individuals' formal and informal learning outcomes with a credential containing information about the issuer and recipient using standard storage and validation procedures (Rampelt, Knoth and Orr, 2019). Thus, new digitally-signed credentials are introduced as electronic documents awarded by qualified bodies to individuals to confirm and provide proof of their learning outcomes (Everis, 2018). Digitally-signed credentials are issued not only for learning outcomes acquired in a formal but also in an informal environment, a context that is especially relevant for this paper.

In both formal and informal settings, some challenges inhibit wider usage of the EDC platform (available at https://europa.eu/europass/digital-credentials). Addressed to education ministers, European Commission (2019) provides guidance notes and calls on the EU member states to use the EDC tool stating that digitally-signed credentials are legally equivalent to paper-based certificates across the European Union. The framework for digitally-signed credentials targets, among other actors and beyond awarding bodies: credential owners (that are awarded digitally-signed credentials recording learning outcomes achieved in formal, informal and non-formal contexts) and employers (that verify the authenticity of digitally-signed qualifications of candidates and professionals) (Everis, 2018). Currently, the EDC infrastructure is in the early stages of implementation, and digitally-signed credentials are being piloted across the EU.

Despite the many benefits for all stakeholders, the biggest challenge to implementing digitally-signed credentials will be to convince the issuers and end-users (such as students) to use them. In that regard, an empirical study was conducted to determine what might affect students' behavioural intention to use digitally-signed credentials.

After presenting the context of digitally-signed credentials and the rationale behind the study in this section, the paper continues with presenting the research model and hypotheses in Section 2. Section 3 describes the data collection procedure and the scenario, while Section 4 contains the results and discussion. Following the discussion of structural model analysis results is a brief conclusion in Section 5.

2. Research model and hypotheses

The Unified Theory of Acceptance and Use of Technology (UTAUT) model has been used for technology adoption and acceptance research in many areas, some of which are e-government, e-banking, e-learning, and e-commerce (Williams, Rana & Dwivedi, 2015). UTAUT aims to explain technology acceptance based on eight theories or models: Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model, the Theory of Planned Behaviour (TPB), the combined TAM and TPB, the model of Personal Computer Utilization, the Innovation Diffusion Theory and the Social Cognitive Theory (Alwahaishi & Snásel, 2013). Over the years, the original UTAUT model (Venkatesh et al., 2003) has significantly evolved, and as many as over 170 UTAUT studies have been presented in a relevant literature review (Williams, Rana & Dwivedi, 2015). For example, new variables have been introduced, and alternative relationships have been posited and tested in different environments. Considering that the digitally-signed credentials are still being piloted with limited numbers of users, the study at hand is conducted with inexperienced users. Therefore, the research model could not be entirely based on standard constructs, such as usage habits. It is the reason for replacing the "use behaviour" construct with the "intention to use" as a key dependent variable. However, it is important to note that all significant theoretical models that investigate intention to use have proven the connection of this construct with use behaviour.

To specify, the proposed research model (Figure 1) incorporates the main UTAUT model constructs (Venkatesh et al., 2003): performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC) as key predictors of behavioural intention (BI). The model does not include the construct use behaviour from the original UTAUT model, however. As noted, this is due to a low usage experience in using digitally-signed credentials by the participants. Therefore, the effect of facilitating conditions (FC) on behavioural intention (BI), as in Thomas et al. (2013) is inspected considering no direct link from facilitating conditions (FC) on use behaviour could be posited. Furthermore, the model is extended, and two new constructs have been introduced: trust (TR) based on Alalwan et al. (2017) and Chao (2019), and perceived risk (PR) as in Chao (2019). Alternative relationships have been posited

and tested compared to the original model as well: effect of trust (TR) and effort expectancy (EE) on performance expectancy (PE) as in Alalwan et al. (2017) is analysed.

Figure 1: Proposed research model
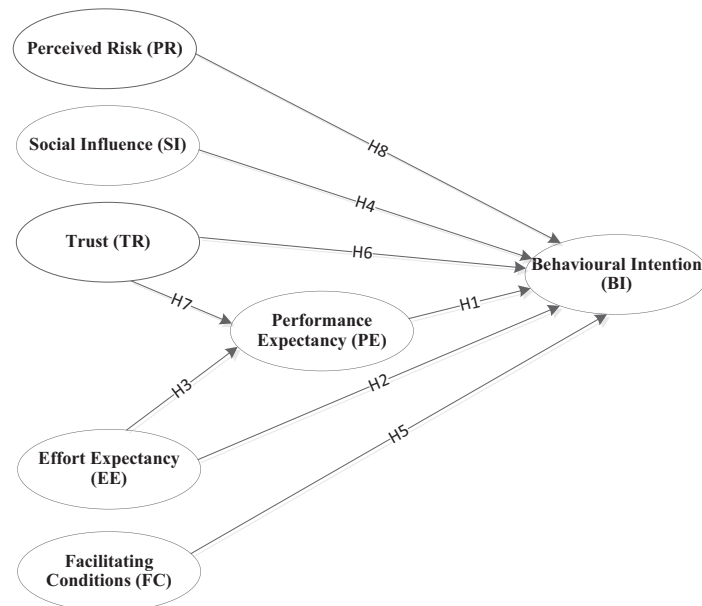
Source: based on Venkatesh et al., 2003; Alalwan et al., 2017; Chao, 2019

The definitions of the original model's constructs are taken from the paper by Venkatesh et al. (2003): Performance Expectancy (PE) "is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (p. 447). The model posits that performance expectancy has a positive impact on behavioural intention:

H1: Performance expectancy will have a positive impact on the behavioural intention to use digitally-signed credentials.

Effort Expectancy (EE) "is defined as the degree of ease associated with the use of the system" (p. 450). Effort expectancy should have a positive impact on behavioural intention; therefore, this study proposes the following hypotheses:

H2: Effort expectancy will have a positive impact on the behavioural intention to use digitally-signed credentials.

H3: Effort expectancy will have a positive influence on the performance expectancy of digitally-signed credentials.

Social Influence (SI) "is defined as the degree to which an individual perceives that important others believe he or she should use the new system" (p. 451) and positively impacts behavioural intention, leading to the following hypothesis:

H4: Social influence will have a positive impact on the behavioural intention to use digitally-signed credentials.

Facilitating Conditions (FC) "are defined as the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system "(p. 453). The

UTAUT model indicates that facilitating conditions have no effects on behavioural intention; however, Thomas et al. (2013) uncovered that facilitating conditions could significantly affect behavioural intention even when the effects of performance expectancy and effort expectancy on behavioural intention are included. Therefore, this study proposes the following hypothesis:

H5: Facilitating conditions will have a positive impact on the behavioural intention to use digitally-signed credentials.

Two new constructs have been introduced: trust and perceived risk. Trust is found to be essential in determining people's expectations from a social relationship. Belanche et al. (2012), starting from the definition of trust, state that when users suffer a loss from the transaction or service in case the other party does not behave as expected, trust is violated. It has long been analysed in buyer-seller exchange relationships and considered vital for meeting high customer expectations (Pavlou, 2014). In that regard, two hypotheses are formulated:

H6: Trust will have a positive impact on the behavioural intention to use digitally-signed credentials.

H7: Trust will have a positive influence on the performance expectancy of digitally-signed credentials.

Many related studies have examined perceived risk as an external factor influencing the external variables of the UTAUT model. It has been found that perceived risk considerably hinders behavioural intention (Chao, 2019). More specifically, Pavlou (2014) finds that it can reduce perceptions of behavioural and environmental control and is thus likely to influence transaction intentions negatively. Accordingly, this study proposes the following hypothesis:

H8: Perceived risk will have a negative impact on the behavioural intention to use digitally-signed credentials.

3. Data and methods

3.1. Participants and data collection

The study participants were the first-year students of the University in Split, Faculty of Economics, Business and Tourism in Croatia. A total of 341 questionnaires were completed. The respondents are a relatively homogeneous group and share a similar education and economic situation. Over 96% of student are from 18 to 21 years old. Gender imbalance is observed as there are 74% of female respondents and 26% of male respondents. However, this is consistent with the enrolment data. Data was collected in January 2021 using an online survey tool (Lime Survey), and the students completed the questionnaire voluntarily. It took them approximately 10 minutes to complete the questionnaire.

3.2. Scenario and questionnaire

First, a concept of a digitally-signed credential was presented to respondents as a documented statement with information about the person for whom it was issued. Such credential usually contains:
- activities (e.g. subjects taken),
- assessments (e.g. grades),

- achievements (e.g. acquired skills),
- professional entitlements (e.g. membership in a medical chamber or student status), and
- qualifications (e.g. earned faculty diploma).

It was listed that digitally-signed credentials allow for automatic verification, are signed using e-seals, and are authentic and identical to paper qualifications with the same information. After such a brief introduction to digitally-signed credentials, and before completing the questionnaire, respondents were required to do the following activities:

- Log in to the Student Rights Information System (https://issp.srce.hr/e-potvrda/) with their username and password used for all student e-services. Select the New certificate option, after which the system issues an e-certificate of student status. The authenticity of such an e-certificate can be verified by anyone who receives it either in digital (.pdf) or printed form. The students were then asked to check the authenticity of their e-certificates using the option Check the authenticity of the e-record (https://issp.srce.hr/e-potvrda/provjera), enter the numbers from their certificates, and review the results and the validity of the data.
- Check the validity of a digitally-signed certificate with learning outcomes from an international conference using the Europass/Europa.eu website (https://europa.eu/europass/en/europass-digital-credentials). The holder of this certificate received a file by e-mail via the Europass system, which she can attach to other digital certificates. Alternatively, the certificate is stored in her Europass 'wallet' (so she can share the direct link) or download the .pdf version. For Certificate Review and Validation, the students were asked to go to https://europa.eu/europass/digital-credentials/viewer, select Upload Credential and upload the file (Certificate_of_session_moderation.xml). Finally, they clicked on Credential Details to verify that the document is authentic (signed) and other issue data.

Through these activities, some of the functions of issuing and verifying the credibility of credentials through two different scenarios were demonstrated. After completing the activities and checks, the respondents proceeded to complete the questionnaire. The questionnaire measuring students' perceptions of factors influencing behavioural intention to use digitally-signed credentials was based on the UTAUT model, as explained in Section 2. The statements (26) have been contextualised for the digitally-signed credentials and university environment. All constructs, abbreviations, scale items and sources are presented in the appendix.

3.3. Structured equation modelling (SEM)

The analysis presented in Section 4 is based on structural equation modelling (SEM), a combination of factor analysis and path analysis. Part of the model that refers to measuring is equivalent to factor analysis and interpretation or relationship between latent and manifest variables, while the structural part corresponds to path analysis and interpretation of direct and indirect effects between latent variables (Halmi, 2003). A structural equation model enables statistical evaluation, including multiple regression weight, factor analysis and multivariate ANOVA (Ho, 2006). The convergent and discriminant validity of the model were tested using confirmatory factor analysis and other relevant calculations and coefficients (Cronbach's alpha, Composite reliability, Average variance extracted, square root of AVE). The overall structural model contained 7 latent and 26 manifest variables presented further in the paper.

4. Results and discussion

4.1. Descriptive statistics and assessment of normality

First, a normality test was performed based on skewness and kurtosis values. Descriptive statistics and assessment of normality are presented in Table 1. For values higher than +1 or lower than –1 for skewness or kurtosis, distributions are considered not normal (Hair et al., 2017). Based on that criterion, the variable "BI1 - Assuming I had access to the digitally-signed credentials, I intend to use it." has been excluded from further analysis.

Table 1: Descriptive statistics and assessment of normality

Variables	Min	Max	Mean	SD	Skewness	Kurtosis
PE1	1	7	5.20	1.470	-0.779	0.301
PE2	1	7	5.23	1.415	-0.711	0.087
PE3	1	7	5.46	1.427	-0.853	0.241
PE4	1	7	5.08	1.439	-0.569	-0.209
EE1	1	7	5.20	1.476	-0.861	0.285
EE2	1	7	5.12	1.487	-0.792	0.131
EE3	1	7	5.29	1.412	-0.860	0.435
EE4	1	7	5.37	1.395	-0.942	0.559
SI1	1	7	4.27	1.547	-0.185	-0.351
SI2	1	7	4.35	1.497	-0.199	-0.244
SI3	1	7	4.43	1.514	-0.205	-0.368
FC1	1	7	5.33	1.585	-0.923	0.331
FC2	1	7	5.21	1.466	-0.867	0.487
FC3	1	7	5.25	1.372	-0.785	0.370
FC4	1	7	5.22	1.480	-0.777	0.169
BI1	1	7	5.33	1.475	-1.078	1.042
BI2	1	7	5.19	1.383	-0.621	0.149
BI3	1	7	5.26	1.407	-0.697	0.080
BI4	1	7	5.48	1.360	-0.836	0.405
TR1	1	7	5.25	1.469	-0.802	0.194
TR2	1	7	5.18	1.465	-0.691	0.045
TR3	1	7	5.23	1.430	-0.607	-0.241
TR4	1	7	5.13	1.411	-0.659	0.049
PR1	1	7	3.65	1.553	0.089	-0.679
PR2	1	7	3.52	1.539	0.163	-0.655
PR3	1	7	2.96	1.609	0.549	-0.391

Source: Authors

4.2. Reliability and validity of the measurement model

The sample size ratio and the number of parameters were considered when selecting the number of manifest variables included in the model. The minimum sample size is 150 respondents for models containing 7 or fewer latent variables (Hair et al., 2010), each having 3 or more manifest variables with moderate variance projection on a relevant latent variable (0.5) (Table 2). Since the number of respondents is adequate (N=341), there was no need for reducing the number of latent and/or manifest variables. Cronbach's alpha coefficient for reliabilities for each construct was above 0.8 (Table 3), showing the internal consistency of items measuring the same construct (Ho, 2006). Convergent and discriminant validity of the scales was tested using confirmatory factor analysis. Convergent validity was checked using three tests (recommended

by Anderson and Gerbing as cited in Rana et al., 2017): standardised factor loadings, composite reliabilities and average variance extracted. Standardised factor loadings of manifest variables in the model are obtained based on the confirmatory factor analysis done in AMOS based on the sample of 341 respondents.

Table 2: Results of confirmatory factor analysis (manifest and latent variables included in the SEM model and standardised factor loadings from AMOS model)

Manifest variables	**FL**	**Corresponding latent variable**
PE1	0.824	Performance Expectancy
PE2	0.857	
PE3	0.862	
PE4	0.760	
EE1	0.852	Effort Expectancy
EE2	0.860	
EE3	0.869	
EE4	0.854	
SI1	0.892	Social Influence
SI2	0.872	
SI3	0.908	
FC1	0.819	Facilitating Conditions
FC2	0.804	
FC3	0.839	
FC4	0.687	
BI2	0.838	Behavioural Intention
BI3	0.920	
BI4	0.883	
TR1	0.911	Trust
TR2	0.935	
TR3	0.897	
TR4	0.860	
PR1	0.870	Perceived Risk
PR2	0.942	
PR3	0.691	

Source: Authors

All items loaded in the range from 0.691 to 0.942 and are statistically significant ($p<0,01$). It indicates a good measurement level of latent variables. All constructs have appropriate values of composite reliability (≥ 0.7) and average variance extracted (≥ 0.5) (Table 3).

Table 3: Results of reliability and convergent validity test

Constructs	**Number of items**	**Cronbach's alpha**	**Composite reliability (CR)**	**Average variance extracted (AVE)**
Performance Expectancy (PE)	4	0.895	0.896	0.684
Effort Expectancy (EE)	4	0.919	0.918	0.737
Social Influence (SI)	3	0.920	0.815	0.794
Facilitating Conditions (FC)	4	0.862	0.868	0.623
Behavioural Intention (BI)	3	0.911	0.807	0.776
Trust (Tr)	4	0.945	0.945	0.812
Perceived Risk (PR)	3	0.868	0.769	0.707

Source: Authors

Table 4 presents the square root of AVE and the latent variable correlations below the diagonal. The correlations are lower than the square root of AVE for every pair of variables, except for the facilitating conditions (FC) and effort expectancy (EE) (0.890), meaning that the latent factor is better explained by some other variables (from a different factor), than by its observed variables. Considering that the facilitating conditions (FC) in the original UTAUT model are measured in relation to adoption and not behavioural intention as it is posited in this study, an alternative model is tested without the latent variable. For all other variables, discriminant validity is confirmed.

Table 4: Results of discriminant validity test

Constructs	PE	EE	SI	FC	BI	Tr	PR
PE	**0.827**						
EE	0.755	**0.858**					
SI	0.651	0.577	**0.891**				
FC	0.799	0.890	0.634	**0.789**			
BI	0.793	0.721	0.617	0.774	**0.881**		
Tr	0.727	0.645	0.528	0.733	0.770	**0.901**	
PR	-0.185	-0.170	-0.071	-0.215	-0.195	-0.360	**0,841**

Source: Authors

4.3. Structural model analysis

Several relevant fit indices have been calculated to determine if the hypothesised model(s) fit the analysed data, and are presented in Table 5. Only the ones that provide enough information for model estimation have been chosen (Hair et al., 2010).

Table 5: Overall model fit indices for the two research models

Fit measure	Model 1 value (FC included)	Model 2 value (FC excluded)	Acceptable fit
Comparative Fit Index (CFI)	0.956	0.967	≥0.900
RMSEA	0.061	0.059	≤ 0.08
AGFI (adjusted goodness-of-fit index)	0.850	0.875	≥0.800
GFI (goodness-of-fit index)	0.881	0.905	≥0.900
Chi-square	582.947	382.595	
Degrees of freedom	257	176	
Probability level	0.000	0.000	P≥0.05
Chi-square/Degrees of freedom	2.268	2.174	<3.00

Source: Authors

Most of the fit indices for model 1 (the one that includes facilitating conditions) are within acceptable ranges except the GFI (goodness-of-fit index) of 0.881. For model 2 (the one that excludes the facilitating conditions), all indices' values are within acceptable ranges. Therefore, the alternative model is suitable for further structural analysis.

Comparing the coefficients of determination in the first model (FC included) for the variable Behavioral Intention $R^2 = 0.734$ and in the alternative model (FC excluded) where $R^2 = 0.732$, it can be concluded that keeping the variable facilitating conditions would not contribute to higher explained variance measures for the key observed variable. Consequently, the model presented in Table 6 and illustrated in Figure 2 is accepted as final. Figure 2 illustrates the validated research model with path coefficients and the significance of each relationship (*p <

0.05; ** $p < 0.001$). The model also includes calculated variances R^2 for two dependent variables.

Table 6: Results of the structural model and hypotheses testing

Constructs' relationship	Standardised regression weight	p values	Hypothesis supported
PE→BI	0.314	0.000	H1 - Supported
EE→BI	0.179	0.006	H2 - Supported
EE→PE	0.502	0.000	H3 - Supported
SI→BI	0.118	0.012	H4 - Supported
FC→BI	not tested	not tested	H5 - Not supported
TR→BI	0.382	0.000	H6 - Supported
TR→PE	0.405	0.000	H7 - Supported
PR→BI	0.040	0.292	H8 - Not supported

Source: Authors

Figure 2: Validated final structural model
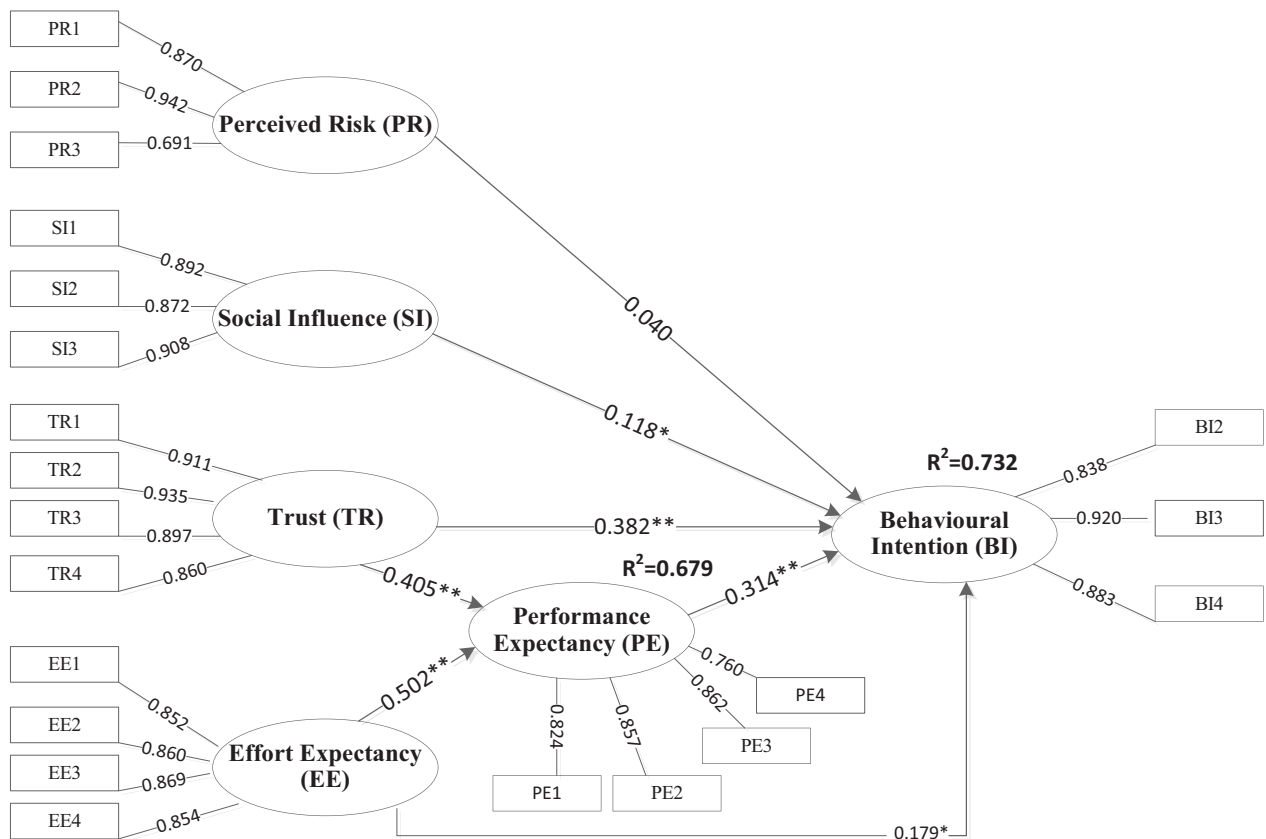
Source: Authors

4.4. Discussion

As presented in Table 6 and Figure 2, all of the path coefficients have a positive effect, and six of them are statically significant with an associated *p*-value lower than 0.05. More specifically, the results show the significant and positive effect of Effort expectancy on Behavioural Intention (0.179, p<0.05) and Performance Expectancy (0.502, p<0.001) – H2 and H3 are thus supported. Furthermore, the effect of Trust on Behavioural Intention (0.382, p<0.001), as well as on Performance Expectancy (0.405, p<0.001) is positive and significant – H6 and H7 are also supported. Also, the effects of Performance Expectancy (0.314, p<0.001) and Social Influences (0.118, p<0.05) on Behavioural Intention are positive and significant – H1 and H4 are also supported. On the contrary, the path leading from Perceived risk to Behavioural intention has a positive effect, opposite to what has been posited. However, it is not statistically significant, and so H8 is not supported. Hypothesis H5 stating that Facilitating Conditions will positively impact the behavioural intention to use digitally-signed credentials cannot be supported as well since the FC variable is excluded from the model due to the results of the discriminant validity test and GFI (goodness-of-fit index).

Taking into account all presented results, it can be concluded that the model tested in this study meets all the validity criteria and has prediction potential. The coefficient of determination R^2 indicates that the alternative model (model 2) explains the high percentage of variance for the dependent variables: behavioural intention (73%) and performance expectancy (68%). Such R^2 values exceed the results published in previous studies that range from 30-40% to 65%, as stated by Alalwan et al. (2017).

As expected, the results are in line with the study by Venkatesh et al. (2003), where it is indicated that the UTAUT model explains approximately 70% of the variance in behavioural intention. Comparing to the original UTAUT model (Venkatesh et al., 2003), this one included the construct of trust (TR) as in Alalwan et al. (2017) and Chao (2019). The results of the structural model analysis are very similar to Chao's (2019), where students' behavioural intention to use mobile learning was significantly and positively influenced by trust, performance expectancy and effort expectancy, and (satisfaction), although that research model explained 47.9% of the variance in behavioural intention. In the study by Alalwan et al. (2017), trust was also the most significant factor in predicting customers' intention to adopt mobile banking. The structural model analysis results, i.e. path coefficient analysis, indicate that trust is the most significant factor in predicting students' intention to use digitally-signed credentials (coefficient 0.382). Even though there are still no results focusing on adopting digitally-signed credentials, the results of this study are in line with similar and relevant studies about the adoption of various information systems (Alalwan et al., 2017).

The strong causal path of 0.314 is confirmed between the performance expectancy and behavioural intention, leading to the conclusion that the functional aspects of using the system will help users attain gains in their (job) performance significantly and positively affect the intention to adopt digitally-signed credentials. The model also indicates a significant positive relationship between effort expectancy and behavioural intention to adopt digitally-signed credentials with a regression coefficient of 0.179. Alalwan et al. (2017) also found a comparable regression coefficient of 0.18 for the stated relationship but in the context of mobile banking adoption. Social influence was a significant factor in predicting students' behavioural intention, meaning that students were interested in their references groups' views and recommendations. This finding is consistent with the original UTAUT model and many other studies that have confirmed the critical links of the UTAUT model. However, perceived risk related to the use

of digitally-signed credentials is not a statistically significant predictor of students' behavioural intention.

5. Conclusion

This study focused on the adoption of an emerging digital infrastructure that aims to revolutionise the way the learning qualifications are issued, shared and verified. In the first part of the paper, the relevance and benefits of using the digital authentication of qualifications were presented. The new EDC infrastructure would affect numerous higher education stakeholders, from credential owners, awarding bodies and employers in the EU Member States. Stemming from the purpose of the new infrastructure, the main benefits include reducing administrative barriers, accelerating the institutional processes, lowering costs, reducing the risk of falsified qualifications, enabling easy access and verification for various stakeholders, and more.

By far, the most significant number of individual users that the new infrastructure would impact is from the student population. In the process of student applications for various purposes, perceptions of the application process and feedback from industry partners who assess the submissions suggest that an unintended, but positive, outcome of the credentialing strategy is the promotion of students' identity and broader social engagement (Miller et al., 2017). In that regard, the authors suggested that digital credentials could be a useful tool to engage students, foster graduate identity and develop graduates who are active and engaged citizens. Along those lines, the potential and perceptions of the infrastructure that will be promoted widely in the years to come were investigated in this paper.

The presented findings are in line with relevant studies about the adoption of new information services and behavioural intentions, confirming that trust is a crucial predictor of students' intention to use digitally-signed credentials. In that regard, standardised and widely popular solutions such as the Europass platform provided by the European Commission that supports the use of e-Seals certified by trusted service providers instil confidence and have a promising future. Different actors in the process have welcomed recent efforts to promote Europass digitally-signed credentials by the authors of this paper. Specifically, skills and knowledge gained in an international conference Week of Innovative Regions in Europe (WIRE 2020) for over 400 participants in different roles were certified using Europass digitally-signed credentials in January 2021. The feedback from the receivers and the representatives of the employers was overwhelmingly positive, and the international character of the event and the scale of the endeavour contributed to excellent media attention. In the follow-up discussions with representatives from National Europass Centres, higher education institutions, employers, students, and the general audience, the importance of institutional onboarding, i.e. adoption from the side of HEI, VET and NGO issuers was particularly stressed. In that regard, another research avenue emerges focusing on, e.g. the motifs, competencies, readiness and other aspects that would be important for the effective implementation of digitally-signed credentials on the issuers' side. In that lies the main limitation of the study presented here – the focus is on one end-user group that is relatively homogeneous. Thus, future research plans include widening the sample to other stakeholder groups in different educational contexts. In particular, managers in higher education and administrators are the two priority groups since their commitment and involvement would be essential for the success of the EDC vision.

ACKNOWLEDGEMENT

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Appendix 1

Constructs	Abbrev.	Items	Sources
Performance Expectancy	PE1	I find digitally-signed credentials useful in my daily life.	Venkatesh et al., 2003
	PE2	Using digitally-signed credentials increases my chances of achieving tasks that are important to me.	
	PE3	Using digitally-signed credentials helps me accomplish tasks more quickly.	
	PE4	Using digitally-signed credentials increases my productivity.	
Effort Expectancy	EE1	Learning how to use digitally-signed credentials is easy for me.	Venkatesh et al., 2003
	EE2	My interaction with digitally-signed credentials is clear and understandable.	
	EE3	I find digitally-signed credentials easy to use.	
	EE4	It is easy for me to become skilful at using digitally-signed credentials.	
Social Influence	SI1	People who are important to me think that I should use digitally-signed credentials.	Venkatesh et al., 2003
	SI2	People who influence my behaviour think that I should use digitally-signed credentials.	
	SI3	People whose opinions that I value prefer that I use digitally-signed credentials.	
Facilitating Conditions	FC1	I have the resources necessary to use digitally-signed credentials.	Venkatesh et al., 2003
	FC2	I have the knowledge necessary to use digitally-signed credentials.	
	FC3	Digitally-signed credentials are compatible with other technologies I use.	
	FC4	I can get help from others when I have difficulties using digitally-signed credentials.	
Behavioural Intention	BI1	Assuming I had access to the digitally signed credentials, I intend to use it.	Venkatesh et al., 2003; Chao, 2019
	BI2	I will always try to use digitally-signed credentials in my daily life.	
	BI3	I plan to use digitally-signed credentials in future.	
	BI4	I predict I would use digitally-signed credentials in the future.	
Trust	TR1	I believe that digitally-signed credentials are trustworthy.	Alalwan et al., 2017; Chao, 2019
	TR2	I trust in digitally-signed credentials.	
	TR3	I do not doubt the honesty of digitally-signed credentials.	
	TR4	I feel assured that legal and technological structures adequately protect me from problems with digitally-signed credentials.	
Perceived risk	PR1	I think using digitally-signed credentials puts my privacy at risk.	Chao, 2019
	PR2	Using digitally-signed credentials exposes me to an overall risk.	
	PR3	Using digitally-signed credentials will not fit well with my self-image.	

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LEGAL DISPOSITIONS OF MATILDA HENGL - A REVIEW OF THE LEGAL POSITION OF WOMEN IN THE FIRST HALF OF THE 20TH CENTURY

ABSTRACT

The period at the turn of the 19th and 20th centuries was marked by progressive development and modernization in almost all areas of social and economic activity in the city of Osijek. In such circumstances of social development, prominent Osijek businessmen, mostly industrialists, had an immense influence on the political, cultural and intellectual life of the city. Among the many, the influence of the Gillming Hegl family is special, ie the married couple Vjekoslav and Matilda, to whom significant attention has been paid in numerous historical studies. Those studies largely deal with the political influence of male members or the family legacy of two families. The contribution of these studies is immeasurable, but they rarely reflect the position of female family members in areas other than cultural or social.Therefore, this paper attempts to determine the legal characteristics of the position of female members of prominent Osijek families at the beginning of the 20th century, on the example of Matilda Hengl, yob. Gillming. The research will use a historical legal method to reconstruct her ownership dispositions in terms of valuable real estates, which are still the center of social life in the city. The results of a comprehensive analysis of the available archival material should clearly determine the foundations of the legal position of women in Osijek society in the first half of the last century, but also indicate the need for further research in this legal area.

Keywords: *Matilda Hengl, ownership relations, real estates, archival material.*

1. Introductory remarks

Determining the legal position of women in different historical periods preceding the period to which this research refers is one of the most comprehensive topics in the scientific historical and legal literature, both Croatian and comparative. For this reason, before the research focuses on the analysis of archival material, mostly court decisions and rulings that are the result of the

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procedural activity of Matilda Hengl, nee Gillming, we are going to review recent literature with the purpose of identifying social and economic opportunities that, among other things, favorably contributed to the active presence of women in legal affairs in the early 20th century. A brief review of the material regulation of the position of women in the then valid normative acts will serve the purpose of understanding the form of undertaking business activities of Matilda Hengl. It is of primary importance to determine whether certain procedural activities of women as property rights holders are common in the observed period or whether Matilda Hengl's position is the result of a separate social status, financial circumstances and thus a conditional position within the family.

It must be noted that the topic of this research cannot be viewed solely from the perspective of private legal dispositions concluded by the will of Matilda. Political situation that emerged after the Second World War as well as the institutes of nationalization of valuable property of prominent citizens of Osijek resulted in significant changes in ownership relations, including those of the Hengl family. The procedural activities caused by the post-war circumstances will be presented in the last part of the research. This will try to determine the final status of the property that is the object of disposal from the beginning of the research.

2. The legal position of women at the beginning of the 20th century

Numerous discussions in legal history science regarding the clearer determination of the position of women in Croatian society in the observed period are reduced to several basic features.[2] The position of women in society at the end of the 19th century was primarily harmonized with the established patterns of desirable behavior that were evaluated in accordance with the social position and status of women. While lower-class women were forced to work to support their families, those of higher status were expected to be role models for housewives, wives, and mothers and to contribute to strengthening their husband's social position accordingly.[3] In accordance with the ubiquitous and general modernization of economic, social and legal conditions in Croatian society from the beginning of the 20th century, women of higher social status gradually lose the primary role of a mother and housewife, and with education, which becomes more accessible to them, they affirmatively begin to participate in the social and cultural life of the environment in which they act.[4] The

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[2] Červenjak, J. (2012): Ostavština i značenje obitelji Gillming-Hengl *[The Legacy and Significance of the Gillming-Hengl Family]*, in: Annual of the German Community DG Jahrbuch 2012: Proceedings of the 19th Scientific Conference "Germans and Austrians in the Croatian Cultural Circle", Osijek, Croatia, 5-7 November, 2011, p. 175-184. Červenjak, J., Živaković-Kerže, Z. (2014): Modernizacijska kretanja i položaj žena u gradu Osijeku na prijelazu 19. u 20. stoljeće *[Modernization Movements and the Position of Women in the City of Osijek at the Turn of the 19th and 20th Centuries]*, Scrinia Slavonica: Yearbook of the Branch for the History of Slavonia, Srijem and Baranja of the Croatian Institute of History, Vol . 14, no. 1, p. 129-141. Živaković-Kerže, Z. (1999): From Traditional to New Roads: Trade, Crafts, Industry and Banking Institutions of the City of Osijek at the Turn of the Century from 1868 to 1918, Society for Croatian History, Osijek.

[3] Erceg, S., Tataj, D. (2019): Položaj žena u Banskoj Hrvatskoj u drugoj polovici 19. stoljeća *[The position of women in Banska Hrvatska in the second half of the 19th century]* The Essehist: a journal of students in history and other social sciences and humanities, Vol. 10, no. 3, p. 1.,… .socially 'acceptable behavior' required a certain education, so women had to speak foreign languages, know works from classical literature and have art and music lessons. "Iveljić, I. (2007): Očevi i sinovi: privredna elita Zagreba u drugoj polovici 19. stoljeća *[Fathers and Sons: Economic Elite Zagreb in the second half of the 19th century]*, Leykam international, Zagreb, p. 290

[4] Erceg, Tataj, op. Cit. note 3 p. 88. Mathilda Gillming, a daughter of the prominent Osijek Lower Town family, educated at a girls' boarding school in Dresden. She was fluent in German, French and Italian, and spoke English. See more: Červenjak, J., Živaković-Kerže, Z. (2014): Modernizacijska kretanja i položaj žena u gradu Osijeku na prijelazu 19. u 20. stoljeće *[Modernization movements and the position of women in the city of Osijek at the turn of the 19th and 20th centuries]*, Scrinia Slavonica, Vol. 14, no. 1, p. 138. On the education of women as well as on the reforms that occurred during the reign of Ban Ivan Mažuranić, see: Krešić, M. (2019): Žensko pitanje u

conclusions of the Červenjak and Živaković-Kerže research regarding the position of women in Osijek society from the beginning of the 20th century, despite visible modernization, indicate the existence of two gender policies, traditional and modern, regarding women's identity in civil society. [5] Thus, in the observed period, the difference between the legal position of men and women is still clearly emphasized, but also the fact that despite the modernization processes that penetrated more and more into all spheres of social life, the role that women had to fulfill in the Osijek society is still determined by traditional values.

In legal terms, the position of women in the observed period was determined by the provisions of the Austrian Civil Code, which entered into force in Croatia in 1853 in accordance with the provisions of the Code. As the man is still the head of the family under the Austrian law, he most often represented his wife at the disposal of her property.[6] Pursuant to Articles 91 and 92 of the Civil Code, the husband was the head of the family in the marital union, he had the right to manage the household and represent his wife, and by taking the husband's surname, social status and residence, the wife was obliged to carry out his orders providing they are followed by others as well. [7] The legal position of women in the period after the entry into force of the General Civil Code is marked by provisions on the regulation of property relations arising during the duration of the marital union. Although the Code regulated the principled separation of the property of spouses in the event of a dispute over the property, however, it was considered to have been acquired by the spouse. [8] Also, the husband had the right to manage his wife's property as well as to enjoy it.[9] According to the opinions stated in the legal literature, such an arrangement is marked by the legal subordination of women, and is based on the innate difference between the sexes.[10] According to Flossmann, in such a case the subordination of a woman was described, which the author described as benevolent educational patriarchy. Despite the principled separation of the spouses' property, according to the law relevant in Croatia as well, a woman would leave the management of her own property to her husband by tacit agreement. In an attempt to create a unified civil law legislation, the Pre-Foundation of the Civil Code for the Kingdom of Yugoslavia was to regulate, among other things, marital law and marital relations. Although the text of the Reconstruction did not enter into force, the

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reformama bana Ivana Mažuranića *[Women's issue in the reforms of Ban Ivan Mažuranić]*, The Intellectual, culture, reform: Ivan Mažuranić and his time / Čepulo, Dalibor; Rogic Musa, Tea; Roksandić, Drago (ed.), Zagreb: The Faculty of Law, University of Zagreb; Lexicographic Institute Miroslav Krleža, p. 238-240.

[5] Živaković-Kerže, Z. (2014): Modernizacijska kretanja i položaj žena u gradu Osijeku na prijelazu 19. u 20. stoljeće *[Modernization movements and the position of women in the city of Osijek at the turn of the 19th and 20th centuries]*, Scrinia Slavonica, Vol. 14, No. 1, p. 140

[6] Gerhard, U. (2016): *Women's Rights in Civil Law in Europe (nineteenth century)*, In Clio. Women, Gender, History, Volume 43, Issue 1, January 2016, pages 250 to 273, https://www.cairn-int.info/article-E_CLIO1_043_0250--women-s-rights-in-civil-law-in-europe.htm?contenu=article, 15. January 2021.

[7] Krešić, M. (2019): Žensko pitanje u reformama bana Ivana Mažuranića *[Women's issue in the reforms of Ban Ivan Mažuranić]*, The Intellectual, culture, reform: Ivan Mažuranić and his time / Čepulo, Dalibor; Rogic Musa, Tea; Roksandić, Drago, editor, Zagreb: Faculty of Law, University of Zagreb; Lexicographic Institute Miroslav Krleža, p. 232., For an explanation of the provisions, see: Derenčin, M. (1880): Tumač k Obćemu austrijskomu gradjanskomu zakoniku *[Interpreter to the General Austrian Civil Code]*, Zagreb, Published by the Albrecht and Fiedler University Bookstores, § 90 and 91.

[8] See § 1237 of the GCC. For the purposes of the research, the GCC is cited according to: Vuković, M. (1955): Opći građanski zakonik s novelama i ostalim naknadnim propisima *[General Civil Code with Novels and Other Subsequent Regulations]*, Školska knjiga, Zagreb

[9] See § 1238 GCC

[10] Flossmann U. (2006): *Frauenrechtsgeschichte ein Leitfaden für den Rechtsunterricht Linz*, Trauner, p. 93 according to: Gerhard, U. (2016): *Women's Rights in Civil Law in Europe (nineteenth century)*, In Clio. Women, Gender, History, Volume 43, Issue 1, January 2016, pages 250 to 273, https://www.cairn-int.info/article-E_CLIO1_043_0250--women-s-rights-in-civil-law-in-europe.htm?contenu=article

content that regulated the legal consequences of marriage and the relationship between spouses fully followed the idea and principles previously regulated by the General Civil Code.[11]

The perception of the legal position and role of women in marriage changes in the period after the Second World War, when the Basic Law on Marriage enters into force.[12] Equality of spouses in rights and obligations is the basic principle that the legislator was guided by when standardizing marriage and property relations in marriage. Equality of women with men in all areas of social life and activity is an explicit provision of the Constitution and as such applicable to all other areas of law.[13] A novelty in relation to the previously valid legislation is the fact that the property that each spouse owns at the time of marriage remains his own, and each retains the right to manage and dispose of it.[14] In the following, an effort will be made to determine whether the change in legislation also marked a change in the legal position of women or whether the inherited traditional framework still remained part of everyday practice.

3. Legal dispositions of Matilda Hengl

In this part, based on a detailed analysis of the available archival documents, we will try to determine whether the legal activity of Matilda Hengl, a prominent Osijek woman, was an affirmative statement when it comes to modernizing the legal position of women in society or a reminiscence of traditional values and expectations of women. The totality of legal dispositions covered by this research can be divided into two phases of action. The first, which includes a series of legal dispositions undertaken for the purpose of acquiring property, i.e. the joint property of spouses, Matilda and Vjekoslav, and preserving the property in its current condition with possible improvements in order to increase the value of inherited real estate. While the second phase refers to Matilda's legal actions aimed at trying to regain possession of property confiscated during the period immediately after the Second World War and used for the purpose of realizing public property for the needs of the then political regime.

Mathilda (Thildy) Gillming[15] comes from the famous Osijek families Gillming and Blau who actively participated in the economic and cultural life of the city.[16] Acquisition of a valuable

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[11] See § 146-148. *Pre-foundation of the Civil Code for the Kingdom of Yugoslavia Text*, Ministry of Justice of the Kingdom of Yugoslavia, Belgrade (1934).

[12] The Basic Law on Marriage entered into force on April 3, 1946 in accordance with Art. 4: "In a marital union, a wife and a husband are equal." Basic Law on Marriage and State Registry Books, Official Gazette of the Federal People's Republic of Yugoslavia no. 49, Belgrade, 1946. p. X.

[13] Basic Law on Marriage and State Registry Books, Official Gazette of the Federal People's Republic of Yugoslavia no. 49, Belgrade, 1946. p. X.

[14] See Article 9 and 10 on the Basic Law on Marriage

[15] Ladislav Gilming was born on May 2, 1842, and was the son of Bartholomew Martin Gillming and Susanna nee Krautsak. By marrying on November 28, 1865, Ladislav became attached to Mathilda Blau, and in that marriage there children were born - Maria Leopoldina (November 15, 1866), Helena Theresia (July 11, 1868) and Mathilda (Thildy) Wilhelmina (October 20, 1880).). Živaković - Kerže, Z. (1998): Utjecaji obitelji Reisner, Gillming, Blau i Hengel na gospodarski i kulturni razvoj grada Osijeka *[Influences of the Reisner, Gillming, Blau and Hengel families on the economic and cultural development of the city of Osijek]*, in: Yearbook of the German national community VDG Jahrbuch 1998, Osijek, p. 11 - 17

[16] "The Blau trading family, who, since the second half of that century owned, among other properties, the Casino and the Grand Hotel in Županijska Street (the northern part of the building of today's Croatian National Theater). Theresa Roth married the wholesaler Leopold Gustav Blau on March 8, 1844, and gave birth to the third child in the family, Mathilda, (Matilda's mother) who would later be married to the Gillming family. Bartholomew Martin Gillming was engaged in the trade and processing of leather, and in 1824 he founded a manufacturing workshop as a small-scale enterprise. In the next half century, Gillming owned tanneries in Osijek. "Živaković - Kerže, Z. (1998): Utjecaji obitelji Reisner, Gillming, Blau i Hengel na gospodarski i kulturni razvoj grada Osijeka

part of the family property ensured her social position, but also undertaking property-legal dispositions regarding valuable real estate, which will be described below. In 1906, she married Vjekoslav Hengl, a lawyer, notary public and long-time mayor of Osijek, responsible for the communal, economic and cultural development of the city. [17] This circumstance further ensured her social recognition, but also enabled her to use her own example to influence the creation of new patterns of socially acceptable behavior of women in Osijek society from the beginning of the last century.

3.1. Legal actions taken for the purpose of preserving inherited property

The first recorded activity of Matilda Hengl in relations with public bodies is contained in a multitude of documents created on the occasion of obtaining a building permit for the construction of real estate, a family house on the corner of Chavrakova and Kolodvorska streets. [18] It was about building a property in an attractive location, which is evidenced by the price of the land[19] and the expressed interest of other bidders to build a post office building on the same site. [20] From the decision of the city government of March 29, 1905 no. 39 it is evident that the purchased real estate consisted of three plots and two that were ceded to the buyer free of charge. [21] Matilda paid the purchase price by paying a deposit of 2200 kroner in the name of the city investment foundation, and the remaining amount of half the purchase price, i.e. 13 100 kroner, had to be paid within 14 days of delivery of the said decision in order to conclude the purchase contract. [22]

Construction of the property began immediately after Matilda obtained all the necessary documentation for that permit. [23] The builder undertook to build the family house according to the designs of the Viennese architect Gothilf. The construction contract was drawn up after the construction began, i.e. on June 6, 1906. An inspection of the document that is part of the archive documentation shows that this agreement was written to resolve a construction dispute

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[Influences of the Reisner, Gillming, Blau and Hengel families on the economic and cultural development of the city of Osijek], in: Yearbook of the German National Community VDG Jahrbuch 1998, Osijek, p. 11 - 17.

[17] Červenjak, J. (2012): Ostavština i značenje obitelji Gillming – Hengl *[Legacy and significance of the Gillming - Hengl family]*, Yearbook of the German Community DG Jahrbuch 2012., Vol. 19, p. 178- 180.

[18] HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 1.

[19] The price of the land was 30,600 kroner, which meant 10 kroner per m2. The decision of the free and royal City of Osijek dated 9 April 1905, HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 1.

[20] It was an offer from the Hungarian Ministry to build a property the length of a shop. Other bidders as well as the ministry have given up on buying the land due to the extremely high price of the property.

[21] The plots that made up the purchased property are no. 1856/1-b = 220°, 1856/1-c = 4° and 1856/2-b = 626°. The plots were ceded free of charge: 1856/2-c = 90° and 7356/2 = 48°. The total area of the construction site was 3062 m2. HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 1.

[22] The decision of the city government of March 4, 1905 states that Matilda undertook to build a house 28 m long on a building plot of 36 ½ m in Chavrakova Street, and 20 m from the front in Kolodvorska Street which was 24 m long. Matilda undertook to build a one-story house on the remaining part of the land in Kolodvorska cesta within 5 years. See more: Session of the City Government 56 / A of 28 February 1905 on the basis of which the decision to issue a building permit to Matilda Gillming was made. The decision of the city government to issue a building permit was made on August 18, 1905. By the decision of the city government of March 31, 1906, Matilda was granted a permit to upgrade the property. The extension was to consist of the construction of a room with a corridor and a terrace on the right wing of the house on the corner of Čavrakova and Kolodvorska. The construction was to be carried out by the builder Wybiral. HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 1

[23] The personal documentation of the archival fund of Vjekoslav Hengl also contains a cost estimate with the specification of all works that were to be performed on the property of Matilda Gillming. The bill of quantities is written in German and is included in the contents of the fund under the title Kostenuberschlag, Wohnshauses Gillming. HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 1.

that had arosen just before the document was drawn up. It also follows from the content of the document that the parties did not sign it. Under the contract, the contractor undertook to perform all construction works in accordance with the draft and rules of the profession and to take all measures to ensure that the works were started and completed on time. It is interesting that this is the first document related to the construction of a family house in which Matilda is not mentioned personally as the client, but was represented by a proxy, a lawyer Vjekoslav Hengl.

Regarding the previously mentioned construction contract, it is interesting to note that it will be the reason for a civil lawsuit that will be initiated against Matilda Gillming by the contractor Wybiral for non-payment of the contracted amount after all construction works from the cost estimate. [24] From the contents of the Minutes prepared in writing before the court by Matilda Gillming's attorney, Vjekoslav Hengl shows that the defendant did not pay the remaining value of the work because the contractor not only deviated from the sketch and project according to which the property was to be built, but "built parts of the property according to his will, without plans and drafts. " The content of the minutes shows that the construction contract is not the only legal basis for the relationship between the contracting parties, given that the construction of the property began in July 1905 on the basis of an oral agreement of the contracting parties. Matilda's attorney refers to the calculation which he encloses with the minutes which show that the works on the real estate were not carried out in accordance with the project of the Viennese architect, but that the defendant Matilda paid the costs in the amount of 83,821 crowns for all masonry and carpentry works, iron pipes supply and the construction of toilets and sewers, although the originally agreed amount by oral agreement for the performance of the mentioned works amounted to 75,200 crowns. [25] According to the data witnessed by the preserved documents, the lawsuit was conducted until 1917. [26] It appears to have been suspended thereafter as the court decision in the case was never rendered. Interestingly, the plaintiff's attorney probably revoked the power of attorney to represent him in the litigation, probably due to the lack of interest in further participation in the hearings at which the defendant did not appear. [27]

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[24] Franjo Wybirala's lawsuit against Matilda Gillming was initiated before the Royal Court in Osijek. The value of the lawsuit was 16,092 kroner. 2/3 1907. no. 2599. The date of initiation of the proceedings cannot be read from the content of the submission due to the damage to the document. But from the designation of the object it follows that it is March 1917.

[25] HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 1.

[26] The archive fund contains a number of summonses sent to the parties for a court hearing. It is a series of notifications sent by the parties to the Royal Judicial Table with the purpose of postponing certain hearings which led to the suspension of the proceedings in the case. From the content of certain documents, it is clear that the parties have repeatedly tried to conclude an out-of-court settlement, but without success. By a notice sent to the Royal Judicial Table in Osiiek, Matilda requested the postponement of the hearing scheduled for May 2, 1907 due to the absence of her proxy. The hearing was scheduled by a decision of the judicial body on March 30, 1907. By court decision of 28.04.1907. no. 5640/gr hearing in the case is scheduled for May 10, 1907.It is clear from the plaintiff's request that the defendant did not access it. By the Decision no. 17156 of 21 December 1912, a hearing was scheduled for 7 February 1913. Decision no. 1924 gr. a new hearing was scheduled for March 20, 1913. Decision no. 13536 of September 6, 1913, a hearing was scheduled for October 2, 1913. By decision of May 21, 1914, without stating the number, a hearing was scheduled for June 17, 1914. Decision no. 13615 of 3 October 1914, a hearing is scheduled for 18 December 1914. By decision of 31 December 1914 no. 15821 a new hearing was scheduled for March 11, 1915. Common to all these minutes is the fact that the defendant did not attend any hearing. Minutes in litigation tt. Francis Wybirala v. Matilda Gillming no. 8306 gr. On August 28, 1915, it was decided that ethe proceedings be suspended due to the non-accession of the parties to the reasumation. All documents are part of the following fund: HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 1.

[27] Minutes in litigation tt. Francis Wybirala against Matilda Gillming no. 9429 gr.of 15 November 1917. HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 1.

The contents of the archive fund further reveal the very rich correspondence between Matilda Hengl and the Government of the Free and Royal City of Osijek regarding a very attractive property in the city center where the Croatian National Theater is located today. Despite the fact that the content of the documentation is obviously missing, an attempt was made to reconstruct a very complex structure of ownership relations with regard to this valuable property. [28] Undoubtedly, the period we refer to in the content of this research reveals a very active role in which the then owner Matilda Hengl sought to preserve the value of real estate, but also to make it as attractive as possible to become the center of cultural and social life. The earliest available documentation regarding this property, which covers the period of Matilda Hengl's activity, reveals the co-ownership of Matilda Gillming and Antonija pl. Farago (pl.=plemenit= eng. noble). [29] After the death of Antonija pl. Farago the theater building was owned by the co-heiress, former co-owner Matilda Gillming. [30] The change in the property relations came after the death of Matilda Gillming. Although the probate hearing was not concluded by a final decision until August 8, 1920, it is clear that the heirs of the theater building were Matilda Hengl and Marija pl. Jankovic, daughters of the deceased. [31] The change in legal relations related to the theater building, and according to the preserved archival material, occured only after the city municipality had transferred all its rights and obligations from the lease agreement to the state treasury of the Kingdom of Serbs, Croats and Slovenes. The heirs sought to conclude a new lease agreement in respect of the theater building with the same amount of rent as the previous one providing that certain building modifications were done that were to increase the accommodation capacity of the Casino Hotel. [32] By the decision of the Directorate of the Treasury Legal Affairs in Zagreb of May 23, 1921, no. 3525-1921 / II, the co-heirs have been informed of the intention of the competent authority to conclude a lease agreement in respect of the theater building under the conditions set out by the co-heirs in a previously sent letter to that authority. As the theater building under the new contract is to be used only for the accommodation of the theater, and not for the establishment of the theater as a "company", the competent authority proposed the conclusion of a lease for a period of ten years with the right to earlier termination if necessary. [33] As the archive fund does not contain data or documents on the lease agreement itself or subsequent extensions of the contract, it is assumed that the co-heirs renewed the contract under the same conditions depending on how

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[28] Due to the same name and surname Matilda (Matilda Hengl, nee Gillming) and her mother (Matilda Gillming, nee Blau) during the processing of the material there were difficulties in determining which of the two and at what time legally acted in respect of this property.

[29] Regarding the proposal of co-owners no. 40282-1908 of 30 November 1908 addressed to the City Legal and Theater Committee, at a committee meeting on 16 April 1909 the following was decided about a new lease in respect of this property: an annual rent of 3000K with the obligation of the city municipality to pay insurance premium. The contract is concluded for a period of five years. The irrevocability was for the lessor, and for the lessee the right of cancellation after 2 years was valid. The conditions were changed by the decision of the Government 1380a / I- 1909 of April 30, 1909. Under the new conditions, the city municipality could cancel the contract after one year, and the owners were obliged to pay taxes and city fees in respect of real estate. HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 2

[30] Decision no. 419 = 1910. The City Governments of the Free and Royal City of January 5, 1910, by which the previous order of October 24, 1909 no. 37001 is amended in such a way that the lease installments indicated in the cited order are to be paid to Matilda Gillming. On February 14, 1918, a lease agreement between the owner, Matilda Gillming, and the city council was concluded for the last time since the owner passed away in 1920. By the decision of the provincial government no. 14958 of 16 March 1918 that contract was approved. Under the following conditions: the duration of the lease relationship is three years, and if after the expiration of the lease term the lessor or the lessee does not cancel the contract, it is extended for a period of one year. As the parties did not cancel the contract, the lease was automatically extended until September 30, 1921.

[31] It derives from the Minutes compiled by the State Attorney's Office in Osijek on August 8, 1920.

[32] The conditions are contained in a letter sent to the Directorate of Erar Legal Affairs in Zagreb on March 23, 1921. HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 2.

[33] By the decision of the Directorate of Erarchical Legal Affairs in Zagreb of April 29, 1921, no. 3525-1921 / II

the organization of public law existed in different state formations until the death of the heiress. This is supported by the lease agreement concluded with the Croatian State Theater in Osijek in 1941 for three months which was located in the theater building no. 9/11 in Osijek. The contract was concluded by the representataive of the owner Matilda Hengl, her husband Vjekoslav Hengl on September 30, 1941.[34] This is evidenced by the record of real estate evaluation of the owner Matilda Hegl from 1946, which shows that Matilda was the owner of the theater and the casino. [35]

It must be noted that in connection with all legal affairs related to the theater building, which were numerous, judging by the content of the archive fund, both were represented by the same attorney Vjekoslav Hengl. What has already been clearly established in Matilda Hengl's legal affairs is that she was represented by her husband in all litigations she conducted, regardless of whether they had been brought before judicial or public bodies. Having in mind that Vjekoslav Hengl worked in his own law office, and in the period from 1920-1934 he held the position of mayor of Osijek, the parliamentary relationship is not surprising.

3.2. Legal actions for the purpose of repossession of confiscated property

As mentioned earlier, the second part of the archival documentation relating to Matilda Hengl's legal actions consists of documents created mainly in administrative proceedings and rich correspondence with public bodies for the purpose of recovering confiscated property, primarily by agrarian reform after the World War I and expropriation after the World War II.

After the proclamation of the Kingdom of Serbs, Croats and Slovenes, a very important task was set before the state, which should have been completed as soon as possible. The poor peasantry became louder and louder with their demands, which led to the proclamation of agrarian reform by Regent Aleksandar Karađorđević.[36] In order to successfully implement the agrarian reform after the end of the First World War, the competent authorities of the Kingdom of Yugoslavia sought to completely liquidate all remaining forms of feudal relations. [37] The reform was primarily aimed at the liquidation of aristocratic and ecclesiastical estates in Croatia, and in 1925 most of the liquidation processes had already begun. Landlords throughout the Kingdom of Serbs, Croats and Slovenes could no longer freely manage their property. [38]

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[34] The contract is part of the family documentation of the archive fund DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 2.

[35] Matilda Hengl Real Estate Appraisal Record, compiled in Oijek, July 29, 1946. DAOS-871 Vjekoslav Hengl, 1.2. Family documentation, box 2.

[36] The Kingdom of Serbs, Croats and Slovenes was proclaimed on December 1, 1918, and agrarian reform was proclaimed on New Year's Day in 1919. This quick reaction to the demands speaks volumes about how burning the issue was. Until the proclamation of the agrarian reform, many large estates throughout Croatia suffered great damage, looting and riots by the rebellious actions of the peasantry. Outrage was felt not only by landowners but also by others (municipalities, notary offices, merchants, schools). The Ministry of Social Policy carried out agrarian reform through a special department for agrarian reform, but in February 1920 the Ministry of Agrarian Reform was established in Belgrade. - Šimončić-Bobetko, Z. (1988): Agrarna reforma na području Hrvatskog zagorja, Međimurja i Podravine u međuratnom razdoblju (1918-1941) *[Agrarian reform in the area of Hrvatsko zagorje, Međimurje and Podravina in the interwar period (1918-1941)]*, Historical contributions, Vol. 7, no. 7, p. 31-76

[37] Šimončić-Bobetko, Z. (1997): Agrarian Reform and Colonization in Croatia 1918-1941, Croatian Institute of History, Zagreb, p. 11.

[38] The reform did not affect the population of Serbia because there were no large estates as in Slavonia, Zagorje and Dalmatia. After the expulsion of the Turks, Milos Obrenovic limited his land holdings to only seven hectares. - Banić, P., Peklić, I. (2015): Agrarna reforma poslije Prvog svjetskog rata i Grkokatolička biskupija: osvrt na provedbu u sjevernoj Hrvatskoj *[Agrarian reform after the First World War and the Greek Catholic diocese: a*

The reform affected Osijek landowners (83 of them)[39], including the Blau estate, which was inherited by sisters Matilda Hengl and Marija Janković.

The Blau estate, better known as the *Pomoćin Estate*, consisted of a total of 1,207 acres of land.[40] In 1907, Josip Gustav Blau authorized Dr. Vjekoslav Hengl to represent him in all legal and political affairs on his behalf and on behalf of his successors.[41] As sisters Matilda Hengl and Marija Janković bequeathed the estate after the death of the former owner, the estate will also become the object of their legal action after the implementation of the agrarian reform and on their property as well.[42] By order of the Council of Ministers in April 1919, based on the implementation of the agrarian reform, 100 acres were confiscated from the property and given to the peasants of the village of Dopsin on a temporary lease.[43] The co-heirs have been active for years in undertaking various legal affairs in order to exercise the inherited rights in respect of the Pomoćin estate. Among the first preserved documents is a request for approval of the supermaximum[44] which was rejected.[45] Matilda Hengl and Marija Janković appealed[46] against the decision rejecting their request requesting that the decision with all documents be submitted to the Agrarian Directorate in Zagreb, and that the remaining areas be included as supermaximum, that is, to determine a new debate should there request could not be met. The dissatisfaction of the family continues because on February 2, 1924 a decision was made by the County Agrarian Office to confiscate an additional 93 acres. The problem was not only in

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review of implementation in northern Croatia], Cris: Journal of the Historical Society of Križevci, Vol. 17, no. 1, p. 25-39

[39] HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, List of large estates in the area of Župan. Agrarian Office in Osijek, (box 3)

[40] Out of 1207 acres (6,946,285 square meters, or 695 hectares), 1,111 acres were located in the sphere of the water cooperative. - HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Minutes compiled on March 12, 1922 in the editorial office of the water cooperative for the regulation of Vuka in Osijek, Subject: Water cooperative for the regulation of Vuka - land issue for the purpose of agrarian reform (box 3)

[41] HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Power of Attorney November 10, 1907, (box 3)

[42] Matilda Hengl and her sister Marija Janković inherited the Dopsin and Pomoćin estates according to a will drawn up on 1 June 1914. HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Minutes compiled on October 19, 1922.

[43] HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Notice-Commissioner of the Ministry of Agrarian Reform for the district of Osijek Dr. Slavko Michil, Number: 161-1919, (box 3)

[44] The agrarian maximum / land maximum meant the largest size of land holding that an individual could own while the supermaximum was allowed only for large holdings. - Šimončić-Bobetko, op.cit. note 34. In Virovitica County, the maximum holding was 300 hectares of arable land, or 500 hectares in general.

[45] HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Minutes of March 11, 1922, written in the office of the County Agrarian Office in Osijek due to this decision of 17 / 2.1922. No. 1648, (box 3)

[46] The appeal alleges a deliberate failure to deliver the decision (the decision was delivered on May 30, 1922, and the deadline for unconditional distribution of the allocated land was May 25, 1922) to distribute the sown land to the interested parties, which the Ministry itself wanted to avoid. Furthermore, the decision to reject the supermaximum was not reasoned. In addition, the decision of the Hydrotechnical Commission according to which all "supermaxims" of large holdings in the area of the water cooperative should be excluded from the division under the Agrarian Reform until the adoption of the law was completely ignored. They also state the fact that far more land was taken away from them than other landowners (470 acres had been taken away from them until then). Furthermore, the economic expert did not examine the property and circumstances exactly at all and is asking for a new inspection which they are willing to pay for. The appeal was accompanied by certificates from the sugar factory in Osijek and the Slavonian hemp and flax factory d.d. in Osijek with proof that the areas have been sown with sugar beet and hemp for the last 10 years. - HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Appeal to the County Agrarian Office in Osijek against the decision of 24 March 1922 No. 2807/1922, (box 3)

the confiscation but also in the huge damage because after the property had been cultivated the agrarian office would come to perform the separation which is against the regulations. [47] That the agrarian reform was carried out selectively and unfairly is confirmed by the fact that Blau's heirs, with an additional 390 separate acres, lost another 93 acres while Pfeiffer's estates (1500 and 1700 acres) remain intact.[48] The Novi Sad Agrarian Directorate in Belgrade rejected this appeal.[49] Dissatisfied with the rejection they appealed to the County Agrarian Office in Osijek.[50] On December 18, 1924 the Minister annuled the decision of the agrarian directorate under the order to conduct a new separate hearing. On December 10, 1928 the sisters gave a statement emphasizing that the separation hearing had not taken place and asked for the suspension of any further separation of land that resumed on November 21, 1928.[51]

Based on multiple attempts to regain possession of the property by the co-heirs, Minister Dr. Frangeš changed the decision of his predecessor to return the confiscated land of supermaximum and maximum.[52] However, the arbitrariness of the subordinate body will only be highlighted when, despite the decision, the Osijek County Agrarian Office did not execute the decision under the pretext that the minister's decision could not be executed due to the lack of land to which the volunteers would move.[53] After many years of attempts to regain property, the sisters finally obtained legal protection when the Osijek County Agrarian Office on June 22, 1929 brought a solution in their favor.

Matilda Hengl's legal and procedural activity certainly came to the fore after the end of the Second World War, when the authorities of the People's Republic of Croatia forcibly and legally carried out the nationalization and expropriation of valuable property in the general or public interest. By the decision on the expropriation of the city People's Committee in Osijek no. 20264/49 of 5 May 1949, for the needs of the City People's Committee and in favor of the public property, the most valuable real estate of the Hengl family was confiscated, the house on Bulevar Jugoslavenske Narodne Armije no. 24. which was discussed at the very beginning of this research. The confiscated real estate was to be used for the purpose of resolving the

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[47] The ministry banned the lease of large estates on a four-year lease. In the appeal, they point out that it is inconceivable that an order of the administrative authority can change the legal situation created by a positive law. It is further noted that the confiscation of these lands creates great damage to the main economic district, and it is once again noted that the Law on Leasing Underwater Land from 1922 is being violated. - HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Appeal to the County Agrarian Office in Osijek against the decision of 28 February 1924 No. 1751/1924, (box 3)

[48] Ibid.

[49] HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Decision of the Agrarian Directorate of Novi Sad in Belgrade, April 9, 1924. no. 1041, (box 3)

[50] The decision of the Novi Sad Agrarian Directorate explains that Blau's heirs do not need the supermaximum left because the legal maximum (186 acres) is sufficient. In addition, they are complaining about the decision by which the previously allocated land was taken away from them as the first half of the maximum and given to volunteers and colonists (over 42 acres) and they demand that this complaint be submitted to the Minister of Agrarian Reform to respect the reasons and annul the Novi Sad directorate. - HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Appeal to the County Agrarian Office in Osijek against the decision of the Agrarian Directorate of Novi Sad in Belgrade of 9 / 4.1924. no. 1041, (box 3)

[51] HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Statement to the County Agrarian Office in Osijek on December 10, 1928, (box 3)

[52] HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Decision of the Ministry of Agrarian Reform, no. 44220/28, January 31, 1929. Belgrade, (box 3)

[53] HR-DAOS-871 Vjekoslav Hengl, 1.3.3. Agrarian reform of the estate of Josip Gustav Blau, Subject: Marija Janković and Matilda Hengl, heirs of the Landowner Josip Blau, request for the return of the super-maximum, Ministry of Agriculture of the Kingdom of Serbs, Croats and Slovenes, no. 23.065 / 29.

housing issue of the Hall of the Yugoslav People's Army (hereinafter The Hall of JNA)[54] In an attempt to return the confiscated property, and in particular to regain possession of the confiscated family house from which she was evicted with her husband, Matilda repeatedly filed appeals against various decisions in the case. Referring to the illegality of the act depriving her of ownership of the property, in her appeal she also requested compensation from the People's Committee of the city, considering that the rent determined by the decision was not paid to her from the moment of eviction, but significantly later, from the moment of the decision on the accommodation of The Hall of JNA. [55] The decision on the appeal states that the ownership of the real estate was not transferred to another entity since the adoption of the expropriation act, and Matilda Hengl is still the owner of the disputed real estate. The reason for this is the fact that the Government of the People's Republic of Croatia did not confim the act of expropriation, which is an important precondition for the validity of such legal acts. Thus, the appellant's allegation that her building was illegally taken away is unfounded, given that the appellant was only evicted from the property. With regard to the second allegation in the appellant's appeal, the question of the beginning of the lease is evident from the Osijek Municipal Department's response that the lease was later based on the appellant's guilt, which did not want to establish the relationship earlier. With regard to the amount of rent which the appellant also sought to amend in the appeal, it was established that the rent was determined by a decision of the separately appointed Commission, and on the basis of the 1939 tax form of that property. [56] As the tax form could not be found in the tax office archives, it was subsequently searched on the appellant's appeal, and the tax form found that the income from the 1939 property was half the amount determined by the previously challenged decision.[57] The finding of the tax form served the competent body to issue a new decision on determining the rent in the same case. [58] The new decision categorized real estate into the third category of residential buildings for which the payment of rent of 5 dinars per m² was determined, while

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[54] Based on the report of the Supervisory Board in Osijek no. 11919/51 of 29 June 1951 The Government of the People's Republic of Croatia issued Decision no. 3669-52 of 9 April 1952 by which it repealed the act of expropriation and instructed the People's Committee of the City of Osijek to resolve the issue of the accommodation of the House of the Yugoslav People's Army as a housing issue. On that occasion, the Supervisory Board of the City of Osijek issued a decision no. 9114/52 of 18 May 1952, by which the use of the premises in the real estate on Bulevar JNA no. 24 determined rent in the amount of 5,442 dinars and that the payment of rent should be made from May 1, 1953. The category of real estate which determines the amount of rent is determined by the Instruction of the Federal Statistical Office on the categorization of apartments and business premises from 1949. All decisions made in various proceedings regarding the return of the family house of Matilda Hengl, which are listed below, are contained in the archives: HR-DAOS-871 Vjekoslav Hengl, 1.2. Family documentation.

[55] On May 5, 1952, the People's Committee of the City of Osijek issued an expropriation act no. 20.264 / 1949 houses on JNA Boulevard no. 24. The act was submitted for approval to the Presidency of the Government of the People's Republic of Croatia in terms of the provisions on expropriation. As the Act was not found in the contents of the fund, the Department for Communal Affairs sent an Explanation of the current situation in the Hengl Matilda case - appeal for rent, to the General Directorate for Communal Affairs of the People's Republic of Croatia in Zagreb, June 6, 1952. The decision is marked with the number 12983 / 1952.IV.Dr.R. The appeal was decided by a special body, the General Directorate for Communal Affairs, and the decision on appeal no. 334-II-1952 in the Hengl Matila case, the rent dispute was brought on 18 June 1952. The decision dismissed the appeal as regards the amount of the rent and partially upheld it as regards the period from which the rent was to be paid.

[56] The Commission was appointed by the decision of the People's Committee no. 9114/532. -1 / PH April 17, 1952 The conclusion of the decision states that a Commission is to be formed to determine the amount of rent for the house on Bulevar JNA no. 4 with Matilda Hengl being instructed to ask The Hall of JNA for the remaining rent.

[57] Explanation of the current situation in the Hengl Matilda case - appeal for rent, the Department of Communal Affairs sent to the Main Directorate for Communal Affairs of the People's Republic of Croatia in Zagreb, on June 6, 1952 the decision was marked with the number 12983 / 1952.IV.Dr.R.

[58] Decision no. 9114 / 1952- The establishment of rent in The Hall of JNA was passed on October 22, 1952 at the request of The Hall of JNA. Thus, the content of this decision replaced the content of the decision in the same case passed on 18 May 1952. The earlier decision lost its legal force.

for the apartment in the basement of the real estate the rent in the amount of 3 dinars per m² was determined, considering that it belonged to the forth category. The total rent is set at 4968 dinars per month.

Matilda filed an appeal against this decision as well. [59] The appellant clearly stated in the content of the appeal that she held that "*the impugned decision violated the law by the Department for Communal Affairs of the National Committee of the City of Osijek, when after an earlier decision of 18 May 1952 no. 9114, against which the Hall of JNA did not appeal, issued the impugned decision, while still incorrectly determining the categorization and incorrectly calculating the area of individual rooms in the house of the signatory.*"[60] It is particularly important to convey the explanation of the grounds of appeal in details as they clearly show the real circumstances that marked the confiscation of valuable real estate in the post-war period and the way in which administrative and judicial procedures were adapted to turn them into common property. In order to determine the lower rent, the competent Commission categorized the Hengl family house as a third category building, although it was a notorious fact in Osijek that the property was undoubtedly the best decorated building in the city in terms of its equipment and location and belonged to the first category. By incorrectly categorizing the real estate, the appellant was damaged not only by the loss of possession, but also by the amount of rent that was not appropriate to the actual value of the real estate. Furthermore, the Commission erred in determining the area of the property by deducting 285 m² of living space for which no rent was determined in the contested decision. Furthermore, the Commission did not determine the value of the property according to its condition and equipment at the time of its confiscation on 5 May 1949, but from the time the Commission was formed on 17 April 1952 when the tenant, the Hall of JNA, had resided there for some time. The appellant proposed to the competent authority to put the impugned decision out of force due to unfoundedness.

The Osijek Municipal Utilities Department also commented on the appellant's allegations.[61] It is clear from the content of the decision that the competent body refuted all the appellant's allegations and proposed rejecting of the appeal. The long dispute ended with a decision of the People's Committee in Osijek, the Commission for Resolving Appeals in Housing Cases.[62] According to the operative part of the decision, the appeal was rejected, and the challenged decision of 22 October 1952 was upheld in its entirety. The contents of the archive fund further reveal the confirmation of the drawn up gift contract that Matilda concluded with the National Committee in Osijek of the municipality of Gornji Grad on the donation of the estate.[63]

It remains to be mentioned that the last legal act that Matilda concluded by declaring her will was her will. Available through the minutes of the probate hearing of the Municipal Court in Osijek, it is a bit surprising in its content. [64] The large disproportion in the testator's assets in

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[59] The complaint was sent to the Economic Council of the People's Republic of Croatia through the Department for Communal Affairs of the National Committee of the City of Osijek on November 4, 1953.

[60] Case: Matilda Hengl - Housing Appeal, no. 26449 / 1953.IV.Š.

[61] Case: Matilda Hengl - Housing Appeal, no. 26449 / 1953.IV.Š. The statement was sent to the Commission for Resolving Complaints in Housing Cases of the Supervisory Board of the City of Osijek.

[62] No. 26449/1953. The Decision was brought on 30 December 1953.

[63] The confirmation on taking over the contracted legacy, no. 06-578 / 1-1967 from May 5, 1967, which was taken over by the Municipal Assembly Commission on February 14, 1967. In 1936, Matilda Hengl made a written will in which she left her house together with the furniture and handed over more than 5,000 volumes of books to the Osijek City Municipality. The content of the will cannot be determined as it is missing from the fund.

[64] HR-DAOS-140 Municipal Court in Osijek, Hengl Matilda, inheritance, no. 87/67, September 7, 1967. The testamentary heirs of Matilda (Ivan Knoblohusin of the deceased sister Marija Janković) was left all of her

relation to the previously established decision on the inventory of Matilda Hengl's[65] property is certainly the result of the nationalization of valuable assets, but the illegality of such actions should be addressed by some other research.

Despite the fact that Matilda Hengl repeatedly acted before various public bodies regarding the eviction from the family home, trying to regain possession of the property, to challenge the legal basis of the acts that deprived her family of valuable property, it must be emphasized that after her husband's death she participated in all further proceedings all by herself without any legal representation or legal aid. The number of such actions clearly reflects her disadvantage, which is primarily conditioned by the political and social situation, and significantly less, or even not at all, by acting as a woman. Only in one part of the proceedings in the Matilda family home case was she represented by a representative on the basis of a power of attorney. A special power of attorney for representation was drawn up only in the case of the appeal of the City People's Committee in Osijek against the decision of the Department of Communal Affairs in Osijek no. 9114/52-IV-Ž of 18 May 1952.[66] She seems to have considered legal aid necessary, aware that she was taking the last action related to the repossession of the property because in all previous proceedings she would lose the possibility to act by either rejecting, i.e. refusing legal action, or by losing the possibility of acting upon the expiry of the opportunity to bring legal remedies.

4. Conclusion

Taking into account the social and political circumstances to which she was exposed in different periods of her activity, and based on a comprehensive analysis of the available material on the legal position of women in Osijek in the observed period, the following can be pointed out. Despite the adopted patterns and traditional values that primarily influenced the position of women in society from the beginning of the 20th century, making her a subordinate subject of various legal relations, Matilda Hengl shows the opposite by taking procedural actions regarding the disposal of inherited property.

The first part of the research of archival material, which covers the period of the first 20 years of the last century, shows how Matilda was represented by her husband in a civil lawsuit as well as in numerous cases of managing inherited real estate. Despite the established pattern and the provisions of the General Civil Code on the position of women in marriage, we believe that representation in court and administrative matters is conditioned by the profession of Matilda's husband and does not indicate the subordinate position of women. This is supported by the results of the analysis of the material in the second part of the research, which undoubtedly affirm women as an equal subject in civil litigation, as well as numerous proceedings before public bodies. This is especially evidenced by the success achieved in the process of restitution of property of co-heirs seized by agrarian reform. Although the process of repossession of the confiscated family home in which Matilda participated using all the appellate possibilities at her disposal resulted in a procedural failure, it cannot be argued that the dispute would have had a different outcome if she had been professionally represented in the proceedings.

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property which consisted of two properties registered in the title deed 1222 k.o. Osijek. Markovic Lenka, the housewife who served her, was left the right of easement to use the premises in the four-room apartment in which she lived.

[65] See note: no. 34.

[66] The power of attorney to lawyer Stanko Muičević was signed by Matilda Hengl on May 31, 1952

Matilda Hengl, however, is impossible to look at from the angle of an average woman from the beginning of the 20th century. Her social status was built on the economic influence of her family, and the property she inherited and the need to dispose of it well enabled her to move away from the traditional patterns that made a woman in civil society exclusively a good wife.

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INFORMATION SEEKING IN THE WORKPLACE: A STUDY OF EMPLOYEES IN EASTERN CROATIA

ABSTRACT

Employees' information needs usually depend on their work tasks and obligations they fulfill within the specific profession which impact their information seeking behavior. This paper presents some main findings from the available studies in which authors mostly explored information seeking of the engineers, scientists, and managers. It also describes the research whose aim was to find out how employees from different occupations seek and use information in their workplace. In the research was used quantitative methodology via an online questionnaire filled out by 553 respondents employed in public or private institutions/companies from eastern Croatia. Research results showed that the majority of the respondents work in the field of education and science and that most of them often seek information to complete their work tasks and to solve problems. Employees mostly use online information sources (Internet) and consult their colleagues or associates to get information in the workplace. Respondents mainly point out that information they find in the workplace is useful to perform the job successfully. Around a third of the respondents indicates that they have difficulties in seeking information, which is related to a large amount of unnecessary information and limited access to quality information. Most of the employees agree that information they use for work should be accurate and reliable and that it is important that information is recent and up to date. The results of this research could be useful to employers in educational or cultural institutions, as well as entrepreneurs from eastern Croatia, and give them the incentive to provide additional information sources to increase their institutions' business efficiency.

***Keyword**s: information seeking, information use, employees, quantitative study, eastern Croatia.*

1. Introduction

In the studies concerning information seeking behavior authors explore information needs of individuals or the groups with similar characteristics who seek and use specific information

sources to satisfy those needs due to a lack of knowledge. Saracevic (2009) points out that information seeking is a process of obtaining goal oriented information, while through information searching people retrieve information systems or channels to find information. Case (2008) divides respondents in information behavior studies into several main groups: demographic group (for example children, adults), social roles group (e.g. patients) and work occupations group (such as engineers, scientists, managers, health care providers etc.), which refers to information seeking behavior of the people in different professions.

Since the mid-20th century, ways of individual seeking and use of information for professional purposes have been studied, usually related to various tasks employees undertake in the workplace. Leckie, Pettigrew and Sylvian (1996), in their model of the information behavior of professionals, were among the first to describe the effect of work roles and tasks on information needs, which are determined by different sources of information (printed, personal, formal, informal). Furthermore, context, the complexity of the situation, accessibility, quality, and source reliability are merely some of the factors that affect the information seeking process. According to Savolainen (2012), work-related information seeking is driven by the necessity to complete the task or solve a problem, which creates the need for information. Likewise, Savolainen (2010) emphasizes that work-related information seeking refers to seeking problem-specific information (e.g., finding facts) or seeking orienting information (e.g., monitoring everyday events). Hertzum and Simonsen (2019) state that employees, once they have the necessary information, use it to solve work-related tasks and are motivated by the goal of solving all their work-related problems and tasks.

In addition to enabling employees to perform their tasks, information seeking also helps them adjust to the work environment. In this context, Myers, S. A. et al. (2015) note that employees need technical information for competent performance of all work-related obligations, referent information through which they get acquainted with what is expected of them at work, appraisal information for the assessment and performance, social information about colleagues and their relationships, normative information about the culture of the organization and the workplace, organizational information about the organization of work (e.g., about procedures and logistics within the organization) and political information about the authorities of the organization.

This paper will describe some of the most important findings from previous research on how professionals (e.g., engineers, scientists, managers) seek and use the information to perform work-related requirements. Besides, it will present the results of quantitative research, the aim of which was to determine how employees of various public institutions and private companies in eastern Croatia seek information and which sources of information they use in the workplace. To our knowledge, there has been no research that has dealt with this topic in Croatia so far.

2. Information seeking in different professions (literature review)

Research on how experts of various professions seek work-related information mostly examines information needs, the sources of information used by employees, and the criteria for selecting the sources. Du and Arif (2011) argue that experts evaluate the quality and content of information sources based on their availability, simplicity, relevance, coverage, accuracy, reliability, objectivity, credibility, usefulness, recommendations of superiors or work colleagues, etc.

When it comes to engineers, Leckie, Pettigrew and Sylvian (1996) explain that they can be engaged in various jobs such as product development, design and testing, management,

consulting, sales, research, etc. In doing so, they rely heavily on the personal knowledge and experience of their superiors and associates. Regarding printed sources, they often use technical reports, manuals, and catalogs. Engineers in smaller companies mostly use internal sources of information they need for plans, procedure development, etc. Although, in consulting, engineers are more oriented to external sources of information (e.g., market information about customers), they need various economic, external, and internal information for tasks related to administration or management because this could relate to finding new clients and planning budgets. According to a small quantitative survey conducted by Kwasitsu (2003), in one American company, more than half of the engineers (51.4%) sought information to solve the problem and cited their business groups (68.6%), personal memory, and documents (60%) as very important sources of information. In choosing sources by engineers the most important characteristics were the availability of information (82%), technical quality (68.6%), and relevance (65.7%).

Research results in some studies suggest that scholars use different sources of information to do work-related tasks. Tiratel Romanos (2000) finds that scholars from humanities and social sciences in Argentina mostly consult colleagues and specialized literature. Meho and Tibo (2003) also reveal that scholars use formal channels of information (newspapers, journals, book reviews, conference proceedings) on the one hand, and informal channels of information (friends and colleagues) on the other. Furthermore, Niu and Hemminger (2012) report that scientists in the natural, technical, and medical sciences use a combination of printed and electronic reading formats, and more than half of those surveyed had a collection of their papers. Engel, Robbins, and Kulp (2011) state that scientists from engineering colleges in the US prefer scientific journals, online resources, and live discussions with students and colleagues as sources of information, while they rarely visit libraries. In addition, Wellings and Casselden (2017) in their quantitative study report there is no significant difference in the sources of information used by engineers and scientists in the UK, as both mostly choose electronic sources (search engines and specialized databases). Thus, modern digital technology allows engineers and scientists to find the information they need for the job quickly and easily on the Internet.

Some research has indicated that various factors affect managers' choice of work-related sources of information. For example, Alwis, Majid, and Sattar Chaudhry (2006) identify four key dimensions of source preference among managers: contextual (e.g., different managers' work roles, the nature and complexity of tasks, the information environment, and hierarchy position), situational (e.g., mission, culture, structure and size of the company and industry, and company orientation towards users), personal and socio-cultural (e.g., personal goals, work experience, professional qualifications, IT skills, information seeking styles, etc.), and information dimension (e.g., quantity, quality, form and credibility of information, awareness of sources, physical accessibility, type of documents, format, etc.). Jorosi (2006) finds that managers from small and medium-sized enterprises in Botswana spend an average of 5 hours per week looking for information. His quantitative research indicates that respondents mainly use personal resources (e.g., business associates), electronic media, newspapers, and government publications, and choose information according to accessibility and ease of use to perform routine tasks and make important decisions. According to Leaptrott and McDonald (2011), female managers in the US generally refer to individuals at various hierarchical levels of the organization as sources of guidance and information. On the other hand, Maurel and Bergeron (2007), in their qualitative study, reveal that more than half of the problem situations among managers are related to physical resources or legal and prescriptive matters. Mentioned authors point out that information systems and services should account for the different

dimensions of problem situations and enable information to be effectively retrieved and used among managers. Svarre and Gaardboe (2018) in a survey conducted in Denmark find that, unlike other employees, managers use business reporting systems to a lesser extent, which is contrary to the results of some previous studies.

3. Research methodology

This research aim is to examine work-related information seeking and use by employees of different occupations in eastern Croatia. The research questions are:
- Why do employees seek and use work-related information?
- Which information sources do employees use in the workplace?
- What difficulties do employees encounter when they seek information for their job?

A questionnaire was designed for this study, containing general demographic questions (age, gender, level of education, place of work, work experience), questions about the institution/company (sector, number of employees, type of business/services the institution/company does/provides), questions about information seeking and use (frequency and purpose, ways of looking for information, difficulties in finding information, the usefulness of the information), attitudes in choosing or using the information in the workplace (grading on the Likert scale), and finally, an optional open-ended question, in which respondents suggested what the institution/company should do to provide additional information sources for enabling effectiveness. Although most of the questions were of the closed type, in some of them the respondents were able to add their answers.

The quantitative method was used in the research in such a way that the online survey (questionnaire in Google document) was distributed to employees working in public institutions and private companies in Osijek-Baranja County. Most of the questionnaires were sent by e-mail to professors who work at the faculties of the University of Osijek and to the owners or employees of some companies and enterprises in the County (1243 participants). Also, some employers forwarded questionnaires via mobile applications to their colleagues or associates. Because of this, it is not possible to determine the total number of neither surveys sent nor the response data. The anonymous survey was available from 11 to 26 January 2021. The sample consisted of 553 respondents. All data were statistically and descriptively analyzed, and some are presented in the tables as well.

4. Results and discussion

More female (n=360, 65.1%) than male respondents (n=193, 34.9%) participated in the research. The respondents were mostly middle-aged: 40–49 years old (n=164, 29.6%) and 30–39 years old (n=158, 28.6%). This is followed by respondents of 50–59 (n=118, 21.3%) and 18–29 (n=91, 16.5%) years of age. There weren't many respondents over 60 years old (n=22, 4%). The data are presented in Table 1.

Table 1: Respondents' age

Age group	n	%
18–29	91	16.5
30–39	158	28.6
40–49	164	29.6
50–59	118	21.3
over 60	22	4
Total	553	100

Source: Authors

Concerning the level of education (Table 2), slightly less than half of the respondents graduated from college (n=245, 44.2%), and about a third have a doctorate (n=190, 34.4%). Respondents who finished high school (n=96, 17.4%) and higher professional school (n=22, 4%) were the least represented in a sample.

Table 2: Respondents' level of education

Level of education	n	%
High school	96	17.4
Higher professional school	22	4
College	245	44.2
Doctorate	190	34.4
Total	553	100

Source: Authors

As expected most respondents are employed in the public sector (n=449, 81.2%), while others work in the private sector (n=104, 18.8%). The highest number of respondents indicated Osijek as a place of work (n=447, 81%). Others indicated the following headquarters of their institutions/companies: Zagreb (n=33, 6%), Đakovo (n=12, 2.2%), Beli Manastir (n=9, 1.6%), Vinkovci (n=7, 1.3%), Našice, Požega, Vukovar (n=5, 0.9%), Donji Miholjac, Višnjevac (n=4, 0.7%), Županja (n=3, 0.5%), Antunovac, Laslovo, Varaždin (n=2, 0.4%), Belišće, Čepin, Kutjevo, Orahovica, Otok, Pakrac, Pleternica, Slavonski Brod, Valpovo, Virovitica (n=1, 0.2%).[1]

Table 3 shows the majority of respondents work for institutions/companies with up to 50 employees (n=116, 21%) and up to 100 employees (n=115, 20.8%), followed by companies with up to 200 employees (n=87, 15.7%), those with up to 150 employees (n=74, 13.4%), those with more than 250 employees (n=63, 11.4%), those with up to 250 employees (n=50, 9%) and institutions/companies with up to 10 employees (n=48, 8.7%). Most of respondents have up to 10 years (n=195, 35.3%) and 20 years (n=174, 31.5%) of work experience. Less than a quarter of respondents have up to 30 years (n=118, 21.3%) of work experience, while the smallest number of respondents have been working for more than 30 years (n=66, 11.9%).

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[1] The responses from those who stated they work outside of eastern Croatia were also considered in the analysis because it is likely that their place of employment differs from the place they live.

Table 3: The size of the institution/company

The size of the organization/company	n	%
Up to 10 employees	48	8.7
Up to 50 employees	116	21
Up to 100 employees	115	20.8
Up to 150 employees	74	13.4
Up to 200 employees	87	15.7
Up to 250 employees	50	9
More than 250 employees	63	11.4
Total	553	100

Source: Authors

In relation to career fields (Table 4), slightly more than half of the respondents are employed in education and science (n=318, 57.5%). Other respondents are employed in culture (e.g., libraries, archives, museums, art, media) (n=63, 11.4%), administration and management (n=57, 10.3%), sales and marketing (n=32, 5.8%), manufacturing (n=29, 5.2%), IT sector (n=18, 3.3%), health and welfare (n=15, 2.7%), service industry (e.g., catering, finance, tourism, transport) (n=14, 2.4%), and in the justice system, police, and army (n=7, 1.4%).

Table 4: Career field of the respondents

Career field	n	%
Education and science	318	57.5
Culture	63	11.4
Administration and management	57	10.3
Marketing and sales	32	5.8
Manufacturing	29	5.2
IT sector	18	3.3
Health and welfare	15	2.7
Service industry	14	2.4
Justice system, police, and army	7	1.4
Total	553	100

Source: Authors

Table 5 shows that nearly half of the respondents seek work-related information very often (n=251, 45.4%), approximately one-third of respondents seek information often (n=175, 31.6%), and less than a quarter of respondents look for work-related information occasionally (n=104, 18.8%). Quite a small number of respondents rarely (n=21, 3.8%) or never (n=2, 0.4%) look for information.

Table 5: Frequency of seeking work-related information

Frequency of seeking information	n	%
Never	2	0.4
Rarely	21	3.8
Occasionally	104	18.8
Often	175	31.6
Very often	251	45.4
Total	553	100

Source: Authors

As presented in Table 6, the largest number of respondents seek and use the information in the workplace to perform work tasks (n=527, 95.4%) and to solve problems (n=435, 78.7%), which is consistent with the claims of Savolainen (2010), Hertzum and Simonsen (2019) and similar to the results obtained by Kwasitsu (2003). About half of employees seek and use information for decision making (n=305, 55.2%), which was also found by Jorosi (2006), and for promotion at work (n=277, 50.1%). Interestingly, a third of respondents seek and use information in the workplace for private purposes (n=183, 33.1%). Only 2 respondents do not seek additional information in the workplace (0.4%).

Table 6: Reasons for seeking and use of information in the workplace

Reasons	n	%
Work-related tasks	527	95.4
Problem-solving	435	78.7
Decision-making	305	55.2
Promotion	277	50.1
Private purposes	183	33.1
Not seeking (additional) information	2	0.4

Source: Authors

As hypothesized, respondents mostly look for work-related information in online sources such as the Internet and databases (n=499, 90.3%), in consultations with colleagues and associates (n=421, 76.1%), and in official and formal documents (n=395, 71.4%). This is in line with the findings of Tiratel Romanos (2000), Meho and Tibo (2003), and Wellings and Casselden (2017). Slightly more than half of the respondents seek information in the organization's internal documents (n=323, 58.4%) and confers with superiors (n=317, 57.3%), as Leckie, Pettigrew and Sylvian also found (1996). Less than half of the respondents use personal notes (n=232, 42%), and about a third of them uses library services (n=187, 33.8%) to find information, which is similar to the results obtained by Jorosi (2006), Engel, Robbins and Kulp (2011) and Niu and Hemminger (2012) and differs somewhat from the results reported by Maurel and Bergeron (2007) and Leaptrott and McDonald (2011). A small number of respondents seek work-related information via social networks, e.g., Facebook (n=98, 17.7). Merely few respondents stated they do not seek (additional) information in the workplace (n=4, 0.7%). The results are presented in Table 7.

Table 7: Sources of information in the workplace

Sources of information	n	%
Online (Internet, databases)	499	90.3
Colleagues and associates	421	76.1
Formal and official documents	395	71.4
Organization's internal documents	323	58.4
Superiors	317	57.3
Personal notes	232	42
Library	187	33.8
Social networks (Facebook)	98	17.7
Not seeking (additional) information	4	0.7

Source: Authors

On a scale of 1 to 5, respondents rated the usefulness of the obtained information for doing their job successfully (Table 8). Less than half of them claim that the information is extremely useful (n=269, 48.6%) and useful (n=216, 39.1%), while some respondents state that the information is moderately useful (n=51, 9.2%), somewhat useful (n=13, 2.4%) and not at all useful (n=4, 0.7%). In total, respondents consider that the obtained information is mostly useful to them, which is confirmed by the calculated values (mean=4.3, median=4, mode=5).

Table 8: The usefulness of information for employees

The usefulness of information	n	%	Mean	Median	Mode
(1) not at all useful	4	0.7			
(2) somewhat useful	13	2.4			
(3) moderately useful	51	9.2	4.3	4	5
(4) useful	216	39.1			
(5) extremely useful	269	48.6			
Total	533	100			

Source: Authors

Next, respondents discussed the difficulties they encounter in seeking information in the workplace (Table 9). Slightly more than a third of respondents faced too large amount of unnecessary information (n=217, 39.2%), while, on the other hand, many respondents stated they do not encounter any difficulties in seeking information (n=210, 38%). About a third of them point out they have limited access to quality information (n=206, 37.3%), and a quarter states that seeking information is time-consuming (n=143, 25.9%). A small number of employees indicate that the information is outdated (n=106, 19.2%) and report that they cannot find reliable and accurate information (n=74, 13.4%). These results indirectly point to the factors affecting the information sources, discussed by Leckie, Pettigrew and Sylvian (1996), Alwis, Majid and Sattar Chaudhry (2006), and Du and Arif (2011).

Table 9: Difficulties in seeking information in the workplace

Difficulties in seeking information	n	%
Too large amount of unnecessary information	217	39.2
No difficulties	210	38
Limited access to quality information	206	37.3
Seeking information is time-consuming	143	25.9
Outdated information	106	19.2
Unable to find reliable and accurate information	74	13.4

Source: Authors

Respondents also expressed their attitudes about selecting and using work-related information (Table 10) on a 1 to 5 Likert scale (1 – I strongly disagree; 5 – I strongly agree). The analysis found that the majority of employees agree that the work-related information needs to be accurate and reliable, as well as recent and up to date (mean=4.9, median=5, mode=5). Most respondents verify the accuracy of information found on the Internet (mean=4.2, median=5, mode=5) and find online information useful in doing their job effectively (mean=4.0, median=4, mode=4). Respondents generally agree that the work-related information is easily accessible (mean=3.7, median=4, mode=4). Respondents get work-related information from their superiors and/or co-workers to a somewhat lesser extent (mean=3.4, median=3, mode=3). Most respondents do not agree that the COVID-19 pandemic made it difficult for them to seek and find work-related information (mean=2.2, median=2, mode=1), and that useful work-related information is only available in printed sources (mean=2.0, median=2, mode=1). These results are consistent with the previous ones in which respondents reported that they mostly use online resources in seeking work-related information, and therefore are not surprising.

Table 10: Attitudes about selecting and using work-related information

Attitudes	Mean	Median	Mode
The work-related information needs to be accurate and reliable.	4.9	5	5
Work-related information must be recent and up to date.	4.9	5	5
I verify the accuracy of work-related information I find on the Internet.	4.2	5	5
I find useful information for doing my job successfully online.	4.0	4	4
The work-related information I need is easily accessible.	3.7	4	4
I get the necessary work-related information from my superiors and/or co-workers.	3.4	3	3
COVID-19 pandemic has made work-related information seeking more complicated and difficult.	2.2	2	1
I find useful work-related information only in printed sources.	2.0	2	1

Source: Authors

The final question of the survey allowed respondents to suggest what the institution/company they are employed in could do to provide them with additional information sources to successfully do their job (Table 11). On the one hand, some employees stated that they did not have any particular suggestions because they already have enough work-related information (n=58, 21%), while on the other, some emphasized the necessity to enable access, i.e., subscriptions to databases and scientific journals (n=44, 16%), unlimited Internet access or faster Internet connection (n=24, 8%), better access and transparency of information and additional training or seminars in order to find information more efficiently (n=20, 6%).

Table 11: Suggestions for institution/company to enable additional information

Suggestions	n	%
No suggestions (there is enough available work-related information)	58	21
Access/subscriptions to databases and scientific journals	44	16
Unlimited Internet access, faster Internet connection	24	8
Better access and transparency of information	20	6
Additional training or seminars	20	6

Source: Authors

5. Conclusion

In today's busy world it is extremely important that professionals from different areas quickly and simply get the necessary information to successfully perform everyday tasks. The advance of digital technology and the Internet have enabled employees from different areas to easily find the information they need for their work. Although research has shown that respondents mostly find work-related information online, many of them have difficulties in searching for quality and relevant sources because of a large amount of information available on the Internet. On average, the majority of respondents often seek additional information to solve work-related tasks, but simultaneously, more than a third of them encounter problems related to limited or incomplete access to certain information. These problems should be handled by employers. Given that the COVID-19 pandemic has not significantly affected seeking and finding information, it can be assumed that employers have made efforts to ensure that employees have unhindered access to the resources they need for work from home.

This study is one of the first major quantitative research that analyzed how employees from various state and private institutions and companies in eastern Croatia seek and use information in the workplace and what sources of information they need to do their jobs. Since the research sample is quantitatively satisfactory, further analyses could explore differences in seeking and using the information by employees concerning their gender, age, work experience, and the size of the institution/company in which they work. The study has certain methodology limitations and data cannot be generalized, however the results can be useful for employers and entrepreneurs from Osijek-Baranja County to identify which information their employees need to successfully perform their job. In addition, based on the presented data, employers can provide people working in the field of education, science, and culture some additional sources of information (e.g., databases) through school, academic, and public libraries. This could contribute not only to the overall efficiency of the institutions and enterprises, but also to the economic development of eastern Croatia.

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CIRCULAR ECONOMY AND AGRICULTURAL WASTE MANAGEMENT IN CROATIA

ABSTRACT

Circular economy (CE) tends to be sustainable by copying the nature where everything returns to the cycle. The reason for that lays in the fact that world human population is growing by geometric progression as well as waste disposal. Furthermore, the application of the economy in a linear way as before is affecting the degradation of the environment. In the European Union, more than half of the total waste relates to agricultural waste (1.3 and 0.7 billion of tons, respectively). Unlike other EU countries, which is considered as the most green-conscious region in the world, Croatia is only at the beginning of its way to the circular economy transition. The circular economy does not tend to the mere waste disposal, but it goes a step further in the direction of waste management and re-production and recycling of waste into new useful products. The agricultural waste is harvest residues, excrements of domestic animals and residues from the fruit and wine industry among others. These by-products can be raw-material for new re-cycled products (organic fertilizers, compost, products of the food and pharmaceutical industry, electric power etc.) that have their own market value and can represent additional income for farmers. The aim of this paper is to give literature in-depth review about CE and situation regarding agricultural waste management in Croatia. On a base of this analysis we will present information regarding CE regulatory frame in EU and Croatia as well as position of Croatia regarding adoption of EU-CE incentives (eco-innovation index and eco-innovation scoreboard). The special part will address the issue of waste management in agriculture, with respect to Croatian situation and praxis. On a base of this results we will contribute the knowledge regarding CE and waste management and offer recommendations for a better solution of waste management problem in Croatia.

Keywords: C*ircular economy, Agriculture, Croatia, Waste management.*

1. Introduction

Economist Kenneth Boulding introduced the Circular economy (CE) concept first in 1966 in his essay 'The Economics of Coming Spaceship Earth' (Boulding, 1966). This concept is

further elaborated by the ecological economists Pearce and Turner in their book 'Economics of natural resources and the environment' (Jensen, 1998). According to the European Union (EU), the CE is supposed to 'boost global competitiveness, foster sustainable economic growth and generate new jobs' (European Commission, 2016.).

Circular economy should become a priority not only for Europe but also for the whole world. While relevant European investments are still limited due to the multiple crises facing various policies, circular economy, coupled with the digital transformation, offers a unique opportunity to boost growth, employment, while it could mitigate or even eliminate several major problems such as CO_2 emissions, wastewater, bio-waste, scarcity of raw materials, etc. In this sense circular economy could tackle the emerging major problems that have exacerbated the environmental and life conditions, and which constitute mainly the following:

- Climate change
- Water scarcity
- Limited natural resources
- Decline in biodiversity
- Distorted urbanization that degrades the urban environment
- Rapid demographic growth - by 2050 the population is expected to reach 9,7 billion, with a corresponding increase in demand for natural resources (European Commission, 2020a, 14)

Circular economy tends to be sustainable by copying the nature where everything returns to the cycle. The reason for that lays in the fact that world human population is growing by geometric progression as well as waste disposal. Andabaka et al. (2018, 115) claims there is a two reason for such situation. First, the world population is increasing at growing rates and the scarce resources are to be exhausted. Second, linear economy leads towards environmental degradation that contributes to the climate change. Circular economy systematically changes the way the economy functions.

Unlike other EU countries, which is considered as the most green-conscious region in the world, Croatia is only at the beginning on its way to the circular economy transition. The circular economy does not tend to the mere waste disposal, but it goes a step further in the direction of waste management and re-production and recycling of waste into new useful products. EU countries produce 1.3 billion tons of waste annually and 700 million tons of it is agricultural waste (Toop et al., 2017, 76). Agricultural-based industries produced the vast amount of residues every year. If these residues are released to the environment without proper disposal procedure that may cause environmental pollution and harmful effect on human and animal health. Most of the agro-industrial wastes are untreated and underutilized, therefore in maximum reports it disposed of either by burning, dumping or unplanned landfilling. These untreated wastes create different problems with climate change by increasing a number of greenhouse gases (Sadh et al., 2018, 2). Besides this, the use of fossil fuels also contributing the effect on greenhouse gases (GHG) emission (Bos and Hamelinck 2014, 3).

Agro-industrial waste can be divided into agriculture residues (including excrements of domestic animals) and agro-industrial waste. Furthermore, agriculture residues can be further divided into field residues and process residues. Field residues are residues that are present in the field after the process of crop harvesting. These field residues consist of leaves, stalks, seed pods, and stems, whereas the process residues are residues present even after the crop is processed into alternate valuable resource. These specific by-products can be raw-material for

new re-cycled products (organic fertilizers, compost, products of the food and pharmaceutical industry, electric power etc.) that have their own market value and can represent additional income for farmers.

The aim of this paper is to give literature review of scientific results about CE, adoption CE in EU and Croatia as well as the actual situation regarding agricultural waste management in Croatia.

2. CE in scientific research

Circular economy is highly exploited topic among scientists (searches title, abstract, author keywords, and keywords) in last 5 years especially. For the purpose of this article, we research number of papers according to topic Circular economy in Web of Science database. Web of Science (WoS) is a platform published by Clarivate Analytics (formerly Thomson Reuters Intellectual Property and Science business) through which citation databases covering all areas of science are available (http://baze.nsk.hr/baza/web-science/). According to Web of Science, first scientific paper with topic CE appeared in 1989. Until 2012, there was less than 100 paper per year, in 2007 31 paper and in 2011 23 paper, respectively. In period 2012-2015 there was from 100 to 200 papers per year published, and from 2016 to 2020 this number growing fast (414 in 2016 and 2746 in 2020, respectively). According to Web of Science categories (field of research), the most of the papers are from following scientific fields: environmental sciences, followed by green sustainable science technology, engineering environmental, environmental studies, energy fuels, materials science multidisciplinary, management, engineering chemical, economics etc.

Figure 1: Scientific papers in Web of Science platform by topic circular economy - Chronological display

Source: https://apps.webofknowledge.com/
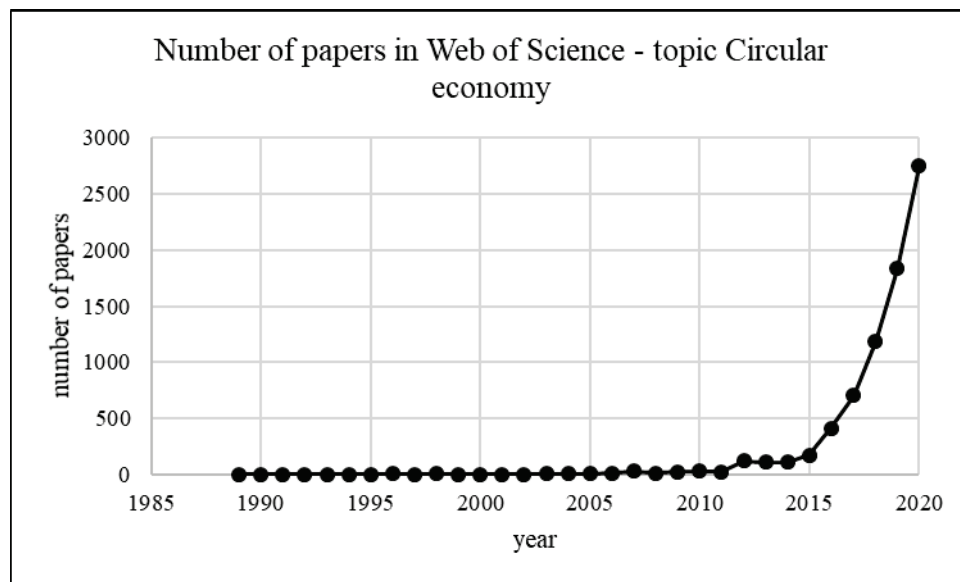
We can state that interest for this particular subject is growing significantly. The number of papers is correlated with the EU's efforts to apply CE and, consequently, with the EU legislation regarding CE (next chapter). In 2015 there was 174 scientific papers deal with circular economy, 414 in 2016, 702 in 2017, 1181 in 2018, 1835 in 2019 and 2746 in 2020.

This interest is in correlation with EU adoption of Circular Economy Package (2014) and Circular Economy Action Plan (2015).

3. CE policy in European Union

The CE has only very recently become prominent at the highest levels of European policy making. Following concern around high commodity prices, the European Commission (EC) launched a flagship initiative on resource efficiency, which was first operationalized through the Roadmap for a resource efficient Europe (European Commission, 2011). The roadmap aimed at decoupling resource consumption from economic growth. To provide high-level guidance and facilitate the transition to a resource efficient economy, the European Resource Efficiency Platform (EREP) was launched in June 2012. In July 2014, the European Commission adopted a Circular Economy Package. This was built upon the Resource Efficiency Roadmap. It included a series of initiatives such as the revision of waste legislation, a sustainable buildings initiative, a Green Entrepreneurship Action Plan, a green employment communication, and reporting on progress with the Roadmap. A communication on sustainable food systems was also drafted, but met with resistance and did not become part of the adopted package. Member States, NGOs, MEPs, and significant sections of industry then demonstrated widespread support and an appetite for a circular economy. Through a public consultation, the Directorate-General for Environment gathered insights from 1,500 stakeholders from across the private sector, civil society organisations, and public authorities between May and August 2015 (European Commission, 2020a). This public consultation helped to identify the priority sectors for the action plan. Furthermore, at the "Closing the loop" conference in June 2015, stakeholders were invited to contribute to the policy making process. And so, on 2ⁿᵈ December 2015, the Commission presented its Circular Economy Action Plan – CEAP (European Commission, 2015), including four legislative proposals on waste. CEAP was aimed to transition the European economy from a linear to a circular model. The Action Plan mapped out 54 actions, as well as four legislative proposals on waste. These legislative proposals were put forward by the European Commission along with the Action Plan and included targets for landfill, reuse, and recycling, to be met by 2030 and 2035, along with new obligations for separate collection of textile and bio-waste. The EU's Circular Economy Action Plan aimed to cover the full economic cycle — from production to consumption, repair and remanufacturing, to waste management and secondary raw materials. It encompasses a variety of material flows: plastics, food, critical raw materials, construction and demolition, and biomass and bio-based materials. Cross-cutting measures to support this systemic change through innovation and investments were also put in place (European Commission and Ellen MacArthur Foundation, 2020). More than EUR 10 billion of public funding was allocated to the CE transition between 2016 and 2020 (https://www.ellenmacarthurfoundation.org/case-studies/the-eus-circular-economy-action-plan).

Furthermore, the new Circular Economy Action Plan - For a cleaner and more competitive Europe" was delivered in 2020 for the period 2020-2024. This Circular Economy Action Plan provides a future-oriented agenda for achieving a cleaner and more competitive Europe in co-creation with economic actors, consumers, citizens and civil society organisations. It aims at accelerating the transformational change required by the European Green Deal, while building on circular economy actions implemented since 2015. This plan will ensure that the regulatory framework is streamlined and made fit for a sustainable future, that the new opportunities from the transition are maximised, while minimising burdens on people and businesses (European Commission, 2020b).

The key methods in CE are "reduce, reuse and recycle" or the 3Rs. Reducing refers to minimizing inputs of materials and energy in production process (supply) and minimizing consumers' consumption (demand). Reusing means that someone's waste is someone else's raw material. This opportunity has to be encouraged along with the production of convenient materials that can be reused. Recycling encourages transformation of used materials for a production of new products (Andabaka et al., 2018, 116). In that sense the concept of eco-design directives should be promoted as to improve recyclability. According to Heshmati (2015, 3) the CE in practice resonates with the concept of industrial ecology which aims at benefits exploration of reusing and recycling residual waste materials including energy, water, different by-products as well as knowledge.

Although EU is the creator of CE concept and pioneer in CE implementation, CE is adopted around the world, but different countries have different focus and emphases concerning CE. McDowall et al. (2017, 652) argue about the differences of approaches to CE in EU and China and stated that the CE concept emerged in Europe in the 1980s and 1990s (e.g. Pearce and Turner, 1990, 5), together with early policies of European Union (EU) member states, drawing on ideas that can be traced to the 1970s (Stahel, 1977, 6). Driven by a desire to divert waste from landfill, the Netherlands and Germany pioneered concepts of waste prevention and reduction, with the waste hierarchy introduced to the Dutch Parliament in 1979 (Parto et al. 2007, 198).

Regarding different approaches to CE in China and EU, McDowall et al. (2017, 654) concluded that based on three analytic approaches (on policy documents, media, and in research) Chinese and European perspectives on a CE share a common conceptual basis and exhibit many similar concerns in seeking to enhance resource efficiency. Yet, they also differ in their emphases. The Chinese version of the CE is more closely linked to pollution and to the broader category of sustainable development and to ecological civilization (Weng et al. 2015, 7), whereas the European versions are more focused on waste and opportunities for industry.

Waste management as concept appear much earlier than circular economy. For that matter, the inner part of CE Action Plan is waste management. Waste management has been adopted in the EEC Environmental Action Plan as early as 1972. It has been part of EU priority policy ever since (Erceg et al. 2017, 477). The policy is based on the "waste hierarchy" which sets a priority order when shaping waste policy: 1. prevention, 2. (preparing for) reuse, 3. recycling, 4. recovery and 5., as the least preferred option, disposal including landfilling and incineration without energy recovery (European Commission, 2016). Furthermore, the Circular Economy Package proposal (2015), includes different revised legislative proposals on waste which were intended for stimulation of Europe's transition towards a circular economy.

4. Eco-Innovation as concept in circular economy: Croatia position

To present position of Croatia in EU regarding CE efforts and achievements will be presented via Eco-Innovation Index and Eco-Innovation Scoreboard. The concept of eco-innovation has emerged as an approach fostering sustainable development for all societies globally. Eco-innovation can be defined as "all efforts from relevant actors that introduce, develop, and apply new ideas, behaviours, products and processes and contribute to reducing environmental burdens or ecologically specified sustainability targets" (Rennings, 2000, 322). Eco-innovation plays a key role in promoting and implementing green growth because it

promotes all forms of innovation that reduce environmental impacts and strengthen resilience to environmental pressures (Jang et al, 2015, 12587).

Measuring eco-innovation helps to understand the overall trends and raise awareness in the society, especially encouraging companies to increase eco-innovation efforts. To measure eco-innovation at the national level, two indices were developed: ASEM Eco-Innovation Index (ASEI) by the ASEM SMEs Eco-Innovation Centre (ASEIC) and Eco-Innovation Scoreboard (Eco-IS) by the Eco-Innovation Observatory (EIO).

Eco-innovation, as a new concept, and green technologies are central to the Europe's future and at the core of the European Union policies to boost competitiveness, create jobs, and generate sustainable growth for years to come. The term "eco-innovation" is commonly used to refer to innovative products and processes that reduce environmental impacts (Sarkar, 2013, 171).

European Commission approaches eco-innovation also as a significant tool that connects reduced negative impact on the environment with a positive socio-economic impact. Eco-innovations with the potential to enable the transition to resource-efficient circular economy model span effort to change dominant business models (from novel product and service design to reconfigured value chains), transform the way citizens interact with products and services (owning is replaced by sharing or leasing) and develop improved systems for delivering value - sustainable cities, green mobility, smart energy systems, etc. (European Commission, 2014, 9; Andabaka et al., 2019, 118).

Eco-Innovation Index includes following indicators: 1) Eco-innovation inputs; 2) Eco-innovation activities; 3) Eco-innovation outputs; 4) Resource efficiency outcomes; 5) Socio-economic outcomes.

When we analyse specific indicators of Eco-Innovation Index, firstly, we will define all indicators and sub-indicators:
1) *Eco-innovation inputs* comprise investments (financial or human resources) aiming to trigger eco-innovation activities. The indicators in the Eco-IS include: 1) Governments environmental and energy R&D appropriations and outlays (% of GDP), 2) Total R&D personnel and researchers (% of total employment), 3) Total value of green early stage investments (USD/capita);
2) *Eco-innovation activities* include indicators to monitor the scope and scale of eco-innovation activities undertaken by companies. The component focuses on efforts and activities rather than on actual results of innovation activity. The indicators in the Eco-IS include: 1) Implementation of resource efficiency actions among SMEs (Score), 2) Implementation of sustainable products among SMEs (% of surveyed firms), 3) Number of ISO 14001 certificates (per mln population);
3) *Eco-innovation outputs* describe the immediate results of eco-innovation activities. Indicators in this component are used to monitor the extent to which knowledge outputs generated by businesses and researchers relate to eco-innovation. The indicators in the Eco-IS include: 1) Eco-innovation related patents (per mln population), 2) Eco-innovation related academic publications (per mln population), 3) Eco-innovation related media coverage (per mln population);
4) *Socio-economic outcomes* of eco-innovation depict wider effects of eco-innovation activities for society and the economy. This includes changes in employment, turnover or exports that can be related to broadly understood eco-innovation activities. The indicators

in the Eco-IS include: 1) Exports of products from eco-industries (% of total exports), 2) Employment in environmental protection and resource management activities (% of workforce), 3) Value added in environmental protection and resource management activities (% of GDP);

5) *Resource efficiency outcomes* relate to wider effects of eco-innovation on improved resource productivity. Eco-innovation can have a twofold positive impact on resource efficiency: it can increase the generated economic value, while at the same time decrease pressures on the natural environment. The indicators in the Eco-IS include: 1) Material productivity (GDP/Domestic Material Consumption), 2) Water productivity (GDP/total fresh water abstraction), 3) Energy productivity (GDP/gross inland energy consumption), 4) GHG emissions intensity (CO2e/GDP).

In order to calculate Eco-Innovation Index (Bernard et al., 2020, 5), for normalization of dataset it is used the Min-Max Normalization scaling all values into a range from 0 to 1. This allows summing up the indices into the composite index. The overall index score of each EU-28 Member State is calculated by the mean with equal weights of the 16 sub-indicators in order to avoid a bias between the thematic areas of the index. In order to provide an index which is easy to understand and to communicate, it is scaled the composite index to a reference value, setting the EU average at a value of 100. Also, it should be noted that replacements of underlying data sources also lead to changes in the country score for the respective indicators, and thus, to some extent the direct comparability of the index results over time (ibidem).

Eco-Innovation Scoreboard (Eco-IS) is a tool to assess and illustrate eco-innovation performance across the EU member states from 2010. As of 2015, Eco-IS presents eco-innovation of 28 Member States of EU.

According to Eco-Innovation Index, EU countries are divided into 3 groups in Eco-Innovation Scoreboard: Eco-I leaders, Average Eco-I performers and Countries catching up with Eco-I leaders. EU Eco-I leaders in 2019 are: Luxemburg (score 165), Denmark (146), Finland (145), Sweden (143), Austria (130), Germany (123) and United Kingdom (118). Average Eco-I performers EU countries are: Italy (112), Netherlands (110), France (107), Spain (104), Portugal (100), Ireland (97), Czech Republic (96), Slovenia (94), Latvia (86) and Belgium (85). Countries catching up with Eco-I leaders are: Lithuania (82), Greece (75), Estonia (73), Malta (73), Croatia (72), Slovakia (62), Poland (59), Romania (57), Cyprus (56), Hungary (54) and Bulgaria (34). Although, Croatia is in third group (catching up countries) and considering Croatia was the last to join EU, we can say that situation can be improved, but Croatia hold up almost well.

Figure 2 presents the position of Croatia based on Eco-Innovation Index (Eco-II) in its cluster group - Countries that catching-up with Eco-I leaders to compare its position with the peer countries. Although, Eco-II for Croatia varies significantly, in 2013 it was the lowest (53%) and in 2014 it was the highest (91%), we can say that in average (2013-2019) it amounts 74.28%, or about 25% under EU-28 average. Although Croatia mostly participates to the third EU-28 cluster - Eco-II catching-up countries, it is not static position since after 2014, Portugal and Slovenia shifted to the Eco-II performers cluster.

Figure 2: Eco-II catching-up countries 2013-2019
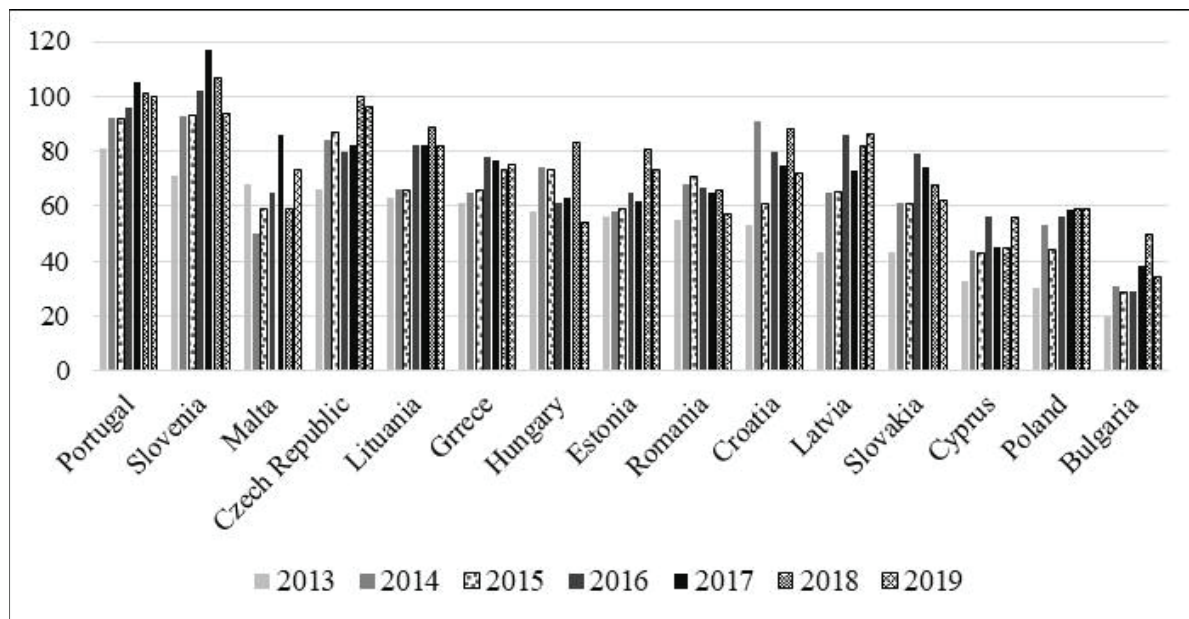
In Table 1. is presented position of Croatia in adopting CE concept according to Eco-Innovation indicators since joining EU in 2013.

The best results are noticed in the area of eco-innovation activities (89%), resource efficiency outcomes (84%) and eco-innovation outputs (79%). With these 3 indicators, the data deviation is not significant (Standard Deviation SD = 8.07, 7.64 and 19.89, respectively). Croatia's position in relation to the EU is the most unfavourable in the area of eco-innovation inputs (only 24%), while socio-economic outcomes are twice as unfavourable as in EU-28 average. The most significant deviation is noticed in the area of socio-economic outcomes (SD=56.20). According to data in Table 1 we can see that Croatia strengths are on side of eco-innovation activities - index 2, namely in the area 2.3. – number of ISO-14001 registered organizations (182% in 2019.), and in the area 2.1. - Implementation of resource efficiency actions among SMEs (Score) – 94% in 2019. Also the strength is resource efficiency outcomes, - index 4, especially sub index 4.2. - Employment in environmental protection and resource management activities (% of workforce) which was 179% in 2019. as well as sub index 4.3. - Value added in environmental protection and resource management activities (% of GDP) that scored 90% in 2019. The most important weaknesses in Croatia eco-innovation performance is in index 1. – Eco-innovation inputs, especially in area of sub index 1.2. - Total R&D personnel and researchers (% of total employment) amounts 39% in 2019., and partly sub index 1.1. - Governments environmental and energy R&D appropriations and outlays (% of GDP) amount 50% of the EU average.

Table 1: Position of Croatia in EU-28 (EU-28=100) according to Eco-Innovation Index indicators 2013-2019 in %

	Eco-innovation inputs	Eco-innovation activities	Eco-innovation outputs	Resource efficiency outcomes	Socio-economic outcomes
Year/Index	1	2	3	4	5
2013	20	80	97	75	8
2014	20	78	84	77	168
2015	15	86	85	77	40
2016	15	89	100	93	110
2017	25	93	61	85	105
2018	28	97	79	92	140
2019	46	99	44	89	67
SD	10.76	8.07	19.89	7.64	56.20
Average	24	89	79	84	51

Source: according to European Commission (2020c)

Eco-innovation action plan also mentions that there is no CE indicator that can be a single measurement for the Circular Economy. However, a number of existing indicators can help to measure performance in several areas that directly or indirectly contribute to the Circular Economy development. They can be grouped into the following groups: 1) Sustainable resource management as the set of indicators examines the performance of the EU Member States in transforming their economies toward circularity by lowering resource demands, thereby increasing resource security and lowering pressures on the environment domestically and abroad; 2) Societal behaviour as the set of indicators reflect citizen awareness, engagement and participation in the circular economy; 3) Business operations which presents the set of indicators depicts eco-innovation activities toward changing and adapting business models according to the principles of a circular economy (European Commission, 2020c)

5. Adoption of CE in Croatia

As it was said, the circular economy can significantly reduce the negative impacts of resource extraction and use on the environment and contribute to restoring biodiversity and natural capital in Europe. Biological resources are a key input to the economy of the EU and will play an even more important role in the future. The Commission will aim at ensuring the sustainability of renewable bio-based materials, including through actions following the Bioeconomy Strategy and Action Plan. While the food value chain is responsible for significant resource and environmental pressures, an estimated 20% of the total food produced is lost or wasted in the EU (European Commission, 2020b).

As an EU member state, Croatia also had to adopt Circular Economy Package. It is, however, important to note that Croatia was in a transition period in the field of waste management until January 2019. A second derogation was granted until January 1st 2021 with regards to the amount of biodegradable waste going into landfills. There are a number of Croatian regulations managing the policy framework of Croatia with regards to waste management and the circular transition aiming at streamlining the policy with that of the rest of the EU.

Dinkelberg (2018, 2) states that Croatia is only just beginning its transition to a circular economy. Due to suboptimal planning of waste management, insufficient incentives to manage waste according to the waste hierarchy, insufficient (door-to-door) separate collection

of waste, lack of a clear allocation of tasks and coordination between the different administrative levels, and insufficient enforcement capacity, Croatia is lagging behind in achieving the EU's waste targets. Croatia was lagging behind in adopting the National Waste Management Plan and the Waste Prevention Programme which are the necessary tools to reflect the existing policies and to develop a strategy to achieve EU waste management targets. These key implementation documents are also relevant to securing key funds under the EU's Cohesion Policy (European Commission, 2017).

6. Agricultural waste management in Croatia

Croatia is characterised by a rich natural heritage, with an abundance of water, coastal waters, natural parks and marine and terrestrial ecosystems. Its economic development and in particular the tourism sector depends largely on these resources. Effective natural resources management, increased investments and ensuring compliance with the EU environmental legislation are essential to sustain Croatia's economic development. Sustainable tourism must be promoted to avoid negative impacts on natural resources (ibidem).

Primary agriculture and fisheries constitute important economic sectors in Croatia, especially for rural and coastal communities. The gross value added (GVA) of the primary sector (including forestry) accounted for 3.9 % of Croatia's total GVA in 2017, which is significantly higher than the 1.6 % of GVA the sector represents in the EU-28. However, in the past decade, the primary agriculture sector has recorded negative growth in terms of both - gross output and value added (World Bank, 2019, 8). The key industries in Croatia with important bio-economy growth and development potential identified include agriculture, food processing, aquaculture and forestry. Department of Energy, Power Engineering and Environment at the University of Zagreb, has estimated that around 10 million tons of agricultural waste, co-products, and by-products (AWCB) are generated every year in Croatia by animal, fruit, cereal and vegetables value chains with the largest volumes generated in the livestock sector in the production of manure (https://agrocycle.eu/). The use of crop residue biomass to return organic matter to the soil represents a significant potential for the production of organic fertilizers and substrates whose use in crop production can significantly contribute to the preservation of soil fertility. For example, according to the research of the authors Bilandžija et al. (2018, 229), 80% of the total arable land in Croatia is used for the production of field crops with an annual biomass production of 3,372,205 t what is significant amount for compost production. Furthermore, domestic animal excrements also represent significant potential for organic fertilization and compost production.

Since, Europe is experiencing unsustainable exploitation of natural resources, unpredictable severe changes of climate, loss in biodiversity and increasing food waste production, in a context of a world population increase of more than 9 billion by 2050. Overcoming these challenges requires research and innovation in agriculture too, to achieve radical switches in lifestyle and resource use. Environmental efforts are related to agriculture too, since agriculture is significant resource pool of organic waste that can be re-use and re-produced into useful products and raw-materials. According to Sadh (2018, 2) there is two different types of agro-industrial wastes: agriculture residues and industrial residues. Agriculture residues can be further divided into field residues and process residues. Field residues are residues that present in the field after the process of crop harvesting. These field residues consist of leaves, stalks, seed pods, and stems, whereas the process residues are residues present even after the crop is processed into alternate valuable resource. Process residues are

husks, seeds, roots, bagasse and molasses. Industrial residues are consisted of peel of fruits and vegetables and oil meals form different crops (soybean, ground nut, hop etc.).

Wine production also results in significant biological residues. The largest quantities but also the greatest attention concerning the wine industry by-products, are connected to grape pomace, as well as grape seeds, grape seed cakes and seed extract. About 40,600 t of grape pomace are produced in the Republic of Croatia in one year. Pomace has a high content of dietary fibre, low content of pectin and hemicellulose, and is a good source of antioxidants due to its high content of polyphenols (Gonzalez-Centeno et al., 2010, 1585). Dwyer et al. (2014, 91) emphasize that only about 3% of the produced grape pomace is used as animal feed, while more amount is used as compost. Grape pomace in Croatia is often used unplanned, deposited on the ground in or around the vineyard, and even burned. Therefore, many consider it as a waste from the wine industry, but its valorisation is imperative for successful wineries considering its significant environmental impact, as well as the economic justification of its disposal. Grape pomace is also used biofuels production, although it is pretty unsuitable for biodiesel production because of high content of unsaturated fatty acids (Ramos et al., 2009, 265). In food products ground pomace is adding due to: enriching the product with fibre and its digestibility, increasing the content of proteins, phenols and water binding and reducing the oxidation of the product. Grape seeds are used for: extraction of oil, polyphenols (anthocyanin, flavones, phenolic acids and resveratrol), production of citric acid, methanol, ethanol, for the production of alcoholic beverages by additional fermentation and distillation processes as well as a source of natural antioxidants (Teixeira et al., 2014, 15639; Dragović -Uzelac et al., 2017, 44). Grape seeds are used in the pharmaceutical, cosmetic and food industries. Dietary fibre and natural pigments (anthocyanin) are used in the creation of functional products. Grape seed extract is commercially available as a dietary supplement for natural antioxidants.

Biological production of platform chemicals from agro-resources, biomass waste and food processing residues has been reported in the literature (Pfaltzgraff et al., 2013, 308; Sheldon, 2014, 958; Lin et al., 2013, 426). The development of an agricultural residue based bio-refinery strategy passes through stepping up research in breakthrough residue conversion into value added chemicals and materials. (Gontard et al., 2018, 630). Furthermore, it is notable that agricultural residues and, in particular, aromatic lignin derivatives, can be a source of aromatic compounds that could be further used as building blocks for the synthesis of polymers to substitute traditional polyesters, such as petro-derived PET - Polyethylene terephthalate (Pion et al, 2014, 431; Gioia et al., 2016, 5399).

The great potential for using biomass is forestry sector, for production of electric power or biofuels, but for compost production too. Furthermore, decoupled organic municipal waste can also be raw-material for compost production.

According to Gontard et al. (2018, 614) Agricultural waste is a huge pool of untapped biomass resources that may even represent economic and environmental burdens. They can be converted into bioenergy and bio-based products by cascading conversion processes, within circular economy, and should be considered residual resources. Environmental and economic consequences of agricultural residue management chains are difficult to assess due to their complexity, seasonality and regionality. The challenge vision regarding management of agricultural waste in a circular bio-based economy includes: 1) Environmental consequences of agricultural residues management strategy. An adequate assessment approach which provides proper insight and guidance on the seasonality, regional aspects and complexity of

agricultural residue management chains is still pending; 2) Converting agricultural residues into biogas and bio-fertiliser. Conventional anaerobic digestion (AD) performance has to be improved based on geographical and seasonal AD waste feed streams and digestate nutrients distribution, and as well as by investigating new technological options to extend AD applicability (especially toward improving digestibility of lignocellulosic feedstock) and increase its eco-efficiency and end-products; 3) Converting agricultural residues into innovative building blocks, molecules and materials. Agricultural residues are a potential resource for the production of high-value chemicals provided that their complex and heterogeneous molecular structures are tackled by appropriate conversion into competitive products. Therefore, innovative eco-efficient and cost-effective cascading conversion processes should be developed.; 4) Promoting agriculture residue business in a circular bio-economy context. A cross-sectorial vision is needed to bridge the gap between agricultural residues science and business opportunities in order to promote an agricultural residue industrial ecology concept within a circular economy. It is essential to set up a real synergy on a local basis between the different agricultural and agro-industrial chains, the traditional food production activities, and the other industries for the effective use of agricultural resources, including residual resources, with sharing of environmental benefit and added value; 5) Connecting stakeholders and sharing knowledge about agriculture residue management. Since environmental and socio-economic effects are multidimensional, a holistic approach should be developed in order to enhance materials and knowledge flow management. Territorial "cyclifiers" connecting stakeholders and material streams should be developed.

It can be expected that the regulatory framework on the EU level relating to agriculture sector is becoming more stringent, whether it is water management, waste management or renewable energy, or permitted agricultural production practices.

The cause of all difficulties in waste management, including agricultural waste management in the Republic of Croatia is the non-implementation of laws and regulations, then the poor condition of infrastructure that is insufficient or not used satisfactorily. There are no complete and reliable data on waste quantities and waste streams, nor are there adequate controls (Kalambura et al., 2012, 167). The waste management system in the Republic of Croatia is not fully operational. The legislative part of the waste management has been largely resolved, but the problem is the non-implementation of regulations and laws in full. Knowledge of total quantities waste, especially on the quantities of hazardous waste, and waste streams, are incomplete. Only a small fraction of the population realizes that waste is the most significant environmental protection problem in the Republic of Croatia, and a large number do not have awareness of the need for separate collection of secondary raw materials and recycling.

7. Conclusion

Although EU is the creator of CE concept and pioneer in CE implementation, CE is adopted around the world with different focus and emphases concerning CE in different countries. The CE become prominent at the highest levels of European policy making very recently, driven by introducing of Circular Economy Package in 2014 and Circular Economy Action Plan in 2015. Consequently, more than 10 billion EUR of public funding was allocated to the transition process between 2016 and 2020. The inner part of CE Action Plan is waste management adopted in the EEC Environmental Action Plan in 1972. So, the waste management has been part of EU priority policy ever since.

The current position of Croatia in EU regarding CE efforts and achievements was presented via Eco-Innovation Index and Eco-Innovation Scoreboard. Croatia is lagging behind EU-28 for 26% (Eco-I Index) and belong to the catching up cluster countries in Eco-I Scoreboard.

Natural resources are very important for Croatia economic development and especially the tourism sector. Effective natural resources management, increased investments and ensuring compliance with the EU environmental legislation are essential to sustain Croatia's economic development.

Globally, more than half of the total waste amounts relates to agricultural waste. The key industries in Croatia with important bio-economy growth and development potential identified include agriculture, food processing, aquaculture and forestry. Around 10 million tons of agricultural waste, co-products, and by-products (AWCB) are generated every year in Croatia by animal, fruit, cereal and vegetables value chains. Agriculture crop residue biomass is important for production of organic fertilizers and substrates whose use in crop production can significantly contribute to the preservation of soil fertility. Industrial residues – peel and seeds of fruits and vegetables as well as oil-crop meals can be reproduced to value added products of pharmaceutical, cosmetic, food and animal feed industry. Forestry is important sector for using biomass into production of energy, biofuels and compost production together with decoupled organic municipal waste. All of the above can represent additional income for farmers and food-processing industry and can contribute positive impact of CE in environmental sense.

Organic waste management in agriculture should be improved by optimizing the even distribution of manure according to soil fertility. Then, the biological stabilization of all organic residues from agriculture and the food industry should reduce nutrient losses, carbon and nitrogen emissions and increase the fertility value of biologically stabilized organic matter (composting and vermicomposting). Arable land should be plowed for the purpose of soil fertility control, the part of the crop residues should be used for energy production and the part can be used for manure stabilization within composting and vermicomposting procedures. In animal husbandry, it is recommended to provide a sufficient amount of arable land for optimal application and disposal of manure. Furthermore, it is necessary to develop biological stabilization processes in the direction of enrichment of organic residues in order to make their application to remote production areas more cost-effective. In the same segment are the remains of the food industry which should not be disposed to the landfills but rather converted into quality organic fertilizers and other products.

Croatia needs to increase its efforts further in the field of circular economy, which includes further efforts in the decoupling of municipal waste, production of new bio-waste products in existing industries and development of new bio-waste industries.

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THE POSSIBILITY OF APPLYING CHURCH MARKETING IN THE PROCESS OF NEW EVANGELIZATION WITH AN IMPACT ON THE BEHAVIOR AND ATTITUDES OF BELIEVERS

ABSTRACT

The Christian church has survived numerous social epoch and historical turbulence, over time it has adapted to many situations, and survived more than 2000 years. In order to survive in the modern world, it is necessary to continue to pursue its primary goal, which is the permanent proclamation of the Gospel, but in some new conditions. Adapting to a modern man to whom everything is available and a fast-paced way of life while retaining the original purpose of existence is key to survival. A survey conducted in the Split-Dalmatia County, Republic of Croatia, on a sample of 203 respondents, aims to show how believers are ready for a new approach of the church. By testing seven hypothesis, it has been proved that there are no significant ethical and moral barriers to the use of marketing in religious institutions in Republic of Croatia. In addition, respondents already recognize the use of some elements of marketing, and the use of marketing are not judged negatively, although the marketing is currently applied unsystematically and insufficiently. Respondents positively evaluate religion as a way of life, and feel that faith is important in their life. Although the image of the church was not negatively assessed by the respondents, the structure of the answers in the research shows that the church should work to improve the public image. The research showed that the respondents evaluate the most appropriate marketing activities as those of a social character, which the church could use as an element for improving the public image. According to the respondents, the most inappropriate activities are sending direct mails to members of the church community as well as informing and advertising the church, church events, etc. via social networks such as Facebook, Twitter, Myspace.

Keywords: *church marketing; reevangelization, Croatia.*

1. Introduction

The term *religion* stems from the Latin language. Roman scholars and philosophers derived the word *religio* from various verbs denoting a service of worship, forming a bond between God and people or an act where people return to God upon abandoning him (Opća enciklopedija JLZ, 1981). A typical psychological definition of religion is provided below: "Religion is a system of values, beliefs, behaviours, practices and ceremonies by which individuals or a community place themselves in a relationship with God or the supernatural world or often with each other and from which a religious person derives a set of values to abide by and evaluate

the natural world" (English and English, 1976, according to Ćorić, 2003). Unlike religion, religiosity is an ultimately individual and subjective reality that is almost impossible to measure by objective benchmarks (Sanader, 2007).

The Croats embraced Christianity more than 13 centuries ago, and their first contacts with the Holy See were recorded as early as in 641 A.D., when they welcomed abbot Martin, the Pope`s emissary. They were Christianised between the 7th and the beginning of the 9th century (Croatian Bishops' Conference, 2014). Catholic Church is a part of the Christian Church whose doctrine was defined at 21 ecumenical councils. It encompasses the Roman Catholic Church and the united Eastern Catholic Churches. Its official seat is in Rome with the Pope, who is also referred to as the Bishop of Rome, as the chief pastor, whereas the main administrative body is referred to as the Holy See. Catholic Church, as opposed to other Christian denominations, is characterised by its recognition of the Pope`s primacy, a strict hierarchical and juridical order, compliance with the Sacred Tradition and the *Sacred Scripture* as the sources of revelation, absolute faith in dogmas, mandatory liturgy attendance, receiving sacraments and clerical celibacy.[1] The entire mission of the Church, in a broader sense, is epitomised in the term *evangelisation*. According to the Congregation for the Doctrine of the Faith, the entire mission of the Church consists in accomplishing the *traditio Evangelii*, the proclamation and handing on of the Gospel, which is the power of God for the salvation of everyone who believes (Rom 1:16) and which, in the final essence, is identified with Jesus Christ himself (cf. 1 Cor 1:24). Evangelisation is aimed at the entire humanity. In fact, *to evangelise* does not merely imply to teach a doctrine, but to proclaim Jesus Christ by one's words and actions, i.e., to make oneself an instrument of his presence and action in the world (Congregation for the Doctrine of the Faith, 2008). Throughout the history, the Catholic Church, as an institution, has been marked by numerous controversies, such as excessive and inappropriate accumulation of wealth, corruption, the Inquisition and the Crusades, zealotry, simony (purchasing or selling of spiritual things, especially church offices and positions, which is strictly prohibited by the canon law), conflict with the science and similar items. However, there is also a historical record of the contribution of the Catholic Church to the development of the Western Civilisation. In his book *How the Catholic Church Built Western Civilization,* Woods presented the information about the renowned Catholic intellectuals, who were particularly significant in the field of education, science, art, architecture, international law, economics, and morality. He also emphasised the significance of the Church in the Medieval period where it played a key role in the foundation of the first European universities (Woods, 2009). It derives from said reference that the Catholic Church had a significant influence on the societal development throughout the history. The Church was actively involved in science, politics, and judiciary in the context of both positive and negative influences. Recent research show that the role of the Church in society is changing, which leads to the decrease of its societal influence and significance and the decrease in the number of people declaring themselves as religious or as members of a specific religion.[2]

As we mentioned above, the Christian Church has overcome many social changes and historical upheavals by adapting to many different situations, which is why it managed to survive for over 2000 years. Many authors believe, as confirmed by said studies, that the Church is facing a new era which requires the implementation of the new evangelisation. The general idea behind the need for the new evangelisation derives from the perceived crisis that the Church is experiencing in the modern world. The need for the new evangelisation may be rooted in different causes which are characterised by the same underlying concept: "moral meanderings and despondencies of the modern civilisation". It can be argued that the present-day Church

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[1]http://www.enciklopedija.hr//natuknica.aspx?ID=30901
[2]http://www.britannica.com/EBchecked/topic/497215/classification-of-religions/38036/Conclusion#toc314840

exists in a world "whose only consistency is change" (Balog, 2012). The crisis in the relationship between the Church and the modern civilisation stems from the fact that the development of the culture and society in the modern world formulates new ways of thinking, new perspectives, experiences, and lifestyles. It is evident from the rise in individualism and critical rationality, while secularisation continues to expand. This leads to the erosion of many forms of traditional thinking, which has always been a prominent foothold of ecclesiastical Christianity. Liturgy attendance has been steadily decreasing in all parts of the economically develop world, accompanied by the expansion of religious indifference in traditionally Christian areas, while the post-modern religiosity is reflected in the form of subjective experience. Christian communities strive to conduct their mission and activities in an established and traditional way, while resisting to change their own behaviour and to adapt to the processes emerging and rapidly developing in their environment. The intensity of resistance is greater in the Catholic Church than in other non-profit organisations, which is due to the very nature of the Church. On the other hand, the dynamics, the diversity, and the pace of changes in the society, as well as the indications of changes in the religious community, are so conspicuous that the adaptation to these new circumstances has become a prerequisite for survival (Bižanca, 1999; Balog, 2012). The decreasing trend in the trust in the institution of the Church and in the public role of the Church, with a simultaneous increase in the negative perception of the Church as a wealthy institution, which has become more interested in power and material possessions, may mark a beginning of the process of secularisation of the Croatian society (Nikodem, 2011). This is confirmed by the research conducted in 1998 and 2012. In a study conducted in 1998, it has been determined that the Church is the most renowned institution in Croatia. As many as 85.10% of respondents declared their trust in the Church. The study conducted in 2012, which analysed the trust in institutions, found that the situation has substantially changed. According to that study, the Church is in the third place with only 50% of respondents declaring their trust in the Church (Baloban and Rimac, 1998.; Trzun, 2012). According to Balog (2012), the mission of the Church must remain unchanged, however "its transformation into new structures is inevitable". Evangelisation cannot be completed without communication, however most of the communication in the modern age is carried out via the new media which are not only paving way to new communication possibilities but are also signalling different kinds of relationships and ways of experiencing the fundamental categories of identity markers (Valković, 2011). Balog (2012), as the author of a comprehensive study on this subject in Croatia, believes that said combination can be achieved only by using marketing. Dwindling church membership coupled with the pressing need for raising resources have made it essential for churches to understand the laity's expectations about religious organizations and act upon them. For good or bad, there is an increasing influx of marketing philosophies and principles into the churches' everyday practices. Challenges are big in adapting the marketing concept to the promotion of faith and the sale of religious objects (Appah and George, 2017). Whereas Balog tackles the use of marketing within the Church and its affiliate organisations by surveying clergymen and laymen, *this paper focusses on explaining the specificities of Church and reevangelization, connecting it with specificities of marketing. Taking into account all the specifics of the Church and marketing, this paper primarily focusses on analysing whether, and to what extent, the use of marketing can influence the attitudes of believers towards the Church and their behaviour in the process of the new evangelisation. The process of the new evangelisation targets the believers who declare themselves as religious yet fail to live a life of faith or attend liturgy or partake in church activities and the work of church organisations. That part of population represents the target group to be re-evangelised, by using tailored marketing, and motivated for the active engagement in the ecclesiastical life.* The aim of this paper is to demonstrate how marketing can be used in religious organisations to achieve the desired behaviour of believers; to present the various possibilities of using marketing in

religious organisations; to demonstrate how traditional teaching of the Church can be conveyed in a modern way through the use of marketing without compromising its core values; to examine the attitudes of believers towards the use of marketing in religious institutions and organisations; to explore ethical and moral obstacles against using marketing in religious institutions.

2. The Church in Croatia

Christianity is a monotheistic religion, which encompasses numerous Christian churches, communities and sects sharing a common faith in Jesus Christ and living a life in accordance with the Gospel (Orlandis, 2004). The contemporary hierarchical structure of the Catholic Church is defined in the Code of Canon Law, namely canons 330 to 739 (Code of Canon Law, 1996). According to the Code, the Church is comprised of all those who have been baptised in the Christian faith, thus constituting the people of God. In terms of its territorial organisation, the Church is divided into dioceses. Diocesan communities are also referred to as particular or local Churches and are divided into parishes guided by a priest or a parish administrator. Several neighbouring dioceses constitute an ecclesiastical province where a certain diocese, usually the largest one, is denoted as an archdiocese and metropolis. The bishops of one ecclesiastical province constitute a provincial council. All dioceses of a specific country form the provincial Church, while all bishops of a specific country form a conference of bishops. The bishop of the Roman Diocese is the successor of St. Peter the Apostle, whereas the bishops are the successors of the Apostolic College. The Bishop of Rome, i.e., the Pope, and the College of Bishops constitute the supreme ecclesiastical authority. The Bishop of Rome does not only have authority over the general Church but also a regular authority over all particular churches (dioceses) and their assemblies. The Pope is assisted by the bishops in the exercise of his duties. The College of Bishops, i.e., the collection of all bishops, ceremonially exercise their authority over the general Church at general councils together with the Bishop of Rome (Šalković, 2006; Zec, 2011).

In Croatia, the Catholic Church is, on the one hand, regulated by the law of the Republic of Croatia, and by the canon law, on the other hand. The relations between these two parties are regulated by the treaties between the Republic of Croatia and the Holy See. The Catholic Church, as a religious institution, is regulated by the Act on the Legal Status of Religious Communities (Official Gazette 83/02, 73/13) in the Republic of Croatia. In the Roman Catholic Church, the relations are regulated by the canon law. Canon law is comprised of liturgical law and public ecclesiastical law. Canon law is the system of legal principles made and enforced by the Church to regulate and direct the life of its believers, and internal and external relations of the Church (Zec, 2011). The Republic of Croatia has thus far signed four bilateral treaties with the Holy See. In terms of the Holy See, they are reflected in the documents from the Second Vatican Council and the provisions of the canon law, and in terms of Croatia, they are reflected in the Constitution. Even though the Church and the state have a separate field of operation, the main idea behind these treaties was to emphasise that they eventually meet at the same focal point - a person who is simultaneously a citizen and a believer (Zec, 2011). According to the census[3] conducted in 2011, the main religion of Croatia is Roman Catholic with 3 967 143 declared members, i.e., 86.28% of the population. In comparison with the data from the previous census, it is evident that the number of members has decreased by 206 408 or 5.2%. The second most represented religion is Eastern Orthodoxy with 190 143 members, i.e., 4.44% of the population. In comparison with the data from the previous census, it is evident that the

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[3]http://www.dzs.hr/ (Croatian Bureau of Statistics)

number of members has decreased by 5 826 or 3.06%. Among the non-Christian religions, the most represented religion is Muslim religion with 62 977 members, i.e., 1.47% of the population, with a recorded increase of 6 200 members. There are 2 550, i.e., 0.06%, members of the Oriental religions, with a recorded increase of 1 581 members. There are 536 declared Jews, which accounts for 0.1% of the population. According to the census, there are 32 518 or 0.75% of declared agnostics and sceptics, which represents an increase of 30 971 or 2002%. The total share of non-religious and anti-religious (atheists) people in Croatia is 163 375 or 3.81% of the population, with a recorded increase of 64 999 or 66% with respect to the previous census. There are 93 018 or 2.17% members of the population who are non-declared, and 2 555 members of other religions, which accounts for 0.06% of the population with an increase of 2 031 members. In view of the above, there is a significant increase in sceptics and agnostics. Furthermore, the non-religious and anti-religious groups have a significant increase in the overall population. There is a conspicuous decreasing trend in the number of believers, i.e., the population declaring as religious, at the global level and in Croatia.

Throughout the history, the Church has successfully resisted any changes and deviations in its operation, however this modern age has placed new operative challenges before the Church. With the cessation of the dominance of privileged opinions and beliefs, the Church found itself on a global market of ideas face-to-face with fierce competition. The consumer/user has become the focal point of interest to the point where the market strives to discover and satisfy the consumers` needs that they do not even realise they have. On the other hand, there is a decrease in the number of believers, marriages officiated in the Church and received sacraments (Balog, 2012). As a result, there is an impending issue of whether the Church has recognised the opportunities provided by the modern marketing with the aim to popularise faith among the believers and what the Church can do within the framework of turbulent living conditions of this modern age (Martinović and Pirić, 2003).

3. Marketing in the process of new evangelisation

3.1. Ethical and moral dilemmas regarding the use of marketing in religious institutions

Religious organisations belong to the non-profit sector. According to Alfirević et al. (2013), non-profit organisations aim to achieve a certain public interest, but their basic purpose is not to achieve profit. The term *non-profit* as the basic characteristic of non-profit organisations indicates that the primary feature of those organisations is the absence of profit, i.e, the scope of those organisations is to achieve public interest and not to gain profit. Despite the prejudice, Angheluță, Dima and Zaharia (2009) believe that the interest in studying the use of marketing in religious organisation is not a novelty. They claim that the first writing in which the marketing thought is applied to religion is Jay Benson Hamilton's book *Empty Churches and How to Fill Them* published in 1879. Since then, the concern for religious marketing has continuously increased, accompanied by a substantial number of publications on this subject. According to Balog (2012), Barna is one of the main authors in that area, especially after publishing the book *Marketing the Church* in 1988. He believes that the churches, in order to enhance the spiritual well-being of their congregation, must focus on developing marketing orientation. Other authors have also explored the issue of branding religion. In his book *Branding Faith*, Cooke (2008) presented the ways in which religious organisations should convey their messages via 21st century media channels and develop a bond with their target groups. Reising (2006) offered specific marketing strategies and tactics that the parishes should implement in order to achieve their objectives. In his controversial book *Jesus Washes Whiter or How the Church Invented Marketing*, Ballardini (2010) presented a somewhat different

perspective - he claimed that the Catholic Church, in fact, invented marketing, and that it has been using it for over 2000 years. The author interpreted the placement of the idea of Catholicism as one of the best designed marketing moves which conquered most of the world, based on a well-devised strategy, and sustained for centuries continuously recruiting new believers. He further explained that the Church uses a perfect model whereby it generates the demand for its services - first by instilling *emotional guilt* and then by offering a *free* absolution of sins. Within the ecclesiastical hierarchical structure, he defined the first product manager, trademark, consumer group, loyalty, product placement and promotion channel while referring to the Church as a Multinational enterprise. Authors such as Dobocan (2013) believe that there are certain misconceptions among those who did not study economic sciences that marketing merely refers to selling and marketing products and services. As a result, the author believes that there are certain reservations among the members of the clergy and laymen because "they fear that the religious service and activities will transform from something that is extremely important for the spiritual life of believers and the religious truths that the Church has been teaching and passing on for thousands of years into something that will focus more on materialism and accumulation of financial profit". Considerations regarding the attitude of the Catholic Church to mass media and the use of marketing methods of building relationships with the believer should be confronted with experiences in this area of other Christian churches and other religions. In the United States and some Western European countries, mainly Protestant ones, a few decades ago a new area of marketing activity emerged which was related to faith, religion, church functioning and parish activities. For example, the terms church marketing and religious marketing still sound like blasphemy in Polish reality, although they have become a fact and are implemented in practice, even if they are not so. Meanwhile, in countries where Protestantism dominates among Christian religions, church marketing is treated as one of many sectoral marketing concepts, allowing the development of missionary activities, strengthening the relationship between the clergy and the believer, reflecting the social expectations of people believers, and thus creating opportunities to limit the progressive secularization of societies (Gawroński and Majkowska, 2018).

3.2. The use of marketing in religious institutions

The examples of several religious communities in Croatia confirmed that a successful execution of specific marketing activities is not unconditionally associated with a positive and accurate perception of marketing as a complex social philosophy, instead it is associated with a positive perception of activities which are considered marketing activities in the contextual and ad hoc sense yet are not considered or perceived as such in a specific non-profit organisation (Pavičić, 2001). This can be explained by certain particularities in the use of marketing in religious institutions. According to Meler (2003), some of these particularities include:

o The services of a religious organisation should be observed as a product or a unity of material and non-material components;
o In most cases relating to religious organisations, the price is implied, non-transparent and individually determined, liable to mutual agreement and often paid indirectly (through alms or donations);
o Traditional "word of mouth" advertising represents the optimal mode of promotion, which yields best results in combination with personal observations and individual expectations;
o The selection of a specific product is a result of a combination of different motifs (emotional, social, cultural and rational);
o Once a person acquires loyalty towards a religious community, it perseveres. A transition from one religious community to another may sporadically occur, however a more common phenomenon is a complete alienation from the religious community. For this reason, the

marketing of traditional organisations is predominantly focussed on maintaining the active members in the religious community. In new age communities, the marketing is focussed on recruiting new members.

Angheluţă, Dima and Zaharia (2009) identified several directions in which marketing can be applied by religious organisations: (1) Adapting the product offered by the religious organisation. Hence, in this case the theory that marketing directs the activity of the organisation towards the consumer does not imply that theology should be adapted to the demands of the market, instead the Church should adapt the way of communicating the doctrine, the mission and its programmes to the relevant target group; (2) Selling some religious products. A religious organisation can sell some religious products such as icons, books, candles, and services (baptising, weddings, funerals). However, these are only ways of supporting the mission and the message of the religious organisation for promoting the fundamental idea of the Church; (3) Modification of certain behaviours of individual target groups. Today, it is evident that all religious organisations have implemented the concepts of strategic thinking. Modern marketing offers the necessary instruments to ensure a continuous and complete process, whose result is favourable for the organisation that applies it. Studies show that clergy opinions towards these strategic instruments are rather diverse (they vary from one country to another and from one religion to another). On the one hand, Sherman and Devlin (1998) studied the opinions of the clergy of the Church of England regarding strategic marketing planning and the results were not very favourable. On the other hand, Newman and Benchener (2007) presented the results of a survey of American protestant churches which indicated the following facts: 91.8% of the churches had a defined mission, 70.5% had a defined vision, and 63.9% had the official declaration on their values, philosophy, and doctrines. Figure 1 presents the extent to which the churches use *marketing instruments*, and the figures are surprisingly high. They found that, despite the ongoing debates on whether religious organisations should embrace marketing concepts, the use of management and marketing practices by churches occurs quite frequently.

Figure 1: Use and planning of marketing activities in America (Protestant Churches)

Activity	% of Churches Reporting Existence (n)
Advertising	86,9% (53)
Strategic Planning	75,4% (46)
Target Marketing	52,5% (32)
Self Audits	34,4% (21)
Marketing Planning	29,5% (18)
Market Research	21,3% (13)
Market Segmentation	13,1% (8)
Positioning	11,5% (7)

Source: C. M. Newman, P. G. Benchener, "Marketing in America's Large Protestant Churches", Seventh Annual IBER & TLC Conference Proceedings, Las Vegas, Nevada, 2007, p. 5.

In their professional paper, Burilović and Tanjić (2012) analysed the influence of Internet on the Christian community claiming that it has a considerable influence on the life of a person and their life`s purpose. They believe that Christian communities should be more open towards new technologies. They claimed that "in the process of changes, the Christian communities act through the power of Christian heritage and the age-old wisdom of the Church not merely by way of translating religious terminology, moral values and ways of thinking into new communications, but primarily by trying to breathe a fresh air of evangelic spirit and meaning into this new reality". In addition, they introduced the term *online religion* which exists, according to the authors, "across the forums, chats, blogs, interactive sites, but always through

the symbolic language of a keyboard", emphasising that the Church should use social platforms such as Twitter, Facebook and many others. Even though the authors did not explicitly refer to Internet as a marketing instrument, it certainly is a marketing instrument which can and must be systematically used by religious communities. In a study conducted by Skoko and Gusić (2013), they found that only 40% of parishes of the Archdiocese of Zagreb have an online presence. The authors concluded that they "insufficiently utilise the vast potential of evangelisation enabled by the new media formats, hence they need to boost their online presence so that the Church can keep pace with the contemporary communication trends and the habits of people". The findings of a national study conducted by Webb (2012), which surveyed the Protestant church leaders, show 24 effective tools that can be used to retain members, attract potential members and persuade them to become active members of the Church. This study shoes and confirms that the Church reaps significant benefits from the use of such and similar marketing tools in the case of new, small-sized and medium-sized churches and the churches with the decreasing or stagnating trend in the number of believers. Apart from personal recommendations and monthly newsletters, the author believes that the Church can no longer rely on traditional printed media, and he reiterates the advantages of the application or use of marketing (especially web-based marketing activities) in its operation. He emphasised the importance of designing a quality and creative website, which will showcase the relevant information and activities of the Church, and the importance of using social networks and video-streaming services which are either free or quite affordable and available to everyone (e.g., Facebook, Twitter, Youtube). Social media will become an even more critical part of congregations' strategic management and community outreach efforts. Therefore, religious congregations will come under increasing pressure to strategically utilize social network platforms in order to stay engaged in their community and expand their influence. This suggests that forgoing the opportunities that various social media offer can cost a congregation its membership, its impacts on community affairs, and even its survival (Lee, 2018). According to the findings of a study conducted by Mulyanegara (2011) in Australia, directing the activities towards building brand recognition (brand-orientation) is largely associated with the perceived benefits and participation in church activities. Furthermore, the author claims that according to the findings of the research, the church leaders should try to engage in the activities which contribute to the building of brand recognition in order to properly address and appeal to the selected segments or target audience. According to the author, the harmonisation of spiritual and social benefits with the building of brand recognition will lead to an active engagement of believers in various church activities. Research in Poland conducted on Polish clergy has showed that the conscious use of marketing by the Catholic Church can bring it and the faithful many benefits. Better communication of the Church with the environment may lead to an increase in the value of its brand, which may result in a reversal of the secularization trend of societies. It is important that the Catholic Church conduct some kind of imitation (commercially called benchmarking). This activity consists of observing the activities of other entities and implementing their best solutions in their structures and activities. In this way, the Catholic Church implements in its processes activities that benefit the Protestant Churches. Referring to the research conducted by this authors of the article, relating to the preparation of future clergymen for certain types of marketing activities aimed at building the brand of the Catholic Church, it can be stated that the seminary system of educating clergy lacks theoretical and practical classes in the area of marketing. University faculties of theology do not conduct specialized classes that would prepare future clergy for this type of activity (Ignatowski, et. al. 2020). The competition on the markets of religious organisations in Croatia is non-transparent and of different quality than in other social fields. The reasons for such scarce competition, according to Balog (2012), lie in the fact that demands are frequently greater than available supply. He claims that competition exists, nonetheless, and he defines it as generic competition

(a choice between priesthood and some other vocation), competition between different objects of exchange (different pilgrimage destinations) or competition between certain religious communities and new age spiritual movements. As with any other organisation, in order to successfully plan and implement a marketing strategy, it is necessary to define and observe the correlation between the mission and the vision of a religious community and its strategy and the strategic objectives.

Marketing mix of religious organisations contains the usual four elements or 4Ps: product, price, promotion and placement which are similar to the rest of non-profit sector in terms of balancing. As with any other organisation, for each of these four elements it is necessary to develop a special strategy and a special business policy and integrate them in the overall marketing strategy of the organisation. In order to provide value to its customers, a religious organisation must know what to offer (product), how to transmit it to the customer in a relevant manner (placement), how to present it in order to be appealing to the customer (promotion), and also the cost of the product as perceived by the consumer (price). The religious organisation should structure said activities according to its own needs, identity, mission and objectives, taking its customers into consideration. Ignoring any of said components may have an adverse effect on the image of the Church. Within the marketing mix, a special attention should be attributed to understanding the specificity of the product and its price in religious organisations (Angheluță, Dima and Zaharia 2009). The starting point in the process of *defining the product* of a religious organisation is to identify the fundamental religious teachings, such as dogmas, core values, ideas of said organisation. The product to be offered by the organisation should be shaped in line with those teachings. Therefore, a product offered by the religious organisations should consist of the following: the product offered by the organisation – goods and services offered by religious organisations which are addressed to public segments, and the practised product – the practical form of religion, as it is practised by its parishioners, which refers to the way religion affects personal principles, beliefs, vision about life and individual behaviour (Angheluță, Dima and Zaharia 2009). From the aspect of a believer, the product may be defined as a message of Gospel that the believers receive through liturgy. The social aspect of the religious product may be observed from the standpoint of its contribution to the culture, while the believers themselves constitute the product from the standpoint of the religious community (Balog, 2012). According to Angheluță, Dima and Zaharia (2009), in the case of religious organisations, *the price* is usually indirect, in a non-monetary form, and may be defined as a certain attachment and commitment towards the values and teachings promoted by the religious organisation and as a willing sacrifice of the customers` time, energy, voluntary work and money. Shawchuck et al. (1992) defined 4 categories of costs that may incur upon someone who wants to use religious products or services: (1) relinquishing economic assets; (2) relinquishing old ideas, values, and attitudes; (3) relinquishing old behaviours, and adopting or learning new behaviours; (4) and sparing personal time and energy. Even though every church is free to select its own price strategy, according to Angheluță, Dima and Zaharia (2009), the price should allow access to religious products for all targeted segments, and it should not pose an obstacle for the parishioners (customers). As a conclusion, they stated that the price of religious product has monetary and non-monetary components and differs from one religious organisation to another. Every organisation should be aware of its price-constituting components and develop its own price strategy accordingly. In order to keep the believers and the general public properly and adequately informed, the Christian community uses *promotional activities* to convey messages, create and maintain a certain image (Balog, 2009). Since promotion is the most widely used marketing tool of religious organisations, the priests and the wider public usually have a positive perception of using marketing for communicating with the target segment. Although there is still some serious debate on whether the Church

should use all promotional techniques, Angheluţă, Dima and Zaharia (2009) believe that each religious organisation should determine its own tools, bearing in mind its moral and ethical principles. Furthermore, the Church should adapt its messages and communication channels, as well everything else within its offer, to the target groups. If the religious organisation selects appropriate methods and messages to communicate with each public segment, the promotional communication will be efficient. In terms of *distribution* in religious communities, Angheluţă, Dima and Zaharia (2009) believe that direct distribution is extremely important. The placement methods may vary depending on the products that are being promoted (religious ideas, religious services and products). There are many decisions to be made regarding placement – some can be applied only at the beginning of the life cycle of a religious organisation, some can be executed at any time, while some must be repeated. The importance of placement strategy is obvious because it defines the way the products and services of the organisation come in contact with the parishioners. Balog (2012) defines two basic types of placement by religious communities: inward-oriented placement, where the members of the congregation are directed towards religious communities, and outward-oriented distribution, where Christian communities use distribution channels to get closer to their members.

4. Research findings

For the purpose of this study, we collected the data through a survey questionnaire on a sample of 203 respondents. Questionnaire was created mainly by the authors and it is new. The theoretical knowledge of the cited literature with special emphasis on the work of Balog (2012) helped in the development of the questionnaire. The questionnaire was divided into two thematic parts: the first part which refers to the general features of the sample and the second part which refers to the attitudes towards faith, religious habits and the use of marketing in the Church. The research included a total of 61.1% of female respondents and 38.9% of male respondents. The majority of respondents belong to the age group 19 to 26 (38.42%) and 27 to 34 (16.75%). The aim of the research was to focus on the younger population, i.e., the population at a stage in life where they have certain attitudes but are also prone to changing their attitudes and converting from people of religious beliefs into, for instance, agnostics. This is target group that may and should be influenced by means of marketing in religious institutions. The least number of respondents were older than 66 (2.96%) and below 18 (3.45%). As evident from the data above, the majority of respondents are from the younger demographics (58.42% of respondents are under the age of 35). By analysing the respondents according to their level of education, it derives that the majority of respondents have completed secondary education or attained a university degree (69.95%). By analysing the respondents according to their employment status, it derives that the majority of respondents are employed in the private sector (33.50%). The share of unemployed persons in the survey was merely 8.37%. The majority of respondents come from urban areas (81.28%). According to the findings, the distribution of income per households is at the right-hand side, i.e., a greater number of respondents live in households with a lower level of income. The majority of respondents (29.6%) have household earnings in the range from 6 001 to 9 000 HRK per month, whereas the least number of respondents (3.9%) have household earning of 3 000 HRK and less.

Testing the hypotheses

H1. There are substantial ethical and moral obstacles against using market in religious institutions in Croatia

Table 1: Descriptive statistics - testing the selected hypotheses

Descriptive statistics							
	Mean	**Median**	**Mode**	**Min**	**Max**	**Standard deviation**	**Variation coefficient**
[I believe that there are substantial moral and ethical obstacles against using marketing in church activities]	2.936	3.000	3.000	1.000	5.000	1.186	40.398
[I believe that the elements of marketing (e.g., survey about the level of satisfaction of believers, promotion of church events) may, to a certain extent, be applied in church activities]	3.369	3.000	3.000	1.000	5.000	1.061	31.481
[I believe that marketing activities would make it easier for the believers to participate in church activities and bring them closer to faith and teachings of the Catholic Church]	3.291	3.000	3.000	1.000	5.000	1.117	33.933

Source: Authors

The mean level of agreement with the statement that there are moral and ethical obstacles against using marketing in church activities is 2.936. For the first statement, the median value equals 3, hence it derives that a half of respondents do not believe that there are moral and ethical obstacles against using marketing in church activities or are simply indifferent.

Table 2: Response frequency distribution for the statement "I believe that there are substantial moral and ethical obstacles against using marketing in church activities"

Frequency table: [I believe that there are substantial moral and ethical obstacles against using marketing in church activities]			
	Number of respondents	**Structure (%)**	**Cumulative frequency "less than" (%)**
1	27	13.30	13.301
2	43	21.18	34.483
3	74	36.45	70.936
4	34	16.75	87.685
5	25	12.32	100.000
Total	203	100.00	-

Source: Authors

It derives from the frequency distribution in Table 2 that a half of respondents do not believe that there are moral and ethical obstacles against using marketing in church activities or are simply indifferent. Similarly, it derives from the study and the response frequency distribution that a half of respondents believe that the elements of marketing (e.g., survey about the level of satisfaction of believers, promotion of church events) may, to a certain extent, be applied in church activities or are simply indifferent.

As evident from the response frequency distribution, a half of respondents believe that marketing activities would make it easier for the believers to participate in church activities and bring them closer to faith and teachings of the Catholic Church or are simply indifferent.

Interval proportion estimation was used to test whether the majority of respondents believe that *the advertising of church events and activities on TV and the radio is never used or rarely used.*

Table 3: Interval proportion estimation for the statement Advertising of church events and activities on TV and the radio

Interval Estimation (One Proportion), Z (or Chi-Square) Test	
	Value
Sample Proportion p	0.5222
Group Sample Size (N)	203
Confidence Level	0.95
Confidence Limits:	
Pi (Exact):	
Lower Limit	0.4511
Upper Limit	0.5926

Source: Authors

According to the interval estimation in Table 3, the proportion of respondents who believe that the advertising of church events and activities on TV and the radio is never used or rarely used is likely to range from 45.11% to 59.25%. Since the lower limit of proportion estimation is less than 0.50%, the hypothesis that the majority of respondents disagree with said statement may be accepted. In view of the above, it can be concluded that hypothesis H1 – *There are substantial ethical and moral obstacles against using market in religious institutions in Croatia* – is rejected as unfounded.

H2. Church and ecclesiastical organisation in Croatia inconsistently and insufficiently use some elements of marketing at the level of ecclesiastical provinces and parishes

Descriptive statistics for the statement *I believe that the Church optimally uses the available resources at all levels (local churches, parishes, dioceses)* revealed that the mean value is 2.621, with an average deviation of 44.099% from the arithmetic mean. It can be concluded from the median value and mode 3 that the distribution is nearly symmetric, hence it derives that the majority of respondents do not believe that the Church optimally uses the available resources at all levels. Interval proportion estimation is used to test the extent to which the population believes church events and activities are advertised on TV and the radio.

Table 4: Interval proportion estimation for the statement Advertising of church events and activities on TV and the radio

Interval Estimation (Spreadsheet1) One Proportion, Z (or Chi-Square) Test	
	Value
Sample Proportion p	0.5764
Group Sample Size (N)	203
Confidence Level	0.95
Confidence Limits:	
Pi (Exact):	
Lower Limit	0.5052
Upper Limit	0.6452

Source: Authors

It can be noted from the interval proportion estimation in Table 4 that, at a 95% confidence level, the proportion of respondents ranges between 50.52% and 64.52%. Since the lower limit of proportion estimation is above 50%, it can be concluded that this is the perception of the majority. In view of the above, it can be concluded that hypothesis H2 – *Church and ecclesiastical organisation in Croatia inconsistently and insufficiently use the elements of marketing at the level of ecclesiastical provinces and parishes* – is accepted.

H3. The respondents recognise the use of certain elements of marketing in the Church, but have a negative perception of them

For the statement I believe that the Catholic Church should participate in decision making regarding the issues such as health education, politics, referendum on marriage and similar issues, the median value of the rank is 2, hence it derives that a half of respondents scored the participation of the Church in the decision making with rank 2 (disagree) or more (completely agree), whereas a half of respondents scored it with rank 2 or less. The value mode equals 1, hence it derives that the greatest number of respondents completely disagree with the statement that the Catholic Church should participate in decision making regarding said issues. Interval proportion estimation was used to test whether the majority of population believes that the Catholic Church should participate in decision making regarding the issues such as health education, politics, referendum on marriage and similar issues.

Table 5: Interval proportion estimation for the previous statement

Interval Estimation (Spreadsheet1) One Proportion, Z (or Chi-Square) Test	
	Value
Sample Proportion p	0.5468
Group Sample Size (N)	203
Confidence Level	0.95
Confidence Limits:	
Pi (Exact):	
Lower Limit	0.4756
Upper Limit	0.6166

Source: Authors

It can be noted from the interval proportion estimation in Table 5 that, at a 95% confidence level, the proportion of respondents ranges between 47.56% and 61.66%. Since the lower limit

of proportion estimation is less than 50%, it can be concluded that this is not the perception of the majority. The analysis of the respondents` perception of transparent and rational use of material resources is presented below.

Table 6: Descriptive statistics for the statement "I believe that the Catholic Church uses material resources transparently and rationally"

Descriptive statistics						
	Mean	**Median**	**Mode**	**Min**	**Max**	**Standard deviation**
[I believe that the Catholic Church uses material resources transparently and rationally]	2.567	3.000	1.000	1.000	5.000	1.349

Source: Authors

The median value of the rank is 3, hence it derives that a half of respondents scored their perception of transparent and rational use of material resources with rank 3 (neither agree nor disagree) or more (completely agree), whereas a half of respondents scored it with rank 3 or less. Since less than a half of respondents negatively responded to the question of transparent and rational use of material resources, it can be concluded that the hypothesis *the majority of respondents have a negative perception* cannot be accepted.

Table 7: Descriptive statistics of the selected statements for hypothesis H3

Descriptive statistics							
	Mean	**Median**	**Mode**	**Min**	**Max**	**Standard deviation**	**Variation coefficient**
[I believe that I am well-acquainted with Church activities and local church activities]	3.044	3.000	3.000	1.000	5.000	1.398	45.910
[I believe that I am well-acquainted with Church activities and diocese and archdiocese activities]	2.606	3.000	3.000	1.000	5.000	1.248	47.880
[I believe that the Church needs new or improved communication methods for informing the believers about Church activities]	3.404	4.000	4.000	1.000	5.000	1.175	34.518
[I believe that the Church optimally uses the available resources at all levels (local churches, parishes, dioceses and other)]	2.621	3.000	3.000	1.000	5.000	1.156	44.099

Source: Authors

As evident from Table 7, the average value for all questions ranges between 2.606 and 3.404. The most common rank value of the level of agreement is 3 or 4. The lower limit at a 95% confidence level on a sample of 203 respondents.

Table 8: Interval proportion estimation for the selected hypotheses related to hypothesis H3

Interval Estimation (One Proportion), Z (or Chi-Square) Test	
	Value
Sample Proportion p	0.5714
Group Sample Size (N)	203
Confidence Level	0.95
Confidence Limits:	
Pi (Exact):	
Lower Limit	0.5003
Upper Limit	0.6405

Source: Authors

Hence, in order to accept the hypothesis that the perception expressed through a questionnaire is also the perception of the majority of population, the proportion of favourable responses must be greater than or equal to 57.41% for a sample of 203 respondents. The study has found that, for all 4 questions, the proportion of favourable outcomes is less than the required 57.14%, therefore it can be concluded that hypothesis H3 – *The respondents recognise the use of certain elements of marketing in the Church but have a negative perception of them* – is rejected as unfounded. It is concluded that respondents do not evaluate negatively use of marketing elements in the church. Also, hypothesis H2 has already confirmed how respondents recognize the use of certain elements of marketing, which hypothesis H3 further confirmed.

H4. The respondents have a negative perception of the image of the Church as an institution

Table 9: Descriptive statistics of the selected statements for hypothesis H4

Descriptive statistics						
	Mean	**Median**	**Mode**	**Min**	**Max**	**Standard deviation**
[I have a positive perception of the Catholic Church and its activities]	3.384	4.000	5.000	1.000	5.000	1.379
[I support the doctrine and the teaching of the Catholic Church]	3.562	4.000	5.000	1.000	5.000	1.297
[I respect ecclesiastical hierarchy and I have a positive perception of the clergy (priests, deacons, bishops)]	3.099	3.000	4.000	1.000	5.000	1.339
[I believe that the Church properly tackles the "burning" issues such as providing for the poor and adequately addresses the spiritual needs of its members]	2.961	3.000	3.000	1.000	5.000	1.342
[I believe that the Catholic Church, together with its activities, leaves a good impression on the potential members and maintains a good public image]	2.744	3.000	3.000	1.000	5.000	1.283

Descriptive statistics						
	Mean	**Median**	**Mode**	**Min**	**Max**	**Standard deviation**
[I believe that the Catholic Church uses material resources transparently and rationally]	2.567	3.000	1.000	1.000	5.000	1.349
[I believe that the clergy leads by example and practises what it preaches]	2.606	3.000	1.000	1.000	5.000	1.306
[I support the activities of religious organisations such as Caritas and similar other organisations]	3.793	4.000	5.000	1.000	5.000	1.217

Source: Authors

As evident from Table 9, the average value for all questions ranges between 2.567 and 3.793. The most common rank value of the level of agreement is 1, 3, 4 and 5.

The lower level of proportion estimation for the respondents` perception of the Church, clergy and church activities in the Republic of Croatia > 0.50%, hence it derives that hypothesis H4 – *The respondents have a negative perception of the image of the Church as an institution (the Church, clergy, activities – is rejected as unfounded.*

H5. The respondents have a positive perception of faith as a way of life, i.e., they believe that it is important to live in accordance with religious principles

Table 10: Response frequency distribution for the statements "I am acquainted with the fundamental teaching of the Catholic Church" and "living a life in accordance with the teachings of the Catholic faith and being affiliated with the Catholic Church are very important to me"

		1	**2**	**3**	**4**	**5**	**Total**
[I am acquainted with the fundamental teaching of the Catholic Church]	Number of respondents	7	7	29	73	87	203
	Structure (%)	3.448	3.448	14.286	35.961	42.857	100
	Cumulative frequency "more than" (%)	100.00	96.552	93.104	78.818	42.857	-
[Living a life in accordance with the teachings of the Catholic faith and being affiliated with the Catholic Church are very important to me]	Number of respondents	38	18	48	54	45	203
	Structure (%)	18.719	8.867	23.645	26.601	22.167	100
	Cumulative frequency "more than" (%)	100.00	81.28	72.413	48.768	22.167	-

Source: Authors

The study has found that the majority of population is acquainted with the fundamental teachings of the Catholic Church, whereas it has rejected the hypothesis that the majority of population believes that living a life in accordance with the teachings of the Catholic faith and being affiliated with the Catholic Church are very important to them.   The study has also found that the majority of respondents in the sample (and presumably in the population) believe that God exists. Also, the research has established, through a set of statements, that the majority of respondents has a positive perception of religious organisations. With respect to the attitude towards faith, 92 respondents stated that faith is very important to them and that without it they would be hopeless; 88 respondents believe that faith resembles optimism - sometimes it is good to believe that things happen for a reason; 22 respondents believe that there is no palpable proof of faith, hence they do not practise faith or deem it useful.

Table 11: Testing the correlation between the perceptions of the faith in God and the practical exercise of faith - Spearman`s test of correlation between said statements

Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000				
	Valid - N	Spearman - R	t(N-2)	p-value
RANK [How often have you been praying to God in the past year, on average?] & RANK [How often do you attend mass (Holy Mass and religious ceremonies) within a calendar year, excluding weddings and similar special events?]	203.000	0.638	11.748	0.000
RANK [How often have you been praying to God in the past year, on average?] & RANK [How often do you participate in the events organised by religious organisations and/or the Church (apart from attending the Holy Mass)?]	203.000	0.381	5.834	0.000
RANK [How often do you attend mass (Holy Mass and religious ceremonies) within a calendar year, excluding weddings and similar special events?] & RANK [How often have you been praying to God in the past year, on average?]	203.000	0.638	11.748	0.000
RANK [How often do you attend mass (Holy Mass and religious ceremonies) within a calendar year, excluding weddings and similar special events?] & RANK [How often do you participate in the events organised by religious organisations and/or the Church (apart from attending the Holy Mass)?]	203.000	0.674	12.934	0.000
RANK [How often do you participate in the events organised by religious organisations and/or the Church (apart from attending the Holy Mass)?] & RANK [How often have you been praying to God in the past year, on average?]	203.000	0.381	5.834	0.000
RANK [How often do you participate in the events organised by religious organisations and/or the Church (apart from attending the Holy Mass)?] & RANK [How often do you attend mass (Holy Mass and religious ceremonies) within a calendar year, excluding weddings and similar special events?]	203.000	0.674	12.934	0.000

Source: Authors

The study has found that the greatest number of respondents do not participate in any of the events organised by religious organisations/the Church within a calendar year, while the greatest number of respondents has prayed once a week or more frequently in the past year. The distribution of respondents with respect to the frequency of attending the mass varies. It derives from the correlation matrix in Table 11 that there is a positive, moderate and statistically

significant correlation between the frequency of pray to God in the past year and the frequency of attending mass (Holy Mass and religious ceremonies) within a calendar year, excluding weddings and similar special events. A moderate, positive and statistically significant correlation has been found between the frequency of attending mass (Holy Mass and religious ceremonies) within a calendar year, excluding weddings and similar special events, and the participation in the events organised by the Church/religious organisations. A statistically significant, positive and weak correlation has been found between the frequency of participating in the events organised by the Church/religious organisations (apart from attending the Holy Mass) and the frequency of praying to God in the past year. Finally, hypothesis H5 – *The respondents have a positive perception of faith as a way of life, i.e., they believe that it is important to live in accordance with religious principles* – is accepted.

H6. The respondents participate/want to volunteer in the activities of the Church and the religious organisations, including the potential marketing activities

The average perception of the respondents regarding their interest in attending a church seminar in order to help the local church to spread the Gospel is 2.443, with a mode and median value of 1. Since the proportion of respondents who agree with the statement that they are interested in attending a church seminar in the field of church marketing in order to help the local church to spread the Gospel is less than 50%, i.e., equal to 24.138%, it can be concluded that this attitude is not shared among the majority of population. Hypothesis H6 – *The respondents participate/want to volunteer in the activities of the Church and the religious organisations, including the potential marketing activities* – is rejected as unfounded.

H7. The respondents (believers/prospective believers) have a positive perception of the potential use of tailored marketing in the Church

The study has found that as many as 47.3% respondents mostly or completely agree with the statement that the elements of marketing (such as surveying the satisfaction of believers, promotion of church events) could be somewhat applied in church activities, whereas 17.7% of respondents completely or mostly disagree with said statement. The majority of respondents (43.9%) mostly or completely agree with the statement that the marketing activities would make it easier for the believers to participate in religious activities and bring them closer to the faith and the teachings of the Catholic Church, whereas 22.2% of respondents mostly or completely disagree with said statement. Based on the results, it can be concluded that hypothesis H7 – *The respondents (believers/prospective believers) have a positive perception of the potential use of tailored marketing in the Church* – is accepted.

Through *additional studies* which are not directly related to the hypotheses, it has been determined that the female respondents have a more positive perception of the Catholic Church than the males, and that the females pray more frequently than the males. It has been established through the correlation matrix that *there is no* statistically significant correlation between age, education or income and religiosity. Table 12 illustrates the structure of the respondents` responses regarding the most suitable marketing instruments and activities for many areas of church activities.

Table 12: The structure of the respondents` responses regarding the suitability of application of said statements in church activities

	1	2	3	4	5	TOTAL
[Advertising religious events through billboards]	17	36	63	50	37	203
%	8.37%	17.73%	31.03%	24.63%	18.23%	100.00%
[Public communications]	8	33	63	62	37	203
%	3.94%	16.26%	31.03%	30.54%	18.23%	100.00%
[Directly e-mailing the members of the religious community and others]	24	32	47	64	36	203
%	11.82%	15.76%	23.15%	31.53%	17.73%	100.00%
[Believers` surveys (demographic, level of their satisfaction and similar issues)]	14	32	55	67	35	203
%	6.90%	15.76%	27.09%	33.00%	17.24%	100.00%
[Organising free transport for people who want to attend mass, but do not have a suitable means of transport]	14	19	47	64	59	203
%	6.90%	9.36%	23.15%	31.53%	29.06%	100.00%
[Sponsoring and inviting believers to a religious concert, lecture and similar events]	12	24	63	62	42	203
%	5.91%	11.82%	31.03%	30.54%	20.69%	100.00%
[Advertising a religious event on a billboard in the church yard]	7	19	58	65	54	203
%	3.45%	9.36%	28.57%	32.02%	26.60%	100.00%
[Broadcasting religious TV shows on TV and the radio]	11	25	71	61	35	203
%	5.42%	12.32%	34.98%	30.05%	17.24%	100.00%
[Surveying the citizens about their needs that could be satisfied by the Church]	12	23	65	61	42	203
%	5.91%	11.33%	32.02%	30.05%	20.69%	100.00%
[Sending e-mails to believers with the information about the church events]	21	24	64	58	36	203
%	10.34%	11.82%	31.53%	28.57%	17.73%	100.00%
[Public-oriented surveys about the attitudes towards the Church]	15	26	63	66	33	203
%	7.39%	12.81%	31.03%	32.51%	16.26%	100.00%
[Opening a special telephone line where the believers and the interested citizens can obtain information about the events organised by the Church]	21	22	57	63	40	203
%	10.34%	10.84%	28.08%	31.03%	19.70%	100.00%
[Providing social services for the members of the Church in need (collecting food and donations)]	8	23	42	52	78	203
%	3.94%	11.33%	20.69%	25.62%	38.42%	100.00%
[Survey directed towards the believers where they can give suggestions about what the Church should offer within its activities]	14	21	64	56	48	203
%	6.90%	10.34%	31.53%	27.59%	23.65%	100.00%
[Social advocating and lobbying for the impoverished people in need so they can get certain free benefits or allowances]	9	22	45	62	65	203
%	4.43%	10.84%	22.17%	30.54%	32.02%	100.00%
[Informing the public and advertising church activities and similar events through social platforms such as Facebook, Twitter, MySpace and other media]	28	24	59	56	36	203
%	13.79%	11.82%	29.06%	27.59%	17.73%	100.00%
TOTAL	235	405	926	969	713	3.248
%	7.24%	12.47%	28.51%	29.83%	21.95%	100.00%

Source: Authors

The statements that the majority of respondents (more than 30%) marked with a score of 5, i.e., "completely agree with the applicability of marketing activities in the activities of church organisations" are presented below:

1. Providing social services for the members of the Church in need (collecting food and donations – 38.42% of respondents out of a total of 203 respondents;
2. Social advocating and lobbying for the impoverished people in need so they can get certain free benefits or allowances – 32.02% of respondents out of a total of 203 respondents.

The statements that the majority of respondents marked with a score of 1, i.e., "completely disagree with the applicability of marketing activities in the activities of church organisations" are presented below:

1. Directly e-mailing the members of the religious community and others – 11.82% of respondents out of a total of 203 respondents;
2. Informing the public and advertising church activities and similar events through social platforms such as Facebook, Twitter, MySpace and other media – 13.79% of respondents out of a total of 203 respondents.

5. Conclusion

Catholic Church has had a significant influence on the social development throughout the history. The Church was actively involved in science, politics and judiciary in the context of both positive and negative influences. Recent research show that the role of the Church in the society is steadily changing, while its influence and significant are decreasing. The changes occur within the Church, as well as in the community where the Church operates. In order to survive these changes, the Church needs to continue pursuing its primary objective, i.e., to keep spreading the Gospel, however, under new conditions and circumstances. The Catholic Church as a religious community falls under the category of non-profit organisations, with certain distinctive features. The main aims of this study derive from the specificity of the Church with respect to other non-profit and profit organisations. In other words, the main objective of the research is to demonstrate the possibilities of the use of marketing in church activities in the process of new evangelisation in the Republic of Croatia. Other objectives, which stem from the main objective, focus on exploring the attitudes and perceptions of the population (about the Catholic Church, their religiosity, and religious habits, use of marketing in everyday church activities). A significant number of studies have been conducted about marketing in religious institutions. Many authors support the theory that marketing should be used in religious organisations, whereas several traditionally oriented authors fiercely object this idea by rejecting any possible combination of traditional teachings with the modern methods of conveying these messages. Part of the contribution of this study is reflected in the analysis of the influence of marketing on the behaviour and attitudes of the target group, i.e., believers, which can be observed from the aspect of religious organisations, believers and the wider social community. Considering many contradicting opinions related to the use of marketing in religious organisations, it has been concluded *that the majority of respondents believe that there are no significant ethical and moral obstacles against using marketing in religious institutions in Croatia.* These findings are relevant because they demonstrate that there are grounds for the use and implementation of marketing among the believers in Croatia with the aim of bringing the Church closer to the believers and carrying out the new evangelisation. The study has found *that the Church and religious organisations in Croatia have already been using the elements of marketing at the level of ecclesiastical provinces and parishes, however inconsistently and insufficiently*, and that a systematic use of marketing at all levels would yield a much better effect. Similarly, it has been concluded that the respondents do not have a negative perception of the use of the elements of marketing in Church activities. *The survey of the Church image*

has revealed that the majority of respondents do not have a negative perception of the Church image. Even though the majority of respondents do not have a negative perception of the Church image, there is, nonetheless, a part of population that the Church should influence through the use of marketing. The most illustrative example thereof is that as many as 27.09% of respondents expressed that they completely disagree or disagree with the following statement: "I have a positive perception of the Catholic Church and its activities". *The respondents have a positive perception of the faith as a way of life, i.e., it has been confirmed that the respondents believe that it is important to live in accordance with the religious principles.* However, the findings show that, for instance, as many as 52.1% of respondents have not participated in the events organised by religious organisations and/or the Church in the past year (apart from attending the Holy Mass). The study has found that the majority of respondents do not participate and do not want to participate in the activities of the Church or religious organisations, including the marketing activities that would potentially take place. Finally, it has been confirmed that the respondents (believers/prospective believers) have a positive perception of the use of tailored marketing in the Church. It should be noted that the findings of the research have demonstrated that the female respondents have a more positive perception of the Church than the male respondents and that the females have a more prominent tendency towards praying than the males. Furthermore, it has been established from the correlation matrix that there is no statistically significant correlation between age, education or income and religiosity. It should also be noted that, even though the majority of the hypotheses in this research have been confirmed, a more detailed observation of the findings reveals that there are many operative segments that the Church should focus on. Even though the majority of respondents agreed with the statement that they have a positive perception of the Church image, a concerning trend is that as many as 49.26% respondents completely disagree or disagree with the statement that the Catholic clergy leads by example and practices what it preaches. The respondents expressed their opinions about the most suitable marketing instruments and activities for the numerous areas of Church activities. The statements that the majority of respondents (more than 30%) marked with a score of 5, i.e., "completely agree with the applicability of marketing activities in the activities of church organisations" are: *providing social services for the members of the Church in need (collecting food and donations)* and *social advocating and lobbying for the impoverished people in need so they can get certain free benefits or allowances*. These attitudes may be correlated with the level of agreement with the following statement: "I believe that the Church properly tackles the "burning" issues such as providing for the poor and adequately addresses the spiritual needs of its members", where as many as 36.45% of respondents expressed that they completely disagree or disagree with said statement. The statements that the majority of respondents marked with a score of 1, i.e., "completely disagree with the applicability of marketing activities in the activities of church organisations" are: *directly e-mailing the members of the religious community and others –* 11.82% of respondents and *informing the public and advertising church activities and similar events through social platforms such as Facebook, Twitter, MySpace and other media –* 13.79% of respondents. This study has identified interesting perceptions and attitudes of the respondents in terms of the problematic areas of the Church and its activities in the Republic of Croatia that can serve as guidelines for the religious organisation in implementing the comprehensive marketing process. In addition, the research can be used for improving the image of the organisation and for improving communication aimed at spreading the Gospel and carrying out the new evangelisation. In the future, it would be useful to conduct additional studies to determine the causes of dissatisfaction of the population with certain segments of Church activities. Similarly, said research could be conducted across the entire territory of Croatia. Another interesting aspect would be to explore the attitudes of the clergy towards the use of marketing in their activities, and the possible ways of implementing certain activities. The

research has several limitations. One of the limitations of this study is the research sample which included 203 respondents, which mostly originate from the Dalmatian region. More than 80% of respondents came from urban areas. A similar comprehensive study should be conducted on a larger number of respondents, and it may be useful to encompass the entire territory of the Republic of Croatia, including smaller cities and villages.

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APPLICABILITY OF CATERING DIVIDEND THEORY AND THE FIRM LIFE CYCLE THEORY OF DIVIDENDS ON ZAGREB STOCK EXCHANGE

ABSTRACT

Dividend policy is a payment policy implemented by management, which determines the size and pattern of cash payments over time. One of the key issues when it comes to dividends is understanding what determines the size of the paid dividends. Although extensive scientific literature deals with determinants affecting the payment of dividends, it is still a controversial subject. To this day, many theories and explanations have been presented that seek to explain what determines dividend policy in both developed world markets and less developed capital markets such as the Zagreb Stock Exchange in the Republic of Croatia. A large amount of research related to dividend policy is mainly oriented towards known theories such as Agency Cost Theory, Signaling Theory or Free Cash Flow Theory. However, there is little research where the exclusive focus has been placed on lesser known dividend theories such as the Catering Dividend Theory and the Firm Life Cycle Theory of Dividends. Based on the above, the paper examines the applicability of these theories, the Catering Dividend Theory and the Firm Life Cycle Theory of Dividends in the capital market in the Republic of Croatia. The applicability of these two theories alone has never been researched on the capital market in the Republic of Croatia. This research, by isolating the specific variables of these theories and researching their impact on the amount of dividends, provides an additional overview of the explanation of what affects the payment of dividends in companies in the Republic of Croatia and how. The research was conducted on companies listed on the Zagreb Stock Exchange and whose shares were included in the CROBEX, official index of Zagreb Stock Exchange, at the beginning of 2021. A static panel model was used for the needs of the research.

Keywords: *Dividend policy, Catering Dividend Theory, Firm Life Cycle Theory of Dividends, ZSE.*

1. Introduction

Dividends, although the subject of considerable number of research, still represent one of the most interesting and intriguing topics in the modern financial literature. Brealy and Myers

(2005) confirm this by ranking dividends among the ten most important unresolved issues in modern finance at the beginning of the 21st century. Dividends began to be studied by many scholars in the middle of the last century, when some of the most significant papers on dividends were written. However, even today, the topic of dividends intrigues many scientists who try to contribute to solving the famous Black's "dividend puzzle". Black (1976) wrote: "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together". Black's thinking that preceded the above sentence can be summarized as follows: Why do companies pay dividends and why do investors pay attention to dividends? Dividends may represent a return for an investor who has invested money in a company. Perhaps companies pay dividends to reward investors and to encourage them to continue buying stocks at higher prices. Perhaps a company that does not pay a dividend signals to the market that it has attractive investment opportunities that it could miss if it paid a dividend. If it undertakes potential investments, it could increase its value by an amount greater than the missed dividend payment. If this happens, its shareholder may have a double benefit in a situation where the capital gains tax is lower than the dividend income tax. Shareholders would then increase their capital gains by more than the dividend and would be taxed at a lower effective interest rate. Then why does the share price rise when the company increases the dividend? Wouldn't a shareholder in that situation want the profit to be reinvested and a higher capital gain to be made? As can be seen, the remark that Black pointed out in his work is over 40 years old, but even today many works are still "struggling" with the "dividend puzzle". A large number of papers on dividends have been written on the basis of research conducted in developed world markets. However, what happens to the dividend policy of companies in the capital market of less developed markets such as the Zagreb Stock Exchange? Perhaps by reaching a conclusion on dividend policy in such a market, we will not completely solve the "dividend puzzle" but we will certainly contribute to a better understanding of dividends globally.

Dividend policy is a payment policy implemented by management, where management determines the size and pattern of cash payments over time. According to Allen and Michaely (2003), the word "politics" means that dividends do not develop in a random and incomprehensible way, but that a certain consistency exists. However, this consistency, which implies the determinants that affect the payment as well as the pattern of payment behavior over time, although the topic of the extensive scientific literature is mentioned, still causes controversy.

By the end of the 20th century, many theories and explanations had developed that sought to clarify what determines dividend policy. According to Signaling Theory (Miller, Modigliani, 1961; Petit, 1972; Watts, 1973;), a change in dividends should be accompanied by a change in the company's profitability. A change in dividend should be a signal of current/future profitability that should move in the same direction as the change in dividend. Profitability is also a major determinant in the Theory of the Relationship between Dividend Policy and the Hierarchy of Capital Structure developed by Mayers (1984). According to this theory, companies will first try to finance their investments from the realized profit, because this is also the cheapest source of financing for the company. If it does not make a large enough profit, the company will be financed by borrowing and issuing new shares. If a company has higher borrowing costs it will pay smaller amounts of dividends to avoid costly external financing. For larger companies, it is easier (cheaper) to access external sources of financing, so the relationship between dividends and company size will be positive. Jensen and Meckling (1976) developed the Agency Cost Theory from which the agency problem is developed. In the context of this theory, dividends reduce cash under the manager's control, creating a need for management to turn to the capital market in obtaining the necessary cash to finance planned

investments. In such a situation, management is placed under the supervision of the capital market and reduces the owner's need for management supervision. Jensen's (1986) Free Cash Flow Theory is just another variant of Agency Cost Theory. Free Cash Flow Theory emphasizes that the introduction of a dividend or an unexpected increase in dividends actually means a reduction in management's ability to misuse company money.

One of the newer theories of dividend policy is Catering Dividend Theory and Firm life cycle theory of dividends. Baker and Wurgler (2004) developed the Catering Dividend Theory, according to which companies pay or increase dividends in a situation where investors give premiums on shares of companies that pay dividends. Firm Life Cycle Theory of Dividends (Mueller, 1972; Grullon, Michaely, Swaminathan, 2002; DeAngelo, DeAngelo, Stulz, 2006) is based on the opinion that as the company matures, the ability to generate money exceeds the ability to find profitable investment opportunities. Finally, the optimal decision becomes the distribution of cash to shareholders in the form of dividends. The applicability of these two theories alone has never been researched on the capital market in the Republic of Croatia. This research, by isolating the specific variables of these theories and researching their impact on the amount of dividends, provides an additional overview of the explanation of what affects the payment of dividends in companies in the Republic of Croatia and how.

2. Catering Dividend Theory and Firm Life Cycle Theory of Dividends

Baker and Wurgler (2002) wanted to examine what is the reason for the declining propensity to pay dividends that Fama and French (2001) cited in their paper. Their results suggest that dividend catering best explains fluctuations in the propensity to pay dividends. Based on the model they developed in 2004, they formed the Catering Dividend Theory. According to this theory, companies pay dividends to investors, depending on their irrational demand for dividend-giving stocks or fast-growing stocks. In this way, they raise the share price above its fundamental value. Psychological and irrational investor behavior, in the context of this theory, plays a major role in the financial market, while management decisions are only rational responses to investor demands. In a study (Neves, Pindado, Torre, 2006) of the application of the Catering Dividend Theory to EU countries, which at the time consisted of twelve countries, the authors concluded that investor sentiment has a positive impact on dividend policy for companies with excess liquid assets. Research conducted by Ferris, Noronha and Unlu (2010) links the frequency of dividend payments to the value of the company. They observed civil and common law countries. They state that in civil law countries, companies are given a higher premium on their value if they pay dividends more often compared to customary law countries where a lower premium is associated with the frequency of dividend payments. The payment of dividends is more important to investors in civil law countries whose characteristic is less investor protection. They state that the motivation to dividend catering is present and has an impact on the frequency of dividend payments through which the share value can be increased, ultimately the company. When all other characteristics of companies are constant Bulan, Subramanian and Tanlu (2007) state that there is a high probability of introducing dividend payment when the dividend premium is high. The combination of life cycle and dividend catering explains the time of initialization of company dividends. Mature companies characterized by high profitability and low growth rates show a high degree of propensity to initiate the payment of dividends. The high dividend premium gives an even greater reason to initiate dividends.

The basic idea of the Firm Life Cycle Theory of Dividends is based on the idea that as the company matures, the ability to generate money exceeds the ability to find profitable investment

opportunities. Finally, the optimal decision becomes the distribution of cash to shareholders in the form of dividends. According to the Firm Life Cycle Theory of Dividends, the new (young) company faces relatively high investment opportunities but is still not profitable enough to finance all potential investment opportunities with internally generated cash. In addition, various obstacles make external financing difficult. At such a stage, the company will keep the cash without paying dividends. After some time, marked by a growth phase, the company reaches a mature life stage. At this stage, the company's investment opportunities are reduced, its growth and profitability rates are slowed down, the specific risk is also reduced and the company generates more money through operating operations than it can invest profitably. Finally, the company begins to distribute earnings to shareholders.

Firm Life Cycle Theory of Dividends says that the company will start paying dividends when the growth rate is expected to slow down and profitability falls. This idea is contrary to the Signaling Theory according to which, by introducing a dividend, companies signal to the market an increase in the growth rate and profitability. Empirical testing of the introduction and change of dividends generally supports the Firm Life Cycle Theory of Dividends. Benartzi, Michaely, and Thaler (1997) in their study conclude that an increase in dividends is not accompanied by an increase in the growth rate of earnings, while a decrease in dividends is associated with an improvement in the growth rate. Grullon, Michaely, and Swaminathan (2002) came to the results of a decrease in a company's profitability after a dividend increase and an increase in profitability after a dividend decrease. According to Fama and French (2001), the probability of paying a dividend is positively related to the size of the company and its profitability. A survey conducted among six developed global financial markets (i.e. the US, the UK, Canada, Germany, France and Japan) caried out by Denis and Osobov (2008) also showed that characteristics such as: company size, profitability and company maturity positively associated with the propensity to pay dividends. On the other hand, the results on the connection between the payment of dividends and potential investment opportunities are not unambiguous, i.e. they cannot be generally accepted.

Bulan, Subramanian, and Tanlu (2007) documented how companies initiate dividend payments when they reach a mature life stage. Companies that initiate dividends had higher growth rates, are more profitable, have higher cash reserves and have fewer investment opportunities, unlike companies that did not introduce dividends, and are in the same phase of life. DeAngelo, DeAngelo, and Stulz (2006) in a study that examined what determines the payment of dividends also considered the life cycle of the company and the life stages of the company. As a measure of the company's maturity in their research, the ratio of total retained earnings and total equity (RE/TE) as well as the ratio of total retained earnings and total assets (RE/TA). The high ratio of these indicators shows that this is a company that is in a mature life stage, characterized by a stable cash flow available to the company. The high share of retained earnings gives the company security in its future operations, and at the same time, in the absence of potential investment opportunities, the potential for dividend payments. The conclusions of their research are that there is a statistically significant correlation between the decision to pay a dividend and the RE/TE and RE/TA indicators. Their work supports Firm Life Cycle Theory of Dividends according to which companies pay a dividend in the mature phase of their life cycle characterized by a high share of retained earnings relative to total equity.

3. Variable and sample description

The dividend premium (*DP*) as variable describing Catering Dividend Theory is calculated at the year level as the difference between the natural logarithm of the weighted *MB* ratio (market

to book value ratio) of the dividend paying and the non-dividend paying companies. The variable *MB* is calculated as follows:

$$MB_{i,t} = \frac{TA_{i,t} - BVE_{i,t} + MVE_{i,t}}{TA_{i,t}}$$

(1)

To calculate the weighted *MB* ratio, the book value of an individual company is used in the total book value of all companies. In the paper, the dividend premium (*DP*) is calculated as follows:

$$DP_t = \ln(\sum_{t}^{z} p_{i,t}^{+} \frac{TA_{i,t}^{+} - BVE_{i,t}^{+} + MVE_{i,t}^{+}}{TA_{i,t}^{+}})$$

$$- \ln(\sum_{t}^{z} p_{i,t}^{-} \frac{TAI_{i,t}^{-} - BVE_{i,t}^{-} + MVE_{i,t}^{-}}{TA_{i,t}^{-}})$$

(2)

The symbols from equitation 1 and 2 stands for:

DP_t – dividend premium in the year *t*.

$p_{i,t}^{+}$ - share of the book value of the company i that paid the dividend in year t in the total book value of all companies that paid the dividend in year t.

$p_{i,t}^{-}$ - share of the book value of the company *i* that didn't paid the dividend in year *t* in the total book value of all companies that didn't paid the dividend in year *t*.

$TA_{i,t}^{+}$ - Book value of assets (total assets) at the end of year *t* of company *i* which paid dividend in yea *t*.

$TA_{i,t}^{-}$ - Book value of assets (total assets) at the end of year *t* of company *i* which did not paid dividend in year *t*.

$BVE_{i,t}^{+}$ - Book value of equity at the end of year *t* of company *i* which paid dividend in year *t*.

$BVE_{i,t}^{-}$ - Book value of equity at the end of year *t* of company *i* which did not paid dividend in year *t*.

$MVE_{i,t}^{+}$ - Market value of equity at the end of year *t* of company *i* which paid dividend in year *t*.

$MVE_{i,t}^{-}$ - Market value of equity at the end of year t of company *i* which paid dividend in year *t*.

The following variables were used in research as determinants that describe Firm Life Cycle Theory of Dividends: RE/TE, RE/TA, lnTA. The high ratio of the above indicators shows that company is at a mature stage of life, characterized by stable cash flow that the company has at its disposal. The relationship between these variables and the dividend per share should be positive.

The research was conducted on companies listed on the Zagreb Stock Exchange. Only companies whose shares were included in the CROBEX index in January 2021 were taken into account for empirical investigation. CROBEX is official index of Zagreb stock exchange (ZSE). Only shares listed in the Regulated market which traded on more than 75% of the total number of trading days in the six-month period preceding the revision may qualify for CROBEX. Choosing this condition, similar shares were included in research. A total of 18 companies were

included in the survey and the period of research was from year 2011 to year 2018. This period covers period from the end of world financial crisis, which started in 2008, and it ends before the COVID pandemic started and which has had a great influence on the business of companies.

4. Empirical research

For the purpose of econometric data analysis, static balanced panel data analysis was employed. Model (3) forms the basis of estimation.

$$Y_{it} = c + \sum_{k=1}^{K} \beta_k X_{it}^k + \varepsilon_{it}$$

(3)

Where:

Y_{it} is the dividend payout ratio (DPR) of company i at time t, with i = 1,..., N; t = 1,…, T
X_{it} are k independent variables as discussed in section 3.

Before panel analysis was employed, stationarity of each variable was tested. When stationarity of each variable was conducted problem of multicollinearity between independent variables and the presence of heteroscedasticity was tested as well. But first descriptive statistics for all variables are provided. Descriptive statistics for all variables employed in research is provided in Table 1. Descriptive statistic is computed based on 144 observation for all variables.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
DPR	144	0.2258	0.3687	0.0000	2.6600
RE/TE	144	-1.0265	7.5021	-69.2700	13.6878
RE/TA	144	0.0709	0.3905	-1.4021	0.8113
lnTA	144	7.6092	0.9750	6.0827	9.9582
DP	144	-0.0517	0.1571	-0.2458	0.2229

Source: author's calculation

Nest step in research was to test stationarity in a panel dataset. The presence of unit root test was tested in all variables using a Levin-Lin-Chu unit-root test. The results showed that all variables were stationary. Table 2 presents results of conducted Levin-Lin-Chu unit-root test.

Table 2: Levin-Lin-Chu unit-root test

Variable	p-value
DPR	0.0000
RE/TE	0.0000
RE/TA	0.0001
lnTA	0.0000
DP	0.0000

Source: Authors' calculation

After testing stationarity in a panel dataset the following step in research was to check the problem of multicollinearity between independent variables. The matrix of Pearson correlation coefficients was implemented to test the problem of multicollinearity. Correlation matrix for independent variables is shown with table 3. An absolute value of the Pearson coefficient higher

than 0.7 indicates a strong correlation between independent variables. An absolute value of the Pearson coefficient higher than 0.7 indicates a strong correlation, which was not identified between included variables.

Table 3: Correlation matrix

	RE/TE	RE/TA	lnTA	DP
RE/TE	1			
RE/TA	0.4795	1		
lnTA	0.2368	0.5615	1	
DP	0.1248	0.1083	-0.0123	1

Source: Authors' calculation

F test, Lagrangian multiplier test for random effects and Hausman test were used to show which panel model was the most appropriate one. To detect the problem of heteroscedasticity Breusch-Pagan test was used in each model. The null hypothesis in Breusch-Pagan test assumes homoscedasticity is present. If p-value is less than 0.10 the null hypothesis will be rejected suggesting that the problem of heteroscedasticity is present while the standard errors are biased. Since this can lead to bias in test statistics as well as in confidence intervals, after finding proper static panel model robust standard errors were used in that same model. Table 4 shows the results of the analysis. In table 4 results of F test, Lagrangian multiplier test for random effects and Hausman are also shown. Results showed that the most appropriate model was with random effects. Breusch-Pagan test for heteroscedasticity showed that problem of heteroscedasticity was present. After finding proper static panel model robust standard errors were used.

Table 4: Parameter estimates of static panel model

Variable	DPR
RE/TE	0.0013587**
	(0.0006107)
RE/TA	0.0290701
	(0.1286627)
lnTA	0.1581507***
	(0.0468922)
DP	-0.2587148
	(0.2017964)
cons	-0.9916096***
	(0.3725022)
R2 within	0.0465
R2 between	0.3755
R2 overall	0.1941
Model p-value	0.0000
Breusch-Pagan test for heteroscedasticity	chi = 12.93
	p value = 0.003
F test	p value = 0.0000
Breusch and Pagan Lagrangian multiplier test for random effects	chi = 22.97
	p value = 0.0000
Hausman specification test	chi = 0.57
	p value = 0.9668

*, **, *** Statistically significant at the; 10%, 5%, 1% level, respectively. Robust standard errors are between parentheses.

Source: authors' work

Table 4 summarizes the final results of empirical analysis. The model with random effect is statically significant (p-value is 0.0000). Table 4 shows that variables RE/TE and lnTA have positive and statistically significant influence on DPR. A statistically significant and positive relationship between the variables RE/TE and lnTA and DPR as dependent variable confirms Firm Life Cycle Theory of Dividends the among companies on the ZSE, that is, on the capital market in the Republic of Croatia.

5. Conclusion

Empirical research showed the applicability of Firm Life Cycle Theory of Dividends in explicating what determinates the decision about dividend. Variables RE/TE and lnTA are statistically significant and have positive impact on decision about dividends. The high ratio of these indicators shows that company is in a mature life stage, characterized by a stable cash flow that the company has. The high share of retained earnings gives the company security in its future operations, and at the same time, in the absence of potential investment opportunities, the potential for dividend payments.

The basic concept of the Firm Life Cycle Theory of Dividends is the fact that as the company matures, the ability to generate money exceeds the ability to find profitable investment opportunities. Finally, the optimal decision becomes the distribution of cash to shareholders in the form of dividends. The young company faces relatively high investment opportunities but is still not profitable enough to finance all potential investment opportunities with internally generated cash. In addition, various obstacles make external financing difficult. At this stage, the company will keep the cash without paying dividends. After some time, marked by a growth phase, the company reaches a mature life stage. At this stage, the company's investment opportunities are reduced, its growth and profitability rates are slowed down, the specific risk is also reduced and the company generates more money through operating operations than it can invest profitably. Finally, the company begins to distribute earnings to shareholders.

The results of the research confirm the applicability of this theory to ZSE. Companies in the Republic of Croatia are paying more and more attention to dividend policy, especially in the absence of quality investments and when achieving a stable cash flow, they decide to pay dividends in order to make their shares more attractive. In addition, the Croatian capital market is bank-centric and citizens are primarily savings-oriented, and companies are trying to attract new investors to the capital market by paying dividends.

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A scientific paper

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THE ROLE OF SOPHISTICATED TECHNOLOGIES IN MANAGING HERITAGE-BASED TOURISM EVENTS

ABSTRACT

Constant changes in tourism demand are affecting present-day tourism trends and how to compete in the tourism market. This paper examines the role and importance of information technology in providing information on tourism events and, in particular, the relationship between the manner in which information is obtained and visitor spending as well as event satisfaction.
Empirical research was conducted using the survey method on a sample of 536 respondents/attendees during heritage-based tourism events that are of exceptional importance to Croatia's tourism offering. These events are Đakovo Embroideries in Đakovo, Špancirfest in Varaždin, the Renaissance Festival in Koprivnica and the Rijeka Carnival in Rijeka. Data are presented using descriptive statistics and inferential statistics (Pearson's correlation coefficient, the Chi-squared test and Levene's test of equality of variances). Results indicate that the largest share of attendees obtained information about the tourism event via the Internet. The most important motivations to attend an event were curiosity and wanting to learn about a tourist destination's culture and tradition. An analysis of tourist spending confirms that the spending of tourists in the tourist destination who obtained information via the Internet (World Wide Web and Social media) is considerably higher than that of tourists who obtained information from other sources. The satisfaction of the former with the event is very high. These findings confirm the importance of information technologies in designing, implementing and improving tourism offerings. The authors put forward guidelines to facilitate the successful integration of information technologies in managing future tourism events to ensure their competitiveness.

Keywords: *tourism events, information technology, tourism management, heritage, visitor satisfaction.*

1. Introduction

The Republic of Croatia possesses a rich tangible and intangible heritage, dating back to a variety of epochs and bearing witness to the turbulent past and historical turmoil that has played out in the territory of present-day Croatia. Each historical epoch can, either in itself or within the framework of the country's overall history, be used as a platform to design a tourism product. To ensure the tourism product is appealing, it needs to be special and in line

with modern tourism trends and, in particular, with the motivations, habits, wants and needs of modern visitors.

Heritage, as a crucial element of a tourism product, is the fundamental carrier of a nation's identity. The fact that 13% of all tourists travelling to Croatia in littoral area and 16% in continental area were motivated by a desire to learn about the country's culture and heritage, and were equally represented across all age groups (Institute for Tourism Zagreb TOMAS, 2020), testifies to the importance and development potential of heritage. When trends in tourism demand are viewed at the world level, the importance of heritage is considerably greater and continuously growing, underlining the need to improve Croatia's heritage-based tourism offering.

Because of work commitments and stressful lifestyles, modern tourists want to be able to get easily available and easily verified information about the tourist destination of their choice and they can do this by using sophisticated information technologies.

In addition to tourists, timely information is also exceptionally important to destination tourism managers who need to actively keep track of changes in the tourism market and accordingly modify and improve the existing product to ensure its continuing performance and viability.

The use of sophisticated technological solutions contributes strongly to the success of tourism events in the tourism market, makes it easier to manage the process of event design and execution, and enables timely feedback and permanent communication with the tourism market in real time. Entailing a relatively low cost component, the use of modern technological solutions can ensure the strong economic grow of the tourist economy and sustainability of a tourism product on the tourism market and create the conditions needed to ensure the sustainable growth on the tourist market of the high quality tourism product, tourist destination and tourism economy as well as an increase in the living standard of the local community as one of the most important stakeholders in designing a successful tourism product.

This paper seeks to explore the manners in which visitors to heritage-based tourism events obtain information, with regard to the source of information.

The paper focuses on the example of four tourism events – the *Đakovački vezovi* (Đakovo Embroideries) festival, *Špancirfest*, *the Renaissance Festival* a– to study the level of usage of sophisticated technologies in obtaining information about events and in deciding to visit a tourist destination. The paper also examines the influence the manner of getting information has on spending during the stay in the tourist destination and on the level of overall satisfaction with the visit.

Based on the indicators obtained by studying the relevant scientific literature as well as on secondary statistical indicators and the empirical research carried out, the authors propose guidelines for the successful integration of sophisticated technologies with the process of managing heritage-based tourism events. The process aims to make certain that continuous and timely information concerning the execution of the event is made available to event managers, together with feedback about the attitudes, needs and wants of visitors, to ensure the event's continuous sustainability and the conservation of all elements of heritage as the fundamental carrier of a unique product in the tourism market.

2. Features of sophisticated technology usage in the world

Information technology and a modern approach to tourism event management are mutually dependent and inseparable processes. The use of sophisticated technology - intelligently worldly and smart or advanced processes or technology, in designing a tourism event provides the event with a crucial competitive advantage relative to competing tourist destinations that fail to sufficiently apply modern technologies with the aime to advancement of old technology with new additions and modifications, especially when the tourism event involves elements of heritage as the fundamental carrier of national identity.

Through the use of sophisticated technologies, a heritage-based tourism event can become a tourist destination's trademark and easily distinguishable brand, reinforcing the tourist destination's competitive position in the tourism market. (Tripunić, 1999)

Competitiveness in a modern tourism market environment is at the core of the survival of a tourism product or business, and it is the result of the conscious efforts of key people within a tourism destination, often over generations, to outperform direct competition in the tourism market. So, competitiveness encompasses the potential to develop into core competitiveness and competitive advantage that will help to create added value for the tourist destination as a whole (Milohnić, 2012, 6, Evans, Campbell & Stonehouse, 2003, 56-80).

Thanks to its unique features, heritage is a resource base that can be used to create added value for all stakeholders in a tourist destination, as well as creating core competitiveness and a competitive advantage in the tourism market.

Information is the most important marketing resource that destination tourism managers need to ensure a timely response to change in the tourism market. Information technology, which represents a set of technical knowledge, methods, techniques and means used in the work process as well as in management and mutual communication, helps destination tourism managers make the right decisions (Cerović, 2003, p. 786, Šehanović, Hutinski & Žugaj, 2002, p. 33).

We Are Social and Hootsuite are organisations that draw up global annual reports on the current state of digital, using data from the following sources: GlobalWebIndex, GSMA Intelligence, Statista, Akamai, Google Consumer Barometer, StatCounter and Ericsson Mobility (Global Digital Report, 2018).

According to GlobalWebIndex data, the world in 2019 had a population of 7.6 billion people and fully 45% of the world's population uses the Internet. Smartphones are used by 5.1 billion people (67% of the world's population) and social networks by 3.5 billion people (45% of the world's population). The most recent data indicate that relative to 2108 the number of Internet users today is growing at a rate of 9.1% (the number of active users of social media grew at a rate of 9%; the number of mobile users, at a rate of 9%; and the number of mobile users of social networks, at a rate of 10%). The share of mobile device users amounts to more than two-thirds of the world's population. Recent data also show that the average Internet user spends about 6.5 hours a day using devices and services via the Internet (GlobalWebIndex,2019).

In late 2018, the number of Internet users in Croatia amounted to 1,128,273 connections for access to the Internet via fixed networks, a 2.96% increase relative to 2017. About 82% of Croatia's population accesses the Internet via mobile networks, of which 70.61% gain access via smartphones and 11.40% via data cards and M2M cards (HAKOM, 2019).

The importance of sophisticated technologies in Croatian tourism, social networks, is also evident in the TOMAS Survey on attitudes and expenditures of tourists in Croatia in 2019.,

first visitor survey conducted in both the Adriatic and the continental part of Croatia, which was held from May 2019 to March 2020. The survey shows that the average age of tourists is 43, (55% between 30-49 years of age, 15% are younger than 30, and 30% are older than 50), and it can be concluded that almost 70 % of respondents in Croatia belonging to younger age groups (0-49) use information obtained via the Internet (55,5% in littoral area, and 47,6% in continental area) and that fully 48,1% of respondents use social networks, suggesting that tourist destination tourism managers should conduct more and more marketing and advertising activities via the Internet, especially via social networks. (Institute for Tourism Zagreb TOMAS, 2020).

The above stated suggests that the use of sophisticated technologies in creating heritage-based tourism events is a necessity, particularly in the face of heightened competition in the tourism market.

3. Application of information technology in creating heritage-based tourism events

The Internet is the most important innovation that has emerged in the tourism sector in the past two decades. It has become a vital element in the creation of tourism offerings, largely through the promotional and post-sale opportunities it provides. These opportunities can be used in promoting heritage-based tourism events.

Digital technologies have become an integral part of any tourism product, particularly when it comes to marketing but also in all stages of organising a tourism event (product), from researching tourist needs and motivations to designing promotional materials and monitoring event performance and visitor satisfaction (Ivančić, 2015).

When creating a heritage-based tourism product and tourism event, all stakeholders should aim to ensure that individuals receive a message, initially presented in a physical form from their environment, which will be capable of generating a need in them to attend the heritage-based tourism event. More information is then provided about the tourism event that will create a need in the users' minds to visit the heritage facility presented through the tourism event. Furthermore, the aim is also to ensure the heritage-based tourism event will remain a lasting memory for visitors, and to create a permanent preference and need to visit the heritage site by using information technology to shape the decisions and actions of individuals in accordance with their motivations and objectives (Drpić, 2017, Schunk & Usher 2012, pp. 14-15).

The use of information technologies in modern business operations in the tourism market has become essential for the successful tourism market performance of both the heritage-based tourist destination and the heritage-based tourism event, whose strength is reflected in the ability to gain a competitive advantage in the tourism market. Information technology and tourism have become the two most dynamic drivers of the global economy, and their synergy ensures continued economic growth around the world. (Kliček, 2008).

By using these technologies, tourist destinations directly introduce themselves to tourists, and tourists, as the users of a tourist destination's services, are able to independently choose and design their own tourism product that matches their wants, motivations and needs. With regard to heritage, modern tourists can participate in person in various events in heritage sites and become a virtual user of a heritage facility, museum, art gallery, etc. Tourists can create their own stories based on virtual walks through heritage facilities.

Virtual visits to heritage sites or pre-recorded heritage-based tourism events can be used to create a desire in service users to visit a tourist destination and heritage site (Spencer, Buhalis & Moital 2011, p. 1195).

The Internet and network technology have changed the way that the added value a tourism product brings to a tourist destination and heritage site is viewed. Now all stakeholders involved in designing an offering of heritage-based events have to embrace new network, digital (for example, hybrid digital signage systems – a combination of web portal and online selling – (e-tour operators)) and mobile technologies (Roblek et al. 2013, p. 559, Rodriguez-Sanchez et al., 2013, Yueh et al., 2007).

Previous studies have shown that gender and socio-cultural determinants have a significant role in the use and perception of electronic messages in the growing field of marketing strategies and media planning. Research in the field of e-business suggests that gender is one of the key attributes indicating the possibility and probability of selling a tourism product in the future. (Rodgers, Harris 2003, p. 324, Wolin & Korgaonkar 2003, p. 377). With regard to the tourism market, studies have shown that gender has an exceptional effect on searching on the Internet for information about tourism. (Kim, Lehto & Morrison 2007, p. 429).

Destination tourism managers take part in generating, processing and sharing information (Naisbitt, 1982, 51). Having timely information is a core competitive advantage in the modern tourism market, made possible through the application of sophisticated information technology. Modern technology has a profound effect on sales channels, to a great extent by eliminating intermediaries and creating direct relations with the tourism market (Knowles, Diamantis & El – Mourhabi, 2001, Egger & Buhalis, 2008, Mihajlović, 2013, Kliček, 2008). Destination tourism managers should be knowledgeable of current marketing tools and information models for tourism product management if they are to respond to tourism market needs in a timely manner and in the right way, through tourism product promotion activities. Particular attention needs to be focused on promoting the special features of heritage and culture, as the primary carriers of the identity of the tourist destination.

A global network, the Internet is becoming more and more popular as a means of providing information to potential tourists about a tourist destination. The 2020 TOMAS Survey shows that 55% of all respondents used the Internet as a source of information. When on the Internet, tourists most often use information obtained via and online agencies (61.1%) and social networks (48.1%) Other sources of information used by respondents include recommendations from friends or acquaintances (25%) and experiences from previous stays (22%). It is interesting to note that all types of media, (brochures, posters, TV, radio, videos, articles in newspapers and magazines), provided they are taken together, can be considered a secondary source of information for 18,6% of respondents in littoral area, and 14.7% in continental area. This fact additionally highlights the advantages of the Internet – speed, easy access to target tourism markets, ease of making adjustments to offerings, and low cost of advertising services (Institute for Tourism Zagreb TOMAS, 2020).

4. Methodology

The aim of research presented in this paper was to explore the current usage level of sophisticated information technology, in particular web sites and social networks, by visitors to gain information about tourism events and to identify what user characteristics impact the decision to attend an event.

Desk research, conducted prior to the survey, involved reviewing the relevant scientific and professional literature. Preliminary research was carried out to verify the validity of the research instrument – the questionnaire – (its clarity and ease of understanding as well as its reliability in research analysis).

The research model comprises tourism events whose distinctiveness is based on elements of Croatia's intangible heritage.

The selected tourism events are heritage-based, have a long-standing tradition, are characterised as top events by the Croatian National Tourist Board, and contain elements from the UNESCO Lists of Intangible Cultural Heritage in Croatia (*Zvončari* – carnival bell ringers, Bećarac singing and playing, Procession of Ljelje/Queens of Gorjani, etc.). Research was conducted from February to August of 2019 using the survey method during the time each event was held.

The respondents who participated in the study were attending the events during the time the survey was being conducted. Only those visitors were surveyed whose permanent place of residence was not in the town where the event was being held.

The authors conducted empirical research with primary data in which they used a structured questionnaire, translated and offered in the Croatian and English language to participants attending the event, who voluntarily agreed to take part in the research when asked. No difficulties occurred during the gathering of data. The questionnaire consisted of six parts, focused on the socio-demographic characteristics of the respondents; the motivation to travel to the tourist destination and attend the event; the way information was gathered prior to arrival at the tourist destination; mode of transportation to the tourist destination, and the participants' level of satisfaction with the elements of the offering. The Likert Scale was used for determining the level of satisfaction. The questions were prepared according to the methodologies of previously undertaken researches such as TOMAS (Institute for Tourism), Guidelines Survey procedures for Tourism Economic Impact Assessment of Gated Events and Festivals (Ontario Ministry of Tourism, 2007) and Getz (2010), in order to determine the socio-demographic characteristics of visitors, as a basic element in creating a successful event (Drpić, 2017).

The research aimed to determine the level at which sophisticated technological solutions are used in organising tourism events and to explore the positive or negative effects of sophisticated technologies on an event's distinctiveness, event satisfaction, tourist spending, etc.

Research hypotheses were formulated based on the above-stated starting points:

> H1: The largest share of visitors obtains information about a tourism event via the Internet.
>
> H2: The tourist spending of tourists who learned about an event via the Internet is higher than that of other tourists.
>
> H3: The level of satisfaction of tourists who obtain information about a tourism event via the Internet is high.

The SPSS 26 statistical package was used to process research results. Descriptive statistics and inferential statistics were used by calculating the mean and standard deviation, and Pearson's correlation coefficient, the t-test, the Chi-squared test and Levene's test of equality of variances.

5. Results

The aim of research was to study the effect of sophisticated information technologies on heritage-based tourism events through accessibility on the Internet, the manner of obtaining information, primary motivation, tourist spending and event satisfaction.

5.1. Accessibility of tourism events on the Internet

As web sites, social networks and mobiles apps are making tourism products increasingly accessible to potential visitors in real time, great care needs to be taken in how they are made. The design of a web site, a profile on a social network or mobile app alone could be enough to strongly affect the attendance rate and success of a heritage-based tourism event. Hence, special attention has to be focused on the quality and contents of information provided as well as on the assumed effect of the information on the end user (Lončarić, Perišić Prodan & Ribarić, 2016).

Table 1: Accessibility of heritage-based tourism events on the Internet

Heritage-based tourism event	Web site	Social network	Mobile app
Đakovo Embroideries	-	+	-
Špancirfest	+	+	-
Renaissance Festival	+	+	-
Rijeka Carnival	+	+	-

Source: Authors' research

The results indicate that only one of the four selected tourism events does not have a web site. Instead, it is presented on the web site of a tourist board. All observed heritage-based tourism events have their own pages on social networks, Facebook in particular, suggesting that tourism managers are aware of the importance of this tool as a promotional driver of a tourism event.
The studied heritage-based tourism events still do not possess their own application solutions, especially those targeting mobile service users, and this lowers the level of their accessibility and distinctiveness as well as their ability to quickly adjust to change.

5.2. Socio-demographic characteristics of respondents

Gender, age and educational level are among the most frequently used economic and socio-demographic variables. (Marrocu et al., 2015, Smolčić Jurdana, Soldić Frleta & Lončarić, 2017). Using this type of information helps destination tourism managers to more easily focus their efforts on target tourism market niches and shape a high-quality tourism product, thus ensuring the lasting economic and social sustainability of their tourism product and its value for all stakeholders in the tourist destination.

Of the 536 respondents participating in the study, 225 were male (41.97%) and 311, female (58.02%), with an average age of 38.47 years. The youngest respondent was 16 years old and the oldest, 65 years old, with a standard deviation of 11.39. According to educational background, most of the respondents have college degrees (252 respondents or 47.01%) and secondary school qualifications (239 respondents or 44.59%). To attend the events, the largest share of respondents stayed in hotels (215 respondents or 40.11%), followed by those staying with friends and acquaintances (160 respondents or 29.85%) and those staying in private

accommodation (117 respondents or 21.83%). The majority of respondents independently arranged their trip to the event (468 respondents or 87.31%) and stayed from one to three days in the tourist destination.

5.3. Manner in which respondents obtained information about a tourism event

The following section provides a table presentation of the relationship between primary travel motivations with regard to the manner in which information about an event was obtained.

Table 2: Manner in which respondents obtained information about a tourism event

Manner of obtaining information about the event	Đakovo Embroide-Ries		Špancir-fest		Renaissance Festival		Rijeka Carnival		Total	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
The Internet	24	42.1	30	41.1	21	38.2	133	37.9	208	38.81
Newspapers	0	0	1	1.4	0	0	0	0	1	0.19
TV	18	31.6	17	23.3	11	20	50	14.2	96	17.91
Radio	0	0	0	0	1	1.8	0	0	1	0.19
Brochures and posters	9	15.8	15	20.5	10	18.2	64	18.2	98	18.28
Local tourist board	0	0	0	0	0	0	1	0.3	1	0.19
Recommendations from friends	6	10.5	10	13.7	12	21.8	76	21.7	104	19.4
Recommendations from residents	0	0	0	0	0	0	1	0.3	1	0.19
Other	0	0	0	0	0	0	26	7.4	26	4.85
Total	**57**	**100**	**73**	**100**	**55**	**100**	**351**	**100**	**536**	**100**

Source: Authors' research

The largest share of respondents (38.81%) used the Internet to obtain information about the tourism events observed in the study. Respondents also obtained information through recommendations from friends (19.40%), brochures and posters (18.28%) and television (17.91%). When viewing the manner of obtaining information by individual event, the results indicate that the largest share of tourists learned about the event via the Internet (Đakovo Embroideries – 42.10%, Špancirfest – 41.10%, Renaissance Festival – 38.20 % and Rijeka Carnival – 37.90%), thus confirming hypothesis H1.

5.4. Motivations to attend a tourism event

To examine the difference in the distribution of responses, the effect of manner of obtaining information was further explored with regard to the primary motivation to attend the tourism event.

Table 3: Primary motivation to attend the tourism event with regard to the manner information was obtained

Motivation		Information obtained via		Total
		The Internet	Other sources	
Curiosity	N	47	1	48
	%	97.9%	2.1%	100.0%
The tourism event's image	N	59	74	133
	%	44.4%	55.6%	100.0%
Desire to learn	N	0	1	1
	%	0.0%	100.0%	100.0%
Recommendation of friends	N	4	199	203
	%	2.0%	98.0%	100.0%
I am accompanying a friend	N	8	1	9
	%	88.9%	11.1%	100.0%
Random visit to the attraction site	N	2	38	40
	%	5.0%	95.0%	100.0%
To learn about the culture and traditions	N	88	14	102
	%	86.3%	13.7%	100.0%
Total	N	208	328	536
	%	38.8%	61.2%	100.0%

Source: Authors' research

The results show that *Curiosity* was the most important motivation for respondents who learned about the tourism event via the Internet (97.9%), followed by *Accompanying a friend* (89.8%). *To learn about the culture and traditions* was the primary motivation of 86.3% of respondents.

Table 4: Motivation to attend an event with regard to manner of obtaining information about the event (Chi-squared)

	VALUE	DF	ASYMP. SIG. (2-SIDED)
Pearson's Chi-Square	314.520[a]	6	.000
Likelihood Ratio	380.470	6	.000
Linear-by-Linear Association	1.104	1	.293
N of Valid Cases	536		

a. 3 cells (21.4%) have an expected count less than 5. The minimum expected count is .39.
Source: Authors' research

The level of significance of the Chi-squared test comparing primary motivations of visitors to attend a heritage-based tourism event based on how the visitors learned about the event is 0.000 ($p<0.05$), which means that a statistically significant difference was observed in the manner of obtaining information with regard to the primary motivation to attend an event. Results show that a significantly larger share of respondents, who reported *To learn about the culture and traditions* as their primary motivation, obtained information about the event via the Internet.

5.5. Visitor (tourist) spending

To examine the difference in the distribution of responses, the effect of manner of obtaining information by visitors about an event was further explored with regard to tourism-related spending of visitors.

Table 5: Planned average spending during the tourism event and stay in the tourist destination

Visitor spending (in €)	$\overline{X}$	SD	MIN	MAX
Total spending during the stay	262.43	200.290	35	660
Transport	49.02	42.168	0	180
Accommodation	85.49	95.288	0	300
Food and beverages	50.88	39.186	10	150
Culture	31.50	14.800	10	65
Sport and recreation	4.99	8.329	0	25
Shopping	20.87	16.502	0	70
Souvenirs	7.46	7.413	0	20
Excursions	12.22	10.368	0	30

Source: Authors' research

The results show that tourist spending on cultural content during the stay in the tourist destination is rather low (31.50 €) relative to average total spending during the stay (262.43 €) and it is evident that the most money is spent on accommodation (85.49 €), food and beverages (50.88 €) and transport (49.02 €).

Table 6: Effect of manner of obtaining information about a tourism event on tourist spending

Spending, by manner of obtaining information	Manner of obtaining information	N	$\overline{x}$	Sd	Std. error
Average spending during the stay (in €)	Via the Internet	208	311.61	194.738	14.054
	Via other sources	328	231.57	197.844	11.310
	TOTAL	536	262.43	200.290	

Source: Authors' research

The above results demonstrate that the tourism-related spending in the tourist destination of respondents, who obtained information via the Internet about the tourism events, is considerably higher (311.61 €) relative to that of respondents who obtained information about an event via other means (231.57 €). Hypothesis H2 is thus confirmed.

Table 7: Effect of manner of obtaining information about a tourism event on tourist spending – t-test

Spending during the stay (in €)	Levene's test of equality of variances		t-test		
	F	Sig.	t	Df	Sig. (2-tailed)
Equal variances are assumed	.178	.673	4.421	534	**.000**
Equal variances are not assumed			4.437	448.645	.000

Source: Authors' research

The application of the t-test shows that the statistical significance between the observed groups is less than 0.05. The level of significance for *Spending during the stay* is less than 5% (p=0.000), given a confidence level of 95%. Hence, there is a statistically significant difference with regard to the manner of obtaining information about an event (Table 8).

5.6. Tourism event satisfaction

To further examine the difference in the distribution of responses, the effect that the manner of obtaining information has on the level of satisfaction with a tourism event was explored.

Table 8: Effect of manner of obtaining information on the general level of event satisfaction

Level of satisfaction		Manner of obtaining information		Total
		Via the Internet	Via other sources	
Very satisfied	N	124	234	358
	%	59.6%	71.3%	66.8%
Satisfied	N	84	94	178
	%	40.4%	28.7%	33.2%
Total	N	208	328	536
	%	100.0%	100.0%	100.0%

Source: Authors' research

Of the respondents participating in the survey, who obtained information via the Internet, 59.6% were very satisfied and 40.4%, satisfied with the heritage-based tourism event they had attended. This indicates that respondents who learned about a heritage-based tourism event via the Internet show a high level of satisfaction with the event, thus confirming hypothesis H3.

Table 9: Effect of manner of obtaining information on the general level of event satisfaction (Chi-square test)

	VALUE	DF	ASYMP. SIG. (2-SIDED)	EXACT SIG. (2-SIDED)	EXACT SIG. (1-SIDED)
Pearson's Chi-Square	7.891[a]	1	.005		
Continuity Correction[b]	7.371	1	.007		
Likelihood Ratio	7.819	1	.005		
Fisher's Exact Test				.006	.003
Linear-by-Linear Association	7.876	1	.005		
N of Valid Cases	536				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 69.07.
b. Computed only for a 2x2 table
Source: Authors' research

In comparing event satisfaction with regard to the manner in which respondents learned about an event, additional checks determined that the level of significance of the Chi-square test is 0.005, indicating that a statistically significant difference was detected in the distribution of respondents' responses regarding the studied variables.

Heritage-based tourism event attendees largely obtained information about the event via the Internet (86.3%), were very satisfied with the event (59.3%) and spent considerably more in the tourist destination (311.61 €), thus confirming the role and importance of sophisticated technologies in visits to tourism events as well as during stays in a tourist destination.

6. Conclusion

Because the value of heritage is immeasurable, in particular from the perspective of the local community, it must be integrated in a way that will ensure its sustainability in the tourism product. To ensure that the integration of heritage with a tourism product will yield the desired outcome, tourist destination tourism managers must be knowledgeable of their

potential tourism market or preferred tourism market niche. To this end, they can apply sophisticated technological solutions that allow for the rapid and constant exchange of data with the potential tourism market in a fairly inexpensive yet efficient way.

The results of the study show that the largest share of visitors obtain information about a tourism event via the Internet. The most important motivations to attend an event are curiosity (97.9%) and wanting to learn about a tourist destination's culture and traditions (86.3%). An analysis of tourist spending confirms that the spending of tourists who obtained information via the Internet is considerably higher (311.61 €) in the tourist destination in comparison with the spending of tourists who obtained information from other sources (231.57 €). The study also shows that 59.6% of respondents were very satisfied with the tourism event.

Sophisticated technologies in tourism are a necessity and an indispensable tool, making a tourist destination accessible 365 days a year and providing a virtual reality experience. Based on the results of the study, the following guidelines are proposed to help event managers and destination tourism managers further develop their offerings and enhance guest satisfaction:

- Ensure the accessibility of information via mobile applications.
- Provide timely information and appealing tourism products.
- Ensure timely feedback with the tourism market.
- Design an evaluation system and standards systems to efficiently monitor the performance of event management.
- Enable the development of corrective action.

When used effectively in tourism, sophisticated technologies can:

- improve the quality of services provided
- minimise mistakes and guest complaints
- enhance the satisfaction of guests with their visit and
- spur economic growth and increase the satisfaction of all stakeholders in a tourist destination.

The authors have identified two basic factors with regard to the study's limitations. The first refers to the selection of (only) four events which are in accordance with the Croatian National Tourist Board's criteria for funding so-called Top Events and which are on the UNESCO List of Intangible Cultural Heritage. The second factor refers to the lack of previous studies in the field of information technology usage in intangible heritage-based tourism events as elements of a tourist destination's tourism offering.

To obtain a more comprehensive picture of the use of sophisticated technologies in tourism and culture, two sectors vital to the performance and economic sustainability of tourism in Croatia, the authors suggest that future research should include a larger number of tourism events based on the intangible heritage that is on the UNESCO List of Intangible Cultural Heritage of Croatia, or are among the Top Events selected by the Croatian National Tourist Board, or have a longstanding tradition.

This research should be continued in the future period, with emphasis on further testing the results of the study to examine the differences established between the observed groups.

The authors also suggest investigating the attitudes and opinions of tourism managers and the local community as vital stakeholders in the creation of a tourist destination's tourism product, together with all other stakeholders involved in designing a heritage-based tourism event.

To successfully reach the target tourism market, the organisation of heritage-based tourism events needs to involve the use of the sophisticated technological solutions presented in this paper. Innovation, sophisticated technology and knowledge are at the core of competitiveness in the 21st century and must be used properly and continuously if a tourist destination is to achieve competitive excellence in the tourism market.

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THE ROLE OF MARKETING STRATEGY IN OVERALL PERFORMANCE OF NONPROFIT ORGANIZATIONS

ABSTRACT

The role of marketing in the sustainability of nonprofit organizations is in the focus of researchers globally, but no consensus, on its importance and effects, has yet been reached. Particular emphasis in this subject should be put on marketing strategy. Given the complexity of the nonprofit sector, from its basic determinants to specifics of each organization, it is not surprising that nonprofits often use marketing activities selectively and intuitively, while at the same time, almost completely ignore the effect of implementing a complete marketing strategy. The reason for this lies in the belief that too much concern about strategy and positioning puts in the background the fact that efficiency is a key factor in the success of the organization. It can be concluded that the implementation of marketing strategy depends on objective factors such as lack of resources, staff and skills, but also subjective factors, especially the orientation of nonprofit organizations in the humanitarian part of work, which often avoids overemphasizing the cost of marketing activities. This is due to the fear that key stakeholders will get the impression that the orientation of the organization is too similar to the profit sector, and therefore lose interest in supporting the effort of the organization in their charitable work. In this way, the nonprofit sector is in a vicious circle of rejecting those tools and principles that can significantly help them grow and develop. The main goal of this paper is to determine the role of marketing strategy in the overall performance of nonprofit organizations. It is argued that the level of awareness of marketing strategy (as well as its elements) importance impacts the achievement of organizational goals. The empirical part of the paper is based on the research conducted on a sample of nonprofit organizations in Croatia and results suggest that non-profit organizations in Croatia don't have their own marketing strategy and only partly and insufficiently use its elements, which impact their overall performance. Additionally, results suggest that nonprofits are aware of the marketing strategy benefits, but, due to objective (lack of financial, material and human resources) and subjective (resistance to the implementation of business-like practices, „betrayal" of humanitarian principles) reasons, don't use it and thus endanger, in the long run, their survival.

***Keywords:** marketing strategy, marketing activities, nonprofit, sustainability.*

1. Introduction

The idea of nonprofit organization marketing is relatively old and leading authors have been aware of nonprofit marketing activities' importance for several decades. In recent years pressure to enhance the organizational performance of nonprofit organizations is more obvious than ever, due to complex and numerous reasons. That pressure makes conflicts in nonprofits' everyday work: from one side they are striving to fulfill their social mission but, from the other side they are „forced" to do it with a business-like mindset or market orientation (Sanders,

2015). Numerous researches (Dolnicar & Lazarevski, 2009; Pope et al., 2009; Andreasen, 2012; Omar et al, 2014; Randle & Dolnicar, 2017) are exploring nonprofit marketing and performance from various aspects, focusing mainly on the adaption of profit business practices, or development of new practices taking into consideration all specificities of the nonprofit sector, and with the main purpose to improve efficiency in achieving organizational goals. The result of these efforts is that marketing practices are significantly accepted and implemented which consequentially led to better organizational performance (Lee, 2019). But, although the majority of nonprofit organizations understand market orientation toward all key stakeholders as a must have in the everyday work, they are aware that it can't be entirely successfully implemented from profit to nonprofit sector (Andreasen & Kotler, 2008). The dominant reason is that they are poorly equipped for implementation (Clarke &Mount, 2001) particularly in humanitarian organizations (Ibid.). Despite the widely accepted point of view of nonprofit marketing necessity, there is a lack of generally accepted rules, concepts and theories specifically tailored for the nonprofit sector, although nonprofit organizations widely use some elements of marketing strategy (Lee, 2019). The awareness and declarative acceptance and implementation of marketing in the nonprofit sector are often insufficient for organizations striving to achieve sustainability. There could be no improvement in efficiency with „new" or „improved" practices which are often implemented without consensus among employees and volunteers in nonprofit organizations and pre-implementation education or „know how". In other words, the role of marketing strategy or its components in overall performance, and thus sustainability, should be put in the proper context. This is even more important looking in future as it can be anticipated that already limited resources that are at disposal for the nonprofit sector will be even more limited. Therefore, all efforts which lead to better performance with rational use of resources is a significant step forward further development of a specific nonprofit body of knowledge.

2. Literature review

According to American Marketing Association, „*marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large "(*AMA, 2017). From this definition, it is obvious that marketing strategy is a variety of synchronized activities that can help an organization fulfill stakeholders' needs. The problem arises of multiple stakeholders' environment is accepted only on a declarative level, due to misunderstanding the importance of environmental analysis. Without analysis which should enlighten all stakeholders' needs, particularly beneficiaries and donors, it is impossible to foreseen opportunities and threats and exploits strengths and weaknesses in the planning process. According to Bryson, (2004), strategic planning in nonprofit and public organizations should be applicable and permanent. It should start at the widest organization level by defining the social problem organization wants to solve, i.e. by creating a mission and guidelines for problem-solving (Andreasen & Kotler, 2008). Strategic planning and implementation of its components in all activities can help nonprofit organizations reduce financial vulnerability (Hu & Kapucu, 2017). The major problem in planning is the measurability of the mission (Sawhill & Williamson, 2001) as an optimal framework applicable to all nonprofit organizations have not been found yet. Despite all obstacles, recent findings suggest that activities directed toward shaping quantitative attributes of mission statement lead to better performance of nonprofit organizations (Pandey & Pandey, 2017). Simultaneously, organizations with a „fashionable" mission, and at least partially measurable one, could gain benefits by embracing marketing principles and activities in their work (Randle & Dolnicar, 2017). The goals of nonprofit organizations are hard to be shaped, mostly based on well know specificities of the sector: multiple stakeholders, different

and often incomparable fields of work, social component, etc. Regarding goals measurability, dynamics and multiplicity, researchers have not yet found all performance dimensions (Moura et al., 2019), but significant progress could be noticed in recent years. Segmentation is a critical process in marketing strategy, and can make a significant impact on the overall performance of the nonprofit organization, but only if the organization embraces it and marketing in general (Randle & Dolnicar, 2017). Twenty and more years ago, it was, at least, incorrect to talk about competition in the nonprofit sector, but nowadays, with constant growth in a number of organizations that are competing for limited financial, material and human resources, nonprofit organizations must think about competitors and adjust their activities accordingly to perform in a planned way (Andreasen & Kotler, 2008; Alfirević et al., 2013). Organizations need to position themselves in minds of their key stakeholders and competitors. If an organization position itself in a desirable way, different from its competitors, it has solid ground for successful performance (Alfirević et al, 2013, Pope et al., 2009). This is very important for all new nonprofit organizations which should, from the very beginning of their work, strive to be differentiated from competitors due to efficiency in achieving goals and survival (Mendoza-Abarca & Gras, 2019). The process of shaping and delivering value through marketing mix is often under evaluation and adjustment to current trends. As marketing strategy plays a critical role in overall performance and, thus, sustainability, marketing mix is a logical starting point to notice and propose improvements in practice that could improve performance in satisfying demand by creating value (Pomering, 2017). As results of various researches suggest, nonprofit organizations use promotion most of all marketing mix elements, followed by a distribution (or a place), while product and price are less applied (Pope et al, 2009; Dolnicar & Lazarevski, 2009; Pomering, 2017).

Pope et al. (2009) argued that a marketing strategy tailored for the nonprofit sector must include guidelines for all key stakeholders' groups, with the main purpose to fulfill the mission and goals. The creation of a new marketing strategy is demanding work even for the profit sector let alone for the nonprofit which regularly lacks all kinds of resources. The sustainability, or, at least, fulfillment of organizational goals, is one of the main reasons for marketing strategy implementation in the nonprofit sector. Accordingly, the question of performance and outcome measurement arises (Lee, 2019), with a growing demand to shape an applicable set of organizational performances that nonprofit organizations can track, evaluate and shape their activities accordingly. This applicability of performance measurement in the nonprofit sector is a challenge (Moura et al., 2019), and a widely accepted model have not yet been proposed due to nonprofit sector specifics. But, organizations are forced to measure their performance and are using different models adopted from the profit sector. The most frequently used one is the Balanced scorecard model (Kaplan & Norton, 1992), adapted for the nonprofit sector (Kaplan, 2001) in adjusting four dimensions to nonprofit specifies and changing the hierarchy of importance between dimensions. As Andreasen and Kotler (2008) suggest performances that should be monitored and evaluated are: financial perspective, target audience perspective, core competencies and innovation. But this approach is relatively hard to be followed for all small nonprofit organizations due to its focus on organizational performance and not the measurement of their program's efficiency (Poister, 2003). When human resources are observed from a performance perspective, their importance could not be overseen. Due to competitors, limited resources, a social perspective of their work, people are one of the most important success factors for all organizations. Besides their role in the quality of service provided to beneficiaries, it is important to monitor and evaluate the efficiency of internal operations (Perez Jolles et al., 2017). Employees or volunteers are directly in contact with beneficiaries and can improve organizational efforts for better performance (Ibid.). But, due to the complexity of the process of performance measurement, there is no surprise that generic models have not been proposed

yet, so both scholars and organizations use specific and situation-adjusted sets of performance measures that can't be compared. To summarize, the role of marketing strategy in the overall performance of nonprofit organizations is not completely clarified so all researches that lead toward a better comprehension of this relationship will contribute to the nonprofit sector body of knowledge.

Accordingly, the empirical part of this paper explores the role of marketing strategy through its elements on the overall performance of nonprofit organizations defined by the most frequently used nonfinancial and financial measurable performance indicators.

3. Research methodology, objective, sample and questionnaire

The main objective of this paper is to investigate the role that marketing strategy elements have in organizational performance by achieving organizational financial and non-financial goals. The operationalization of marketing strategy and overall performance elements is shown in Table 1.

Table 1: Operationalization of research variables

Components	Description	Authors
Marketing strategy components (marketing activities)		
Analysis	Mission accepted and reflected in organization culture	Andreasen & Kotler (2008); Mcloughlin & Aaker (2010)
Planning	Planning takes into consideration the internal and external environment	Bryson (2004); Hu & Kapucu (2017)
Mission/goals	Mission and goals alignment to multiple stakeholders environment	Bennet (2007); Pandey & Pandey (2017)
Segmentation	Segmentation based on determined criteria, for each group of key stakeholders	Randle & Dolnicar (2017)
Product	Product/service shaped based on target segment needs, specialization that differentiates a product	Dolnicar & Lazarevski (2009); Pomering (2017)
Price	Price for beneficiaries calculated based on costs (regardless of who is paying)	Alfirević et al. (2013); Dolnicar & Lazarevski (2009)
Distribution	Distribution adjusted to beneficiaries needs	Lai & Poon (2009); Pope et al. (2009)
Promotion	Purpose of communication with key stakeholders	Alfirevic et al. (2013); Dolnicar & Lazarevski (2009)
Overall performance		
Financial goals	Total revenues; Total income from donations; Total expenditure; Total administrative costs	Bennett (2007); Lee (2019)
Nonfinancial goals	Nonfinancial asset; Number of new donors; Number of employees; Number of volunteers; Number of beneficiaries	Alfirević et al. (2013); Dolnicar & Lazarevski (2009); Lee (2019)

Source: Author

In order to meet the research objective, the following research question was proposed:
„Do marketing strategy elements play an important and significant role in overall organizational performance? "

The study was conducted on a sample of 65 Croatian nonprofit organizations with humanitarian areas of interest. The questionnaire, which was fulfilled by managing representative of organizations, comprises of three main parts. The first part consisted of general information. In the second part, participants were asked to estimate the level of marketing activities implementation in their organizations, on a scale from 1 not implemented to 3 fully implemented. The third part referred to organizational goals where respondents had to evaluate goals achievement comparing to plan on 5 – point Likert scale (1 completely below plan; 3 – according to plan; 5 – completely above plan). In addition, the fourth part was added with a purpose to determine attitude toward marketing in nonprofit organizations. In this part

respondents had to express their attitude toward selected statements regarding marketing in nonprofit organizations on 5- point Likert scale (1 – totally disagree to 5- totally agree). In total, from 150 targeted organizations, 65 of them answered questionnaires sent by mail, in the period November 2019 –January 2020.

4. Research results

From the data shown in Table 2, it is visible that organizations have different and various fields of activities, with the majority (53.9%) oriented toward people with various disabilities. Most of them are providing service locally or regionally (64.6%) with only 4.6% of organizations with international impact of their activities. Additionally, more than 50% of organizations have less than 6 employees (81.5%) and less than 11 volunteers (93.8%). With this, a relatively small number of available human resources, the majority of organizations are dealing with more than 51 beneficiaries. It should be noted that 26.2% of organizations don't know the exact number of beneficiaries.

Table 2: Respondents' general information

		Frequency	%			Frequency	%
Primary field of activities				**Geographical location of activities**			
Children and youth		6	9.2	Local		9	13.8
Women rights		5	7.7	Regional		33	50.8
Socially excluded		3	4.6	National		20	30.8
Disabilities		35	53.9	International		3	4.6
National minorities		5	7.7	*Total*		*65*	*100.0*
Nature and animals		11	16.9				
Total		*65*	*100.0*				
Number of employees			**Number of volunteers**			**Number of beneficiaries**		
0	11	16.9	0	1	1.5	0 to 10	0	0.0
1 to 5	42	64.6	1 to 5	32	49.2	11 to 50	8	12.3
6 to 10	10	15.4	6 to 10	28	43.1	51 to 100	12	18.5
11 to 20	2	0.0	11 to 20	3	4.6	101 and more	28	43.1
21 and more	0	3.1	21 and more	1	1.5	Unknown	17	26.2
Total	*65*	*100.0*	*Total*	*65*	*100.0*	*Total*	*65*	*100.0*

Source: empirical research

Comparing results of goals achievement (Table 3), it is visible that organizations are performing according to plan in the Number of beneficiaries (3.23) and the Number of volunteers (3.05). For all other goals, performance is under planned one, with not even one goal with higher performance than planned. The lowest result is for the Number of new donors (2.40).

Table 3: Assessment of goals achievement (comparing to plan)

Goals achievement	N	Mean	St. Dev
Total revenues	65	2.57	.951
Total income from donations	65	2.58	1.029
Total expenditure	65	2.82	.768
Total administrative costs	65	2.82	.768
Nonfinancial asset	65	2.88	.927
Number of new donors	65	2.40	.965
Number of employees	65	2.68	1.002
Number of volunteers	65	3.05	.959
Number of beneficiaries	65	3.23	.965

Source: empirical research

In order to estimate the impact of marketing strategy elements on their performance, organizations were divided into three groups based on selected marketing activities usage in everyday work. Criteria for grouping is based on responses where Group 1 consists of organizations that are not using selected activity at all, Group 2 using activity occasionally, and Group 3 using activity regularly in everyday work. In the following tables, assessment of goals achievement for each group is shown, with additional analysis of statistically significant differences between groups, based on Kruskal-Wallis H rank-based nonparametric test (normality assumption is violated). For each determined significant difference Kruskal-Wallis mean rank, Chi square and degrees of freedom are shown in the adjoined table for each marketing activity. Data shown in Table 4 suggest that organizations that are using analysis to determine their own strengths and weaknesses, as well as opportunities and threats, are performing better and that differences are more noticeable comparing non users (Group 1) to semi or full users (Group 2 and 3).

Table 4: Descriptives and Kruskal Wallis test significance results for MA - analysis

Marketing activities - analysis	Group 1 not implemented			Group 2 partially implemented			Group 3 fully implemented			KW test
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev	p (sig.)
Performance measure										
Total revenues	9	2.00	.707	40	2.68	.971	16	2.63	.957	.158
Total income from donations	**9**	**1.78**	**.667**	**40**	**2.67**	**1.071**	**16**	**2.81**	**.911**	**.028**
Total expenditure	9	2.67	.707	40	2.78	.800	16	3.00	.730	.573
Total administrative costs	9	2.44	1.014	40	2.85	.736	16	2.94	.680	.402
Nonfinancial asset	9	2.44	1.236	40	2.85	.893	16	3.19	.750	.097
Number of new donors	9	2.44	.882	40	2.27	1.012	16	2.69	.873	.305
Number of employees	**9**	**2.00**	**.707**	**40**	**2.70**	**1.043**	**16**	**3.00**	**.894**	**.036**
Number of volunteers	9	2.67	.707	40	3.10	1.008	16	3.13	.957	.349
Number of beneficiaries	9	3.22	1.202	40	3.20	.966	16	3.31	.873	.900

Source: empirical research

It should be noted that only for two goals this difference is significant at 5%: Total income from donations (the highest rank is for Group 3: 37.84) and Number of employees (the highest rank is for Group 2:33.59), as shown in Table 5.

Table 5: Kruskal-Wallis test results for MA – analysis

Marketing activities - analysis		N	Mean Rank	Marketing activities - analysis		N	Mean Rank
Total income from donations (χ^2=7.174; df=2)	1 not implemented	9	18.56	**Number of employees** (χ^2=6.624; df=2)	1 not implemented	9	20.06
	2 partially implemented	40	34.31		2 partially implemented	40	33.59
	3 fully implemented	16	37.84		3 fully implemented	16	28.81
	Total	65			Total	65	

Source: empirical research

Results presented in Table 6 are suggesting the same outcome for planning activity impact on overall performance as it was shown for analysis. Goals achievement is better for all organizations that are using at least partially marketing activities, and the best results are for organizations that had fully implemented planning in their work. Interestingly, no statistically significant difference was found between groups for marketing activity – planning.

Table 6: Descriptives and Kruskal Wallis test significance results for MA - planning

Marketing activities - planning	Group 1 not implemented			Group 2 partially implemented			Group 3 fully implemented			KW test
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev	p (sig.)
Performance measure										
Total revenues	3	2.00	1.000	26	2.54	.948	36	2.64	.961	.571
Total income from donations	3	2.00	1.000	26	2.46	1.104	36	2.72	.974	.310
Total expenditure	3	3.00	.000	26	2.58	.758	36	2.97	.774	.236
Total administrative costs	3	2.33	.577	26	2.65	.745	36	2.97	.774	.134
Nonfinancial asset	3	2.00	1.000	26	2.73	.962	36	3.06	.860	.112
Number of new donors	3	2.00	1.000	26	2.23	.951	36	2.56	.969	.325
Number of employees	3	2.00	1.000	26	2.58	.987	36	2.81	1.009	.412
Number of volunteers	3	3.33	.577	26	2.81	.939	36	3.19	.980	.184
Number of beneficiaries	3	3.33	.577	26	2.92	1.017	36	3.44	.909	.088

Source: empirical research

Comparing results (Table 7 and 8) for mission and goals adjustment to multiple stakeholders' environment, it is interesting to notice that no organization in the sample is, at least partially, doing this activity in everyday work (Table 7). The majority of organizations declared themselves as full users of this activity (49). According to descriptives and Mann-Whitney U test significance, the full users' group has the highest performance measure score for all three statistically significant differences at 5%. Results, in general, suggest that organizations with higher intensity of implementing this activity in their work are performing better. The mean for each performance measure is higher for full users and overall descriptive analysis shows that all goals are fulfilled somewhere as planned.

Table 7: Descriptives and Mann-Whitney test results for MA – mission, goals, stakeholders

Marketing activities – mission, and goals alignment to multiple stakeholders environment	Group 1 not implemented			Group 2 partially implemented			Group 3 fully implemented			MW test
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev	p (sig.)
Performance measure										
Total revenues				16	2.31	.873	49	2.65	.969	.207
Total income from donations				**16**	**2.13**	**.885**	**49**	**2.73**	**1.036**	**.030**
Total expenditure				16	2.81	.655	49	2.82	.808	.656
Total administrative costs				16	2.69	.602	49	2.86	.816	.524
Nonfinancial asset				**16**	**2.25**	**.931**	**49**	**3.08**	**.838**	**.002**
Number of new donors				16	2.06	.854	49	2.51	.982	.097
Number of employees				**16**	**2.25**	**1.065**	**49**	**2.82**	**.950**	**.032**
Number of volunteers				16	2.81	1.047	49	3.12	.927	.336
Number of beneficiaries				16	3.06	.680	49	3.29	1.041	.373

Source: empirical research

Table 8: Mann-Whitney test results for MA – mission, goals, multiple stakeholders

Marketing activities – mission, goals, stakeholders		N	Mean Rank	Marketing activities - mission, goals, stakeholders		N	Mean Rank
Total income from donations (Mann-Whitney $U=315$; $Z=-1.261$)	1 not implemented	0	-	**Number of employees** (Mann-Whitney $U=260.5$; $Z=-2.146$)	1 not implemented	0	-
	2 partially implemented	40	24.50		2 partially implemented	40	24.78
	3 fully implemented	16	35.78		3 fully implemented	16	35.68
	Total	65			Total	65	
Nonfinancial asset (Mann-Whitney $U=213.5$; $Z=-3.084$)	1 not implemented	0	-				
	2 partially implemented	40	21.84				
	3 fully implemented	16	36.64				
	Total	65					

Source: empirical research

Results in Table 9 indicate a similar pattern in segmentation's, as a marketing activity, impact on overall performance measured by goals achievement. All highest means are in full user groups with only two of them have value less than planned (3): Number of new donors (2.73) and Number of volunteers (2.91).

Table 9: Descriptives and Kruskal Wallis test significance results for MA - segmentation

Marketing activities - segmentation	Group 1 not implemented			Group 2 partially implemented			Group3 fully implemented			KW test
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev	p (sig.)
Performance measure										
Total revenues	23	2.35	.982	31	2.55	.850	11	3.09	1.044	.106
Total income from donations	**23**	**2.17**	**1.029**	**31**	**2.71**	**.973**	**11**	**3.09**	**.944**	**.025**
Total expenditure	**23**	**2.74**	**.619**	**31**	**2.65**	**.755**	**11**	**3.45**	**.820**	**.012**
Total administrative costs	**23**	**2.65**	**.714**	**31**	**2.74**	**.729**	**11**	**3.36**	**.809**	**.049**
Nonfinancial asset	**23**	**2.57**	**.896**	**31**	**2.90**	**.908**	**11**	**3.45**	**.820**	**.023**
Number of new donors	23	2.26	.915	31	2.39	1.022	11	2.73	.905	.497
Number of employees	**23**	**2.30**	**.926**	**31**	**2.71**	**1.006**	**11**	**3.36**	**.809**	**007**
Number of volunteers	23	3.04	.976	31	3.10	.944	11	2.91	1.044	.870
Number of beneficiaries	23	3.17	.887	31	3.16	1.036	11	3.55	.934	.588

Source: empirical research

Statistically significant differences, determined with the Kruskal-Wallis H test show that the full users group (Group 3) has the highest rank and mean rank for all significant differences (from 42.02 to 46.23, Table 10) in performance measures (Total income from donations, Total expenditure; Total administrative costs, Nonfinancial asset, Number of employees).

Table 10: Kruskal-Wallis test results for MA – segmentation

Marketing activities - segmentation		N	Mean Rank	Marketing activities - segmentation		N	Mean Rank
Total income from donations (χ^2=7.360; df=2)	1 not implemented	23	25.48	**Nonfinancial asset** (χ^2=7.503; df=2)	1 not implemented	23	27.04
	2 partially implemented	31	35.35		2 partially implemented	31	33.63
	3 fully implemented	11	42.09		3 fully implemented	11	43.68
	Total	65			Total	65	
Total expenditure (χ^2=8.866; df=2)	1 not implemented	23	32.17	**Number of employees** (χ^2=10.022; df=2)	1 not implemented	23	25.83
	2 partially implemented	31	29.15		2 partially implemented	31	33.63
	3 fully implemented	11	45.59		3 fully implemented	11	46.23
	Total	65			Total	65	
Total administrative costs (χ^2=6.037; df=2)	1 not implemented	23	30.20				
	2 partially implemented	31	31.48				
	3 fully implemented	11	43.14				
	Total	65					

Source: empirical research

Although the group of fully implementers (Group 3) is the smallest one (11), so results should be taken with caution, it can be argued that segmentation is a process that helps organizations to be more efficient and improve their own organizational performance by adapting their activities to recognized needs of smaller and alike groups, instead of doing everything to everyone simultaneously.

Regarding differences shown among groups performance implementation of major product/service determinant in their work (Table 11), is visible that group that fully recognize product importance, and thus shape their offerings to beneficiaries accordingly, is performing better than others. But, this performance is somewhere according to plan (the lowest mean is for the number of new donors 2.67 and the highest one is for the number of beneficiaries 3 .27).

It is important to notice that fully implementing group is the largest one (N=33). Differences between groups 1 and 2 showed mixed results comparing means of performance measures.

Table 11: Descriptives and Kruskal Wallis test significance results for MA - product

Marketing activities - product	Group 1 not implemented			Group 2 partially implemented			Group3 fully implemented			KW test
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev	p (sig.)
Performance measure										
Total revenues	7	**2.29**	**.488**	25	**2.20**	**.948**	33	**2.91**	**.980**	**.009**
Total income from donations	7	**2.14**	**.378**	25	**2.16**	**1.104**	33	**3.00**	**1.061**	**.003**
Total expenditure	7	**2.43**	**.535**	25	**2.64**	**.758**	33	**3.03**	**.637**	**.029**
Total administrative costs	7	**2.57**	**.535**	25	**2.56**	**.745**	33	**3.06**	**.609**	**.019**
Nonfinancial asset	7	**2.43**	**.787**	25	**2.56**	**.962**	33	**3.21**	**.857**	**.024**
Number of new donors	7	2.00	.816	25	2.16	.951	33	2.67	.957	.059
Number of employees	7	2.57	.976	25	2.40	.987	33	2.91	.947	.071
Number of volunteers	7	**2.14**	**.690**	25	**3.40**	**.939**	33	**2.97**	**.847**	**.006**
Number of beneficiaries	7	2.71	.756	25	3.32	1.017	33	3.27	.839	.242

Source: empirical research

Kruskal-Wallis H test shows that there are statistically significant differences for six out of nine performance measures (Table 12). The fully implementing group (33) has the highest mean rank for Total revenues (39.58), Total income from donations (40.48), Total expenditure (37.74), Total administrative costs (38.17), Nonfinancial asset (38.50), while the group that only partially implemented product determinants (Group 2, N=25) has the highest mean rank for the Number of volunteers (39.14).

Table 12: Kruskal-Wallis test results for MA – product

Marketing activities - product		N	Mean Rank	Marketing activities - product		N	Mean Rank
Total revenues (χ^2=9.481; df=2)	1 not implemented	7	28.14	Total administrative costs (χ^2=7.889; df=2)	1 not implemented	7	26.29
	2 partially implemented	25	25.68		2 partially implemented	25	28.06
	3 fully implemented	33	39.58		3 fully implemented	33	38.17
	Total	65			Total	65	
Total income from donations (χ^2=11.603; df=2)	1 not implemented	7	25.07	Nonfinancial asset (χ^2=7.499; df=2)	1 not implemented	7	24.86
	2 partially implemented	25	25.34		2 partially implemented	25	28.02
	3 fully implemented	33	40.48		3 fully implemented	33	38.50
	Total	65			Total	65	
Total expenditure (χ^2=7.062; df=2)	1 not implemented	7	22.71	Number of volunteers (χ^2=10.225; df=2)	1 not implemented	7	15.43
	2 partially implemented	25	29.62		2 partially implemented	25	39.14
	3 fully implemented	33	37.74		3 fully implemented	33	32.08
	Total	65			Total	65	

Source: empirical research

Product determinants in nonprofit organizations can slightly improve overall performance comparing means of performance measures but, simultaneously, these slight differences are significant. Therefore, the implementation of activities that clearly define the scope and clarity of nonprofits offering to key stakeholders, as a part of the basic marketing mix can impact the overall performance of nonprofit organizations.

Table 13, shows descriptives of groups divided by the implementation of price calculation costs in their work, regardless of their selling price (are they „selling the product at market price" or have donors that are paying for the product provided for beneficiaries). The group of full users of this activity is the smallest one (N=7), and the majority of organizations are not calculating the price based on costs at all (N=43). Comparison of means for all performance measures

shows the importance of this activity. All means ranks are the highest for full users (from 2.86 to 4.00), they are performing better than planned for all performance measures except Nonfinancial asset (2.86). At the same time, non users (Group 1, N=43) are performing worse than planned for all except the Number of beneficiaries (3.28.).

Table 13: Descriptives and Kruskal Wallis test significance results for MA – price

Marketing activities – price calculated based on costs (regardless of who is paying)	Group 1 not implemented			Group 2 partially implemented			Group3 fully implemented			KW test
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev	p (sig.)
Performance indicator										
Total revenues	**43**	**2.33**	**.680**	**15**	**2.60**	**.828**	**7**	**3.71**	**.756**	**.001**
Total income from donations	43	2.65	.752	15	2.67	.816	7	3.43	1.134	.170
Total expenditure	43	2.86	.516	15	2.47	.834	7	3.29	1.380	.134
Total administrative costs	**43**	**2.88**	**.544**	**15**	**2.47**	**.640**	**7**	**3.43**	**1.272**	**.024**
Nonfinancial asset	43	2.88	.851	15	2.87	.640	7	3.57	1.134	.256
Number of new donors	43	2.35	.813	15	2.73	.884	7	2.86	1.215	.248
Number of employees	**43**	**2.44**	**.734**	**15**	**3.20**	**1.146**	**7**	**3.71**	**1.380**	**.017**
Number of volunteers	**43**	**2.95**	**.844**	**15**	**3.20**	**.862**	**7**	**4.00**	**.577**	**.009**
Number of beneficiaries	43	3.28	.826	15	3.07	1.033	7	3.29	1.254	.833

Source: empirical research

Only four performance measures have significant differences (Table 14), and the highest mean rank is showed in the group of full users (Group 3), ranging from 37.21 for Total administrative costs to 55.36 for Total revenues.

Table 14: Kruskal-Wallis test results for MA – price

Marketing activities - price		N	Mean Rank	Marketing activities - price		N	Mean Rank
Total revenues (χ^2=13.562; df=2)	1 not implemented	43	29.19	**Number of employees** (χ^2=8.128; df=2)	1 not implemented	43	28.67
	2 partially implemented	15	33.50		2 partially implemented	15	39.50
	3 fully implemented	7	55.36		3 fully implemented	7	45.64
	Total	65			Total	65	
Total administrative costs (χ^2=7.498; df=2)	1 not implemented	43	34.80	**Number of volunteers** (χ^2=9.430; df=2)	1 not implemented	43	29.28
	2 partially implemented	15	25.83		2 partially implemented	15	35.13
	3 fully implemented	7	37.21		3 fully implemented	7	51.29
	Total	65			Total	65	

Source: empirical research

At the stage of comparing product and price the discrepancy of marketing activities connected to marketing mix elements are shown. Although the majority of organizations in this research are showing understanding and are shaping product, there is the majority that is not subsequently shaping their price policy. The impact of this discrepancy is reflecting in their overall performance.

The result of distribution that ensures organizational offering of products and service to beneficiaries are adjusted to their needs and possibilities are shown in Table 15. The majority of organizations are full users (group 3, N=34), and the mean rank for performance measures is, once again, the highest for the same group, except for the Total administrative costs (2.91). In all performance measures (except Number of beneficiaries and Total administrative costs) Group 1 and 2 are performing below planned. It should be noted that non users (Group 1) are the smallest group (N=3), so the results should be considered with caution.

Table 15: Descriptives and Kruskal Wallis test significance results for MA – distribution

Marketing activities – distribution adjusted to beneficiaries needs	Group 1 not implemented			Group 2 partially implemented			Group3 fully implemented			KW test
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev	p (sig.)
Performance indicator										
Total revenues	**3**	**1.67**	**.577**	**28**	**2.36**	**.780**	**34**	**2.71**	**.799**	**.030**
Total income from donations	**3**	**2.00**	**.000**	**28**	**2.43**	**.790**	**34**	**3.06**	**.776**	**.002**
Total expenditure	3	2.33	.577	28	2.64	.731	34	3.00	.739	.065
Total administrative costs	3	3.00	1.732	28	2.75	.441	34	2.91	.793	.478
Nonfinancial asset	**3**	**2.00**	**1.000**	**28**	2.79	.686	**34**	3.18	.904	**.042**
Number of new donors	3	2.00	.000	28	2.29	.937	34	2.68	.945	.166
Number of employees	3	2.33	.577	28	2.71	1.150	34	2.82	.936	.644
Number of volunteers	**3**	**2.33**	**.577**	**28**	**2.79**	**.917**	**34**	**3.24**	**.781**	**.041**
Number of beneficiaries	3	3.00	.000	28	3.11	.916	34	3.35	.950	.661

Source: empirical research

The mean rank for performance measures is the highest for the full users group (Group 3), from 37.09 for Nonfinancial asset to 39.94 for Total income from donations.

Table 16: Kruskal-Wallis test results for MA –distribution

Marketing activities - distribution		N	Mean Rank	Marketing activities - distribution		N	Mean Rank
Total revenues (χ^2=7.022; df=2)	1 not implemented	3	14.50	**Nonfinancial asset** (χ^2=6.321; df=2)	1 not implemented	3	15.50
	2 partially implemented	28	29.39		2 partially implemented	28	29.91
	3 fully implemented	34	37.60		3 fully implemented	34	37.09
	Total	65			Total	65	
Total income from donations (χ^2=12.026; df=2)	1 not implemented	3	15.50	**Number of volunteers** (χ^2=6.387; df=2)	1 not implemented	3	17.83
	2 partially implemented	28	26.45		2 partially implemented	28	28.80
	3 fully implemented	34	39.94		3 fully implemented	34	37.79
	Total	65			Total	65	

Source: empirical research

Analyzing distribution determinants, it can be concluded that the organizations show basic knowledge of this activity's importance for overall performance, and that majority of organizations are trying to adapt their activities to beneficiaries' needs to improve overall performance.

The final marketing activity in this research is promotion, as a final element of the marketing mix. Results shown in Table 17 are suggesting that organizations are not fully implementing promotion as a must-have in their work. The largest group is of partial users (Group 2, N=33), followed by full users (Group 3, N=24). As expected, the smallest group is non users (Group 1, N=8). The analysis of performance measures shows mixed results but the majority of performances have the highest mean for group of full users. Looking at the results of full users, the highest mean is for the Number of volunteers and beneficiaries (3.42) and the lowest for the Number of new donors (2.87).

Table 17: Descriptives and Kruskal-Wallis test results for MA – promotion

Marketing activities – promotion	Group 1 not implemented			Group 2 partially implemented			Group3 fully implemented			KW test
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev	p (sig.)
Performance indicator										
Total revenues	**8**	**2.25**	**.886**	**33**	**2.30**	**.684**	**24**	**2.88**	**.850**	**.028**
Total income from donations	**8**	**2.62**	**.744**	**33**	**2.45**	**.754**	**24**	**3.17**	**.816**	**.007**
Total expenditure	8	3.13	.354	33	2.61	.788	24	3.00	.722	.071
Total administrative costs	8	2.75	.463	33	2.76	.867	24	3.00	.511	.244
Nonfinancial asset	8	2.88	1.126	33	2.79	.740	24	3.21	.884	.171
Number of new donors	**8**	**2.13**	**.641**	**33**	**2.30**	**.847**	**24**	**2.87**	**.900**	**.038**
Number of employees	8	2.75	1.282	33	2.61	.899	24	2.96	1.083	.363
Number of volunteers	**8**	**2.62**	**.518**	**33**	**2.85**	**.870**	**24**	**3.42**	**.830**	**.017**
Number of beneficiaries	8	3.38	.518	33	3.06	.998	24	3.42	.881	.234

Source: empirical research

Kruskal-Wallis H test shows that there are statistically significant differences (Table 17 and 18) for four performance measures (Total revenues, Total income from donations, Number of new donors and number of volunteers). The full users group (24) has the highest mean rank for all four measures (from 40.15 to 41.29), while the mean rank for semi and non-users have slight differences (the difference in mean ranks for all performance measures ranging from -3.39 to 4.92).

Table 18: Kruskal-Wallis test results for MA – promotion

Marketing activities - promotion		N	Mean Rank	Marketing activities - promotion		N	Mean Rank
Total revenues (χ^2=7.119; df=2)	1 not implemented	8	26.75	**Number of new donors** (χ^2=6.556; df=2)	1 not implemented	8	25.94
	2 partially implemented	33	29.11		2 partially implemented	33	29.52
	3 fully implemented	24	40.44		3 fully implemented	24	40.15
	Total	65			Total	65	
Total income from donations (χ^2=9.960; df=2)	1 not implemented	8	30.50	**Number of volunteers** (χ^2=8.147; df=2)	1 not implemented	8	24.38
	2 partially implemented	33	27.11		2 partially implemented	33	29.30
	3 fully implemented	24	41.29		3 fully implemented	24	40.96
	Total	65			Total	65	

Source: empirical research

Results presented in Tables 17 and 18 suggest that full users (Group 3) are performing better than others. For example, the impact of promotion activities implementation, through message shaping and carefully selecting promotional channels so that key stakeholders can hear the message and recognize the importance of the activity, is particularly seen in performances that are reflecting financial situation (Total revenues and Total income from donations) and human resources situation (Number of new donors and volunteers). So it can be concluded that promotion could help organizations to gain visibility in key stakeholders groups (particularly donors, volunteers and, indirectly, public), make them understand the importance of their work and, therefore, improve key performances.

Summary of significant differences among groups, based on marketing activities usage in everyday work, in achieving overall performance is shown in Table 19.

Table 19: Summarized results for significant differences between groups

Performance indicator	analysis	planning	Mission vision stakeholders	segmentation	product	price	distribution	promotion
Total revenues					.009	.001	.030	.028
Total income from donations	.028		.030	.025	.003		.002	.007
Total expenditure				.012	.029		*.065*	*.071*
Total administrative costs				.049	.019	.024		
Nonfinancial asset	*.097*		.002	.023	.024		.042	
Number of new donors			*.097*		*.059*			.038
Number of employees	.036		.032	.007	*.071*	.017		
Number of volunteers					.006	.009	.041	.017
Number of beneficiaries								

Source: empirical research

In addition to marketing strategy elements implementation, additional questions regarding attitude toward marketing strategy determinants and resources sufficiency were included in the questionnaire. The respondents had to evaluate importance on a 5-point Likert scale, where 1 was totally unimportant and 5 was totally important and resources sufficiency on a scale from 1 – totally insufficient to 5 – totally sufficient. The results are shown in Table 20.

Table 20: Attitude toward marketing strategy determinants and resources sufficiency

Marketing strategy determinants/resources sufficiency	N	Mean	St. Dev
Planning is essential for success	**65**	**4.58**	**.583**
Mission drift activities could jeopardize our primary purpose	*65*	*3.03*	*1.153*
Employees and volunteers involvement in new offerings creation	65	*2.05*	1.217
Donors are well informed about our activities	**65**	**4.12**	**1.068**
Our field of activities is popular in public	65	3.62	.995
We have a sufficient number of employees for all activities	*65*	*2.60*	*1.445*
We have a sufficient number of volunteers for all activities	65	3.22	1.139
We have a good relationship with the media	**65**	**4.28**	**.839**

Source: empirical research

The data showed some interesting results. Organizations are partially aware of marketing strategy importance. For example, the highest mean is for planning is essential for success (4.58), followed with the awareness of good relationship with media importance (4.32) and necessity of keeping donors informed (4.12) which are the areas that nonprofit organizations often recognize as most important. Simultaneously, organizations do not fully recognize the negative impact of mission drift on organization core values and overall performance (3.03) and do not recognize at all importance to implement internal marketing activities in the organization in order to keep human resources proactive and attached to organizational goals fulfillment (2.05.). Additionally, organizations are expressing lack of employees (2.60) and possibly volunteers (3.22).

5. Conclusion

According to results of the empirical research, some interesting findings were shown. All organizations estimate their performance measures to be fulfilled below the plan, except for the number of volunteers and beneficiaries. Nonprofit organizations that are implementing analysis as an integral part of their work are performing better in total income from donations and the number of employees. Regarding planning, there is no significant difference in performance. All organizations declared that they are at least partially aligning their mission and goals to

multiple stakeholders, but the organizations that are completely implementing this activity are performing better in total income from donations, nonfinancial asset and the number of employees. On contrary, segmentation as a process to manage key stakeholder groups more easily is not recognized enough in nonprofit organizations. There is only a minority of organizations in the sample that are fully implementing this activity. Consequently, they are performing better in more than half of performance measures. Surprisingly, there is a difference in performance measures based on implementation of product (or service) determinants in everyday activities –every organization has something to offer to their beneficiaries, and the majority of organizations are implementing basic determinants of product shaping. Accordingly, they are performing better in total revenues, total income from donations, total expenditure and total administrative costs. According to previous studies, organizations' resistance to implement business-like activities in, at least, price calculation if not in charging, is shown in this research as well. The majority of organizations are not calculating prices and performing worse than those who are implementing this activity. Differences are shown in total revenues, total administrative costs, number of employees and volunteers. At the same time, organizations are well aware that their offerings should be adjusted to beneficiaries needs, organizations which are fully implementing this activity are performing better in total revenues, total income from donations, nonfinancial asset and number of volunteers. For promotion activity, which is recognized as one of the most important to nonprofit organizations in literature, the majority of organizations are using it only partially. Still, there is only a small number of organizations that are not using it and, consequently, they are performing worst. Organizations that are fully implementing promotion elements in their work are performing the best and this difference is significant for total revenues, total income from donations, number of new donors and volunteers. This is expected as marketing communication through promotion channels should be aligned to all key stakeholders and its impact is particularly visible in performances related to new sources of financing and human resources. Results of empirical research suggest that marketing strategy has an important role in nonprofit organizations' overall performance, although findings are inconsistent. The reasons for inconsistency could be in research limitation: a small sample of nonprofit organizations from Croatia, unequal distribution of organizations based on their primary field of activities and a small number of employees and volunteers in organizations implicating their amateurism. Since the sample is not representative results and conclusions should be taken into consideration solely at an indicative level. In future studies, bigger (professional) nonprofit organizations from different countries should be included to confirm the real role of marketing strategy in overall performance. Additionally, it could be useful to include representatives of beneficiaries, employees, volunteers and donors in research to get their assessment of marketing activities implementation within organizations.

To summarize, there are fewer differences in overall performances for those marketing activities that organizations are familiar with and are dealing with them intuitively. For example, analysis is something that organizations do even without thinking of it, as it will help them to understand what they want to do and to whom they want to do it. Without it, there is no reason to even establish a nonprofit organization. Secondly, all organizations consider planning as common practice so its impact on overall performance is rather small. On the other hand, all other activities, particularly segmentation and product shaping are implemented on a declarative level, without fully understanding the impact on overall performance. The reasons for this approach lies in previously mentioned reluctance to business-like practices, lack of time, human and financial resources, although they show at least partial awareness of marketing strategy element usefulness. Nonprofit organizations are highly aware of planning importance, communication with donors and media, and almost completely ignore the importance of

internal marketing activities within an organization in order to shape offering that is completely adjusted to the needs of multiple stakeholders. In this way, there is no safe way forward as, soon or later, nonprofit organizations will face sustainability problems and will have to decide which path to follow: success or failure.

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THE EFFECTS OF MOTHERHOOD ON WOMEN CAREER PATH: FEMALE PERSPECTIVE

ABSTRACT

Around the world, the participation of women in the labor markets has increased in the last decades. Nevertheless, the employment rate for women is still lower than men's, and one of the reasons for the lower participation of women in the labour market could be motherhood. This paper examines women's perceptions of the effects of motherhood on women careers and employment status. Empirical research was conducted among 241 women in Croatia, including 136 mothers and 105 women with no children. Research results indicate that mothers and women that are not mothers generally have similar expectations about raising children and building career. About 1 out of 5 mothers have experienced some workplace discrimination due to motherhood, including lower salaries, getting passed over for a promotion or being considered as a less committed employee. Although research results confirm the detrimental effects of motherhood for some mothers, most mothers consider that building career would not be much easier without children.

***Keywords**: motherhood, career path, compensation.*

1. Introduction

Female participation in the labour market has radically increased during the 20th century and created one of the most transformative economic and social developments of the century. The traditional male breadwinner and housewife role for women converged across all advanced countries. Such growth in employment rates for women was accompanied by increased women's education levels and qualifications. For example, some recent data for the European Union indicates that in 2016 some 44% of women (aged 30-34) had tertiary education or higher, compared to 34% of men (European Commission, 2017). Although one could expect that highly educated women are generally more inclined to have some employment and pursue careers, in the European union employment rates of women are still lower than those for men; in 2016 in the EU the employment rate of 20-64 years old women was 65.3%, whereas in the same age group for men the employment rate was 76.8% (European commission, 2017). Significant variations are found across countries, as for example in Greece, Italy, Malta, Croatia, Spain and Romania, the employment rate of women was even below 60%.

The level of women's participation in the labor market is determined by numerous factors. These include the level of the country's economic growth, societal social norms, education levels, fertility rates, access to childcare and other supportive services, etc. (Verick, 2018).

There is theoretical evidence that female labour supply and position in the labour market can be impacted also by motherhood (Gutiérrez-Domènech, 2003; Gatrell, 2011). The impact of parenthood can be supported with data on the employment rate of women with children under the age of 6. In the EU the employment rate for women in this category is on average more than 8 percentage points lower than the employment rate of childless women (European commission, 2017). Several work-family reconciliation policies and legislations have been developed in order to support working mothers and prevent their penalization in the workplace (in terms of employment and earning). Most commonly these policies include parental and family leave, subsidized childcare, and flexible work-time policies. Unfortunately, although Esping-Andersen & Billari (2015) showed that the institutional environment has a favorable impact on gender egalitarianism and the gender wage gap, equal opportunities policies and everyday management practices that mothers face in real life are often in disparity (Gatrell, 2011). This paper is therefore concerned with examining the real repercussions of motherhood on women employment opportunities, career progression and career outcomes. The objective of this paper is to examine the differences in various career options for mothers and women with no children. With this purpose, this study has two research objectives: (1) identifying female perspective on the impact of motherhood on building careers, and specifically, (2) mother's opinion on the impact of motherhood on women career. In order to regain some empirical evidence on the topic, primary research was conducted among employed women in Croatia. Both working mothers and women with no children were asked to report their perceptions on the impacts of motherhood on their careers.

2. Literature review

2.1. Legal protection of maternity and employed mothers

Due to the difficult position in history, in order for women to become equal in society, it was necessary to change the general view on the role of women in society, but also to legally protect mothers. Gender inequality is prohibited by the Gender Equality Act dating back to 1964, but this did not mean an automatic change in the consciousness of people who define the attitude towards women in society (Leinert Novosel, 2004). European commission recognized the importance of protecting pregnant women in 1992 when it enforced Council Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding. The Directive was later modified in 2007 and 2014. The Directive in article 2 defines that (a) pregnant worker shall mean a pregnant worker who informs her employer of her condition, in accordance with national legislation and/or national practice; (b) worker who has recently given birth shall mean a worker who has recently given birth within the meaning of national legislation and/or national practice and who informs her employer of her condition, in accordance with that legislation and/or practice; (c) worker who is breastfeeding shall mean a worker who is breastfeeding within the meaning of national legislation and/or national practice and who informs her employer of her condition, in accordance with that legislation and/or practice. According to Directive 92/85/EC (European Commission, 1992), these groups are specific at risk groups that need additional protection. Such additional protection means protection against exposure to processes or working conditions that may endanger the health of the mother or child (e.g. hazardous substances, shocks, vibrations, handling heavy loads, radiation, extreme cold or heat, etc.). Additionally, provision should be made for pregnant workers, workers who have recently given birth or workers who are breastfeeding not to be required to work at night. Women should be granted the right to maternity leave of at least 14 continuous weeks, and time off without loss of pay in order to attend ante-natal examinations.

The dismissal of workers should be prohibited during the period from the beginning of their pregnancy to the end of the maternity leave. Further documents of the European Commission on that topic include Communication from the Commission on the guidelines on the assessment of the chemical, physical and biological agents and industrial processes considered hazardous for the safety or health of pregnant workers and workers who have recently given birth or are breastfeeding, COM/2000/0466.

The foundation of maternity protection in Croatia was created by the Constitution. Albeit, in addition to the Constitution, the legal regulation of maternity protection is regulated by the provisions of the Labour Law. As a part of the Labour Law, several provisions regulate motherhood, including jobs which women should not perform, prohibition of unequal treatment of expectant mothers („The employer shall not refuse to employ a women because she is pregnant, and shall not terminate her contract of employment or transfer her to other jobs"), maternity leave, shortened working hours for parents, allowed break for child nursing, compensation during maternity leave, prohibition of dismissal or the right to return to previous or appropriate work after the termination of maternity leave (Official Gazette, 93/14, 127/17, 98/19). Additionally, mothers are protected by the provisions of the Occupational Health and Safety Act, the Health Insurance Act, the Anti-Discrimination Act, the Gender Equality Act and, most importantly, the Law on Maternity and Parental Benefits (Official gazette, 37/20). Although Croatia has several laws to protect women and working mothers there can still be found discrimination of women during job interviews, unequal distribution of work at home and family between women and men and various obstacles for to employment of women, retention or promotion.

2.2. Motherhood, work-life balance and career path

The main problem of the contemporary policies promoting women's rights is how to enable women to reconcile work and family life. It became a great challenge for the working women to juggle between work and family. They are not only exposed to some stereotypes of not being ideal at work due to family committments (e.g. see Hampson, 2018), but they are also exposed to the pressure because of multiple roles. Women have to combine paid and unpaid work which leads to an additional burden on women (Ciciolla & Luthar, 2019). However, there are a number of measures that could help to minimize this problem. Some of these measures are maternity leave, flexible or shorter working hours, job-sharing and different forms of care for children (Leinert Novosel, 2004). The work-life balance is hard to define and many simply define this concept as harmony between private and business life. Gryzwacz & Carlson (2007) define work-life balance as "a completion of role-related expectations that are negotiated and shared between individuals and their role related partners in their work and families". Three components are important when it comes to work-life balance (Greenhaus et al., 2003.): (1) time balance, implies on equal amount of time spent on work and family roles; (2) involvement balance, the level of pychological involvement in both roles and (3) satisfaction balance, satisfaction with all given roles. An equal level of commitment to private and business roles reduces conflicts both at work and in the family. A mother who is equally engaged in both roles does not allow that one role causes problems in the other role. This can be achieved by creating a daily routine and thus trying to avoid unexpected situations. Therefore, balance prevents conflicts and stress (Marks & MacDermid, 1996.). Since they have become a part of the workforce, women are faced with this problem how to raise their children but also have a job that requires time and dedication. Many mothers struggle with finding the best way to balance these two roles and often are confronted with pressure that comes from husband, family or friends (Kumar, 2020.).

Due to the additional role that women have been given, many employers are trying to help mothers to maintain a balance between private and business life. Therefore, employers allow mothers flexible and shorter working hours, job-sharing, tele-working, childcare services and special maternity leave arrangements (Straub, 2007.). Research indicates that mother-friendly firms experience better financial performance (Blazovich, Smith & Smith, 2018). Support at work and in the family is considered a potential mechanism that reduces conflict between family and work. For example, a good manager should not set requirements that demands from a female employee to work overtime. Likewise, a partner or other family members can provide direct help with household, thus reducing the likelihood that the mother is preoccupied with these problems at work (Bernas and Major, 2000). Work-life balance problems can be serious and they need to be addressed on (Delina and Raya, 2013).

After becoming mothers, women often face various changes and challenges in their personal and professional lives. For example, one of the direct consequences of motherhood are career breaks. Career breaks as such can have direct impact on career progression, especially if longer than two years (Davey at al., 2005). In addition, raising children requires extra effort and mothers, in addition to going to work, must take on a number of responsibilities in private life (e.g. take children to school / kindergarten, taking care of children during periods of absence from educational institutions due to children's illness, etc.), which can affect their productivity at work. For many women motherhood causes conflicting work and family roles and has severe impact on their workplace and career path (Brown, 2010).

The impact of motherhood on career has been proven by numerous researches. Although a large majority of women express a clear preference for combining employment and economic autonomy with motherhood and family (Esping-Andersen & Billari (2015), in reality things often greatly differ. Motherhood strongly decreases the odds of women's full-time employment (Misra, Budig, & Moller, 2007). It has been proven by Correll, Benard & Paik (2007) that, when compared to non-mothers, during the selection processes employers are less likely to call back for interviews women that are mothers. Still, enforced legislation does protect mothers, so for example, Gutiérrez-Domènech (2003) found that maternity leave does not significantly impact on post-birth employment.

Women are often accused to exert less effort in their jobs after having children, which can be caused by the fact that mothers are most often the primary caregivers during child rearing (Sayer et al. 2004). Some mothers leave the labour market voluntarily due to increased family responsibilities. The predicted probability of leaving the labour market upon motherhood can depend upon completed female tertiary education, the separate taxation system and the proportion of part-time contracts available in the country (Gutiérrez-Domènech, 2003).

Empirical evidence indicates that a women's career progression is reduced incrementally as she has more children (McIntosh et al., 2012). Furthermore, the degree of women's career progression is directly related to the school age of the dependent children: the younger the child the greater the detrimental impact on mother's advancement and career (McIntosh et al., 2012; Zhao, 2018).

Mothers' full-time average earnings vary substantially cross-nationally, but earnings is another career aspect that can be strongly impacted by motherhood. Average wages of mothers are generally lower than childless women's average earnings (Misra, Budig, & Moller, 2007). Women experience reduced earnings around the time of first birth, as mothers may reduce their hours in the labor market (Staff & Mortimer, 2012) and invest less in skill development. From

the demand side, employers may offer mothers fewer training and advancement opportunities (Miller, 2011). On average, based on US data on women's earnings, Staff & Mortimer (2012) argue that the hourly wages of mothers are approximately 5% lower (per child) than the wages of nonmothers.

Miller (2011) found a positive career impact from motherhood delay. As argued, motherhood delay during twenties and early thirties leads to an increase in earnings of 9% per year of delay, higher wage rates and more hours worked. According to the same research, this effect will be greatest among women with college degrees and in professional and managerial occupations as they will receive the greatest career returns to delay. Miller (2011) argues that a 1-year delay would increase the average career wage rate by about 2.5%.

2.3. Impact of motherhood on the career of women in Croatia

Gender discrimination is often found in the labour market and mothers in Croatia are no exception. Already at the job interview-phase, employers often enquire about women marital status, possible pregnancies, and then the discrimination continues through lower salaries for women and firing women in cases of sick leave due to a child's illness or pregnancy (Genov et al., 2001). The majority of unemployed persons in Croatia are women, which is a trend that has been increasing in recent years. Although there are no major differences between men and women in the level of education, statistics show that women find it very difficult to get jobs where there is a lot of male competition (Galić and Nikodem, 2009). Interestingly, despite this statistics, empirical research conducted by Pološki Vokić, Sinčić Ćorić & Obadić (2019) found that women in Croatia did not have negative gender related experiences.
Empirical evidence indicates that women are paid less than men in almost all industry sectors in Croatia. Women earn less because the market has historically treated them as temporary and additional workers and their work has been devalued (Galić, 2011). Furthermore, women's work in Croatia was often considered as an extra income while men's salary was the main source of funding for the family. Women were traditionally treated as responsible for the household, care and upbringing of children, as well as the care of elderly family members (Topolčić, 2001).
The pay gap between women and men increases when women get pregnant and become mothers. When women return to work, they often get a lower-paid or less responsible job. The progress in their careers is slower and ultimately have lower pensions. Women are generally located at lower levels of organizational structures, social power and decision-making (Galić and Nikodem, 2009). Pološki Vokić, Sinčić Ćorić & Obadić (2019) found that the more children women have, the negative impact of different personal and organizational factors on women career will increase. Although some institutional, constitutional and legal changes have been adopted in Croatia (e.g. Law on Gender Equality, Labor Law, Family Law, etc.), gender inequality in the labor market has not significantly improved. Not all preconditions for reducing women's unemployment and eliminating all forms of discrimination against women in the labor market have not been realized (Galić and Nikodem, 2009).

3. Methodology of research

In order to examine the effects of motherhood on female career, the population for this research were employed women, including both mothers and women that are not mothers. The questionnaire with several close-ended questions was distributed online, through non-probability snowball sampling, to population members who were conveniently available to participate in the study as members of authors' social networks. The survey included two parts: (1) general female perceptions about the impact of motherhood on career and (2) several

questions about mother's perceptions of employment treatment during pregnancy or motherhood. Most questions required level of agreement with 5-point Likert-type scale answers (1-strongly disagree to 5-strongly agree). The research was conducted from July-September 2020.

The research was conducted on a sample of 241 female respondents, of which 105 respondents are women who are not mothers (43.6%), and 136 respondents are mothers (56.4%). Among mothers, most of them have 2 children (45.9%) or one child (42.1%), with smallest percentage of mothers with 3 or more children (12%). Profile of respondents is shown in Table 1.

Table 1: Demographic profile of respondents

	Group	Mothers	Women without children
Age	<25	3.68%	21.91%
	25-29	14.71%	63.81%
	30-39	41.91%	12.38%
	40-49	35.29%	1.90%
	≥50	4.41%	0.00%
Hierarchical position	Operational level	58.33%	66.34%
	Lower management	12.88%	12.87%
	Middle management	21.97%	17.82%
	Senior management	6.82%	2.97%
Education level	High school	33.09%	23.81%
	Bachelor degree	12.50%	25.72%
	Master degree	47.06%	43.81%
	Master of science or equivalent and higher	7.35%	6.66%
Pay range	3.500.00 - 4.500.00	11.11%	21.15%
	4.501.00 - 6.000.00	23.70%	29.81%
	6.001.00 - 7.500.00	28.15%	25.96%
	7.501.00 - 10.000.00	25.19%	17.31%
	>10.000.00	11.85%	5.77%

Source: Authors

According to the above data, it can be seen that women that do not have children mostly belong to age group 25-29 years (63.81%), whereas mothers mostly belong to the age group 30-39 years (41.91%). Among both groups, most women are operational-level employees, mostly with master degree. When it comes to pay, higher percentage of mothers belong to higher pay grades, but this is most likely due to the fact that mothers are on average older, with more work experience, and with higher percentages of these women occupying managerial positions (when compared to women that are not mothers).

4. Research findings

The first part of this research examined general female perspective on motherhood. Both mothers and women who do not have children were asked to report their opinion about different career issues and motherhood.

Among women, it is generally accepted that it is possible to be successful at work and raise children at the same time. Mothers and women that do not have children have almost identical opinion on this issue. Opinion about employer support to working mothers differs between mothers and women that do not have children, as those women that are not mothers more often find that employers support working mothers (61.9% and 54.4% respectively). Same difference, although slightly smaller, is found with colleague support to working mothers, as more women who are not mothers find that working mothers receive respect and support from colleagues. The opinion about prioritizing business objectives in order to fulfil business plans is very similar between mothers and women that do not have children, just like the opinion on possibility to maintain work-life balance. Mann-Whitney U test did not detect statistically significant differences between mothers and women that are not mothers in their opinion about career issues.

Table 2: Female perspective on raising children and building careers

Statement	Response	Total sample	Mothers	Women without children	Mann-Whitney U test statistics
It is possible to be successful at work and raise children	Yes	61.83%	61.76%	61.90%	M-W* U=6853.500 Z=-.554 p=.579
	No	17.01%	16.18%	18.10%	
	Undecided	21.16%	22.06%	20.00%	
My employer supports working mothers	Yes	57.67%	54.41%	61.90%	M-W* U=6799.500 Z=-.666 p=.506
	No	20.75%	19.12%	22.86%	
	Undecided	21.58%	26.47%	15.24%	
The people I work with respect the working mothers	Yes	62.24%	60.30%	64.76%	M-W* U=7047.000 Z=-.179 p=.858
	No	21.99%	21.32%	22.86%	
	Undecided	15.77%	18.38%	12.38%	
Business must come first if I want to fulfill my business plans	Yes	29.46%	30.15%	28.57%	M-W* U=6919.000 Z=-.426 p=.670
	No	32.37%	30.15%	35.24%	
	Undecided	38.17%	39.70%	36.19%	
I manage to maintain a balance between private and business life	Yes	53.53%	52.94%	54.28%	M-W* U=6856.000 Z=-.550 p=.582
	No	18.26%	17.65%	19.05%	
	Undecided	28.21%	29.41%	26.67%	
My partner supports my career	Yes	68.88%	69.85%	67.62%	M-W* U=7132.000 Z=-.015 p=.988
	No	16.60%	16.91%	16.19%	
	Undecided	14.52%	13.24%	16.19%	

*M-W= Mann-Whitney
Source: Authors

Second part of this research was limited only to working mothers (n=136). Mothers' opinions on several impacts of motherhood were examined in this round. In general, as shown in Table 3, some working mothers experienced discrimination and career obstacles due to motherhood, but the majority of mothers did not have such problems. About 15% of mothers (15.4%) have

been permanently replaced from their position by someone else due to maternity leave. Some mothers (11%) have been encouraged to return from maternity leave sooner than legally required.

When it comes to pay and career progression, motherhood affected approximately 1/5 examined mothers. Some 21% of examined mothers reported that they have not received a bonus or received a lower pay or bonus compared to colleagues or were not considered for promotion because of using maternity leave.

Table 3: Mother's opinion on the impact of motherhood on career

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
After taking your maternity leave, you have been permanently replaced from your position by someone else.	53,7	16,2	14,7	6,6	8,8
Your employer has encouraged you to return from maternity leave sooner.	58,8	18,4	11,8	5,9	5,1
You have not received a bonus or you have received a lower salary or bonus compared to your colleagues.	50,0	19,1	9,6	10,3	11,0
You were not considered for promotion because you used maternity leave.	47,1	16,2	15,4	6,6	14,7
After returning from maternity leave, you were seen as a less committed employee.	42,6	20,6	16,9	9,6	10,3
You have been unfairly criticized for your work efficiency.	46,3	19,9	16,2	10,3	7,4
You have received inappropriate comments from colleagues or superiors for taking sick leave to care for a child.	42,6	16,9	17,6	11,0	11,8
You received a negative comment due to part-time or flexible working hours.	44,1	19,9	22,1	6,6	7,4
Your contract has not been extended.	64,0	18,4	5,1	4,4	8,1
You have been fired.	71,3	14,0	3,7	2,9	8,1

Source: Authors

Working mothers sometimes feel lack of support from their colleagues. For example, 20.9% of examined mothers reported that after returning from maternity leave, they were seen as a less committed employees, 17.7% of mothers believe that they have been unfairly criticized for their work efficiency and another 22.8% of mothers have received inappropriate comments from colleagues or superiors for taking sick leave to care for sick children. Some mothers have received a negative comment due to part-time or flexible working hours (14%). Ultimately, contrary to prescribed legal protection, for some mothers (12.5%) labour contract was not extended, or in most extreme cases, have been fired (11%).

Table 4: General female opinion on motherhood

		Women without children	Mothers	Total	Pearson Chi-Square= 21.011 p=0.000
Considered postponing motherhood because of career	NO	52.4%	80.1%	68,0%	
	YES	47.6%	19.9%	32,0%	
Total		100,0%	100.0%	100.0%	
		Women without children	Mothers	Total	Pearson Chi-Square= 6.259 p=0.009
Do you find it easier to build a career without children?	YES	14.4%	27.9%	22.1%	
	NO	85.6%	72.1%	77.9%	
Total		100.0%	100.0%	100.0%	

Source: Authors

Table 4 shows that when it comes to general opinion on motherhood, women that are mother and those that are not, have different opinion about timing of motherhood. As can be seen from the table, mothers usually did not consider postponing motherhood because of career (80.1%). Among those women that are not mothers 47.6% of mothers consider postponing motherhood because of career. Furthermore, there is statistically significant difference in considerations to postpone motherhood between mothers and women that are not mothers ($p < 0.01$).

Mothers and women that are not mothers also differ in their opinion weather it is easier to build career without children. Women in Croatia generally find that it is easier to build a career without children (77.9% of examined women), although some differences can be seen between mothers and women that are not mothers. Women that are not mothers more often believe that it is easier to build a career without children and chi-square test indicates that the difference in opinions is statistically significant ($p < 0.01$).

5. Discussion and conclusions

Women's deteriorating position in the labor market has been documented in the recent literature. However, in order to test weather this is just a myth or evidence based, the idea of this paper was to systematically examine women perceptions on the effects of motherhood on employment and career. For that purpose, a primary research was conducted among 241 women in Croatia. The first finding of this research is generally supportive of motherhood, as most examined women believe that it is possible to be successful at work and raise children at the same time. Such positive attitude to motherhood might indicate that examined women did not experienced, or in the case of childless women, witnessed negative consequences of motherhood. Women's perceptions about employer and colleague support to working mothers are also very similar between mothers and childless women. Taken altogether, about 2 out of 3 women in Croatia have a generally positive attitude associated to the role of working mothers. Furthermore, there are no statistically significant differences between mothers and women that do not have children.

Considering some documented negative effects of motherhood, working mothers were asked to rate the perceived effects of motherhood on their career. It must be emphasized that legislative frame protects working mothers but in reality, they can still feel some forms of discrimination. For example, post-maternity employment is mostly protected by law, but 15.4% of examined

mothers in Croatia have been permanently replaced form their position due to maternity, for 12.5% of examined mothers their contract was not prolonged and 11% were fired due to maternity. Previous empirical research shows that maternity leave does not significantly impact on post-birth employment (Gutiérrez-Domènech, 2003) so such finding might be specific for the Croatian labor market and might indicate that it is necessary to further protect women return to their job positions after they give birth.

An especially relevant field of interest is the impact of motherhood on wages. Previous research indicates that mothers receive lower average compensation than non-mothers (Misra, Budig & Moller, 2007; Miller, 2011; Staff & Mortimer, 2012). About 21.3% mothers examined with this research confirm such statistics. In other words, 1 in every 5 mothers received lower compensation due to motherhood, but the majority of examined mothers did not report any consequential effect of motherhood on their compensation levels. Clearly this is not large-scale problem in Croatia, possibly due to many collective labor agreements that base the pay on the job and not on the person performing the job and thus protect mothers even in case of career breaks due to maternity leave.

Some researchers find that motherhood impacts the level of effort and job performance (Sayer et al. 2004). Women can be accused to exert less effort in their jobs after having children, which is reported by 20% of examined mothers in Croatia. The percentage of mothers that have been unfairly criticized for their work efficiency, have received inappropriate comments from colleagues or superiors for taking sick leave to care for a child or were not considered for promotion because of maternity leave is around 20 % in the current research, confirming that 1 in 5 mothers has some negative experience due to motherhood.

Many women face the dilemma weather to postpone motherhood until they fulfill some career objectives. In fact, it has been proven that postponing motherhood can have beneficial effects on mother's earning potential (Miller, 2011). The research confirmed statistically significant difference between mothers and childless women when it comes to postponing motherhood because of career. Among mothers, only 20% of examined mothers considered postponing career, unlike among the group of women that do not have children where almost half of them have considered postponing motherhood because of career (47.6%).

Interestingly, mothers in Croatia do not find that motherhood is a great obstacle for their careers. Although some mothers did experience negative effects of motherhood which is consistent with research finding by Pološki Vokić, Sinčić Ćorić & Obadić (2019), when asked if building career without children would be easier the majority of women disagreed, both mothers and women with no children. All these findings indicate that taken altogether, working mothers in Croatia in most cases have the same position as women with no children and do not experience "motherhood penalty". This might be the result of specific laws and policies regarding mother's legal protection and rights enforced on EU level and especially by national laws in Croatia.

All reported research findings can also be subject to some study limitations. Results are self-reported, so subject to socially desirable responding. The sample was not tested for representativeness of the whole population. Mothers that participated in this study are older and occupying higher hierarchical positions than women with no children so stable careers and the fact that their children are already older could have possibly impacted their perceptions about the impacts of motherhood on career. It is suggested that for future researches age of children is taken into consideration as a control variable.

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PERSPECTIVES OF THE INFORMATION TECHNOLOGY USE IN ACCOUNTING - IMPLICATIONS OF THE COVID-19 PANDEMIC

ABSTRACT

The continuous development of information technology and its application in accounting has provided new opportunities but also numerous challenges for accounting practice. It is possible to identify a wide variety of information technologies that have had a significant impact on accounting in the 21st century but also certain constraints that have slowed the integration of information technology into accounting. The COVID-19 pandemic dictates new business conditions and models that create numerous changes in business operations where the use of information technology has become extremely important for the survival of businesses. The changed conditions did not bypass the accounting profession either which also had to adapt to the new circumstances. This paper aims to analyze whether the COVID-19 pandemic has accelerated the integration of information technology into accounting and the transition to 'Accounting 4.0'. Also, the paper reviews recent studies and analyzes challenges that accountants faced in a pandemic and the ways they have adapted to the changing environment. In this context, the paper analyzes various types of information technology that enabled accountants to become more efficient and effective with special emphasis on Cloud-based technology, Blockchain, and Artificial Intelligence. The paper also identifies the advantages and risks of information technology integration in accounting and future directions of integration. The fast development of information technologies creates a continuous need for accountants to acquire knowledge and skills related to new technologies. Therefore, skills that are expected of accountants concerning information technology are also highlighted in the paper. The current pandemic has had a severe impact on business operations and demonstrated the benefits of using information technology but not without certain risks. In this context, the implications for accounting and the accounting profession have also been investigated.

Keywords: *Technology, the Accounting profession, IT skills, COVID-19.*

1. Introduction

Last year was marked by the COVID-19 pandemic but also the period in which great changes altered not just businesses but also society as a whole. The COVID-19 pandemic created new

business and work models that generated numerous changes in business operations emphasizing the importance of information technology integration into business processes and operations to adapt and survive. Often described as "10 years of acceleration crammed into a single year" and a "hothouse for technology" 2020 was rather specific regarding the use of information technologies and most technologies that were considered emerging were "super-accelerated" in the pandemic when everything changed and the business has gone remote (Arrowsmith, 2020, 30). Those conditions did not bypass the accounting profession either which also had to adapt to the new circumstances and the accounting profession found itself in the position of "sink or swim" (The Confederation of Asian and Pacific Accountants (CAPA), 2020, 6).

It is important to point out that information technology has been integrated into accounting for a long time. Knudsen (2020, 2) identifies three phases of technological advancements that had a great impact on the integration of information technology. The first phase was identified during the 1960s and 1970s with the emergence of computerized information systems that enabled accountants the opportunity to provide more detailed data recording and accurate analyses. The use of information technology was intended to automate basic processes such as data entry and sorting (Damasiotis et al., 2015, 538). The second phase followed in the late 1990s and early 2000s with the "advancement of the World Wide Web and Integrated Information systems (IIS)" and enterprise resource planning (ERP) systems "was one of the hottest topics in IT" (Knudsen 2020, 2). The further development of information technologies, especially in the last three decades, has had a greater significance for the accounting profession (Belfo and Trigo, 2013). E-commerce and the use of the Internet in business have facilitated the exchange of goods and services, but have created new challenges for professional accountants in recording and auditing business transactions (Doost et al., 2011, 62). Information related to business events nowadays is mostly in electronic form, which has also influenced changes in accounting (Klovienė and Gimzauskiene, 2015, 1708). Digitalization is the third phase of technological advancements with a great impact on the integration of information technology in business and it is currently evolving (Knudsen, 2020, 2). It is also important to point out that there is no unique consensus regarding the understanding of the terms digitization, digitalization, and digital transformation (Knudsen, 2020, 2; Leitner-Hanetseder, 2021, 541), and they are almost interchangeably used. Moreover, Knudsen (2020, 2) finds digitalization "somewhere between digitization and digital transformation" since "it involves more than a mere technical process (e.g., digitization), but it does not necessarily entail a reconfiguration of strategy or profound changes in the conduct of business (e.g., digital transformation)".

Currently, one of the most significant academic research topics and professional accounting associations discussion is focused on the implications of COVID-19 on the further integration of information technology into accounting. In the past thirty years, there have been increasingly rapid advances regarding the use of information technology in accounting and the COVID-19 pandemic only emphasized the importance of information technology since remote work became reality for most people.

Information technology served as a bridge that made it possible to face new circumstances. The practice has shown that there is no unique solution or 'one-size-fits-all solution' and that accounting firms with a higher rate of IT integration coped better with the conditions in the pandemic while others, mostly small and medium-sized accounting firms had more significant risks in terms of security such as risk of cyberattacks, data theft, malware and ransomware, phishing schemes (Wilkins, 2020). Accountants have been able to respond to the increased workload due to new client requirements with the application of the information technology which was identified as one of the 'key drivers of change' for the accounting profession even

before the pandemic. However, it is important to analyze whether new circumstances that emerged in pandemic have accelerated the integration of information technology into accounting and the transition to 'Accounting 4.0', which refers to "the transformation of the accounting process through digitalization and application of new tools of Industry 4.0" (Aslanertik and Yardımcı, 2019, 549).

This paper is motivated by the need to more thoroughly analyze the implications of the COVID-19 pandemic on accounting regarding the use of information technologies in accounting. The objective of this paper is to analyze recent studies and reports regarding challenges that accountants faced in a pandemic and the ways they have adapted to the changing environment. In this context, the paper provides analyses of information technologies that enabled accountants to become more efficient and effective with special emphasis on Cloud-based technology, Artificial Intelligence (AI), and Blockchain. Also, the paper analyses whether the COVID-19 pandemic accelerated integration and had an impact on the future perspectives of IT integration into accounting. This paper also identifies the benefits of information technology integration in accounting, skills that are expected of accountants concerning information technology, and sheds light on possible areas of future information technology integration into accounting as well as challenges of that integration.

2. COVID-19 implications on the accounting profession

As mentioned, digitalization was one of the hot topics in the accounting field even before the pandemic. There were many changes identified for the accounting profession and they were fostered by information technology. International Accounting Education Standards Board (IAESB, 2018, 5-7) in reviewing information and communication technologies (ICT) that had a significant impact on the accounting profession in the last decade of the "digital age" (from 2010 till 2018), singled out the "FinTech" industry, i.e. the financial sector that significantly uses innovative technology in providing its services, Big Data, Data Analytics, Cryptocurrency Bitcoin and supporting Blockchain technology, Cloud computing, eXtensible business reporting language (XBRL), mobile technology, AI and drones, new software and social media. Similar results were obtained by Chiu et al. (2019, 34) by analyzing the discussion of scientific papers published in the most prominent scientific journals in the field of accounting information systems in the period from 2004 to 2016. According to their analysis, many different technologies have emerged, but also many are continuing to develop, and it is believed that the benefits of such technologies have not yet been maximized. The most commonly researched technology (in 26% of the articles) is XBRL (including continuous, online, digital, and e-reporting), followed by AI (present in 20% of the articles) following by "Big data" and "Data analytics" (in 13% of the articles), various Internet technologies (in 8% of the articles) and "Cloud computing" (in 3% of the articles).

In November 2019, just before the pandemic broke out the Association of Chartered Certified Accountants (ACCA, 2020, 23) conducted global research of 4,264 accountancy and finance professionals worldwide. According to the results of the survey, accountancy and finance professionals were "more comfortable" with the technologies such as ERP applications and spreadsheets, and "less comfortable" with more "emergent technologies (EmTech)" like AI and machine learning (ML). Although the use of technologies like spreadsheet and ERP has enabled many advantages they also have many limitations and it is believed that "newer technologies facilitate the finance professional in becoming more forward-thinking and analytical in their insights" (ACCA, 2020, 23-24). This is by the research conducted by Schmidt et al. (2020, 165) that also identified the "resistance to data analytics technology by accounting and finance

professionals - resist adopting new analytics technology". Similarly, Sage UK (2020) researched in late 2019 of 3,298 accountants across the globe which revealed how "clients increasingly expect business and strategy advice that is far beyond the usual core remit of accountancy and bookkeeping services" but also that "accountants were responding to that need and 54% of them "with a faster service thanks to technology" (p. 30). But research also identified that many respondents believed how the adoption of information technology is too slow, and 68% of them stated that "accountancy firms in their country need to increase the pace of technology adoption" (p. 21).

The accounting profession has faced changes even before the pandemic, so it is logical to expect that the pandemic had an additional impact on these changes and accelerated them. Borrego et al. (2020, 1) point out two main objectives of adaptation to pandemic COVID 19: minimization of economic damage as well as saving jobs, and those were accomplished through "taking advantage of new technologies to assist companies'". According to the ACCA and EY (2020, 33-35) report based on a global survey (North America, Middle East, Asia Pacific, Central & Eastern Europe, South Asia, Western Europe, Africa, Caribbean, Central, and South America) of 4,281 respondents, conducted during early months of a pandemic (April–May 2020), remote working was identified as one of the most significant change. According to the results 74% of respondents (82% from central and eastern Europe, 81% from western Europe) "were well prepared for using technology for efficient working during the COVID-19 outbreak". Those respondents that have had high performance regarding embedding emerging information technology and work from remote locations even before the pandemic had better adjustment (at 95%). Respondents considered how "COVID is accelerating Cloud adoption as well as efficiency through automation" (p. 34). The report highlights that these responses to the pandemic might become more "long-term shift towards more flexible and remote ways of working" and that "longer-term trend on the impact of digitization on the profession seems as relevant as ever". Although this working model was obligatory, many accounting professionals argued how remote working, with the help of IT can become "a more competitive and efficient way to operate" (p. 36) and already auditors started to use IT more intensively than before during inventory testing with the use of "additional procedures for virtual observation, using soft copy information from a mobile device, webcam or with drones'" (p. 36).

The Confederation of Asian and Pacific Accountants (CAPA, 2020, 3) issued a report based on a survey of its members, Professional Accountancy Organisations (PAOs) in or with an interest in the Asia Pacific in April 2020, which identified "COVID 19 as an accelerator of change". The report identified high costs of technology implementation, lack of staff competency to support digitalization as well as the inadequacy of national digital infrastructure as major challenges of "digital transformation". Many PAOs firm the survey committed to the digitalization of their operations and considered "digital transformation" as a "top agenda item" in the new circumstances.

According to the recent reports of the professional accounting organizations (The International Federation of Accountants (IFAC), 2020, ACCA, 2020; ACCA and EY, 2020; The Association of International Certified Professional Accountants and the Chartered Institute of Management Accountants (AICPA and CIMA) (2020b), professional accountants core skills haven't changed due to the COVID-19 pandemic but there was an increased emphasis on the digitals skills, as the profession had undergone significant changes. This is consistent with the findings of the most recent academic research and professional accounting organizations regarding a transition in accounting roles and skills (Leitner-Hanetseder et al, 2021; Oesterreich et al., 2019; Borrego

et al., 2020, Žager et al., 2020; Barišić et al. 2020) that also highlight the importance of digital skills for accounting professionals.

Analysis of the impact of COVID-19 on the accountants globally conducted by SmartVault (2020) in April 2020 (the survey was based on the 1,109 responses, where North America and the Caribbean represented the largest group of respondents and Western Europe the second largest group) reached similar conclusions. Research findings concluded that differences between firms regarding their successful response to the pandemic were mainly based on different levels of digitalization. Most respondents that were already using some information technologies like Cloud-based services were more satisfied with their firm's response to the COVID-19 pandemic (p. 14). That technology enabled them access to documents through an online management system which enabled them to perform more efficiently in the circumstances of remote work. Respondents were also using other means of technology to continue collaboration with clients like (p. 17): utilization of eSignature, online client portal for exchanging documents but also teleconference and video meetings were also held and postal mail was used to exchange documents. Respondents also stated that their main concern at that time was "keeping clients informed" with the concern regarding the security of communications and documents being the third one.

AICPA and CIMA (2020a) report, issued in August 2020, provides an in-depth analysis of the COVID-19 impact on the accounting profession showing its relevance for the emergence of the new patterns of behavior. Report (p. 4) lists three major effects of COVID-19 on the accounting profession and these are: changed face of the community which had to connect in new ways, need for speed and flexibility of learning, changed purpose which needs to have "value beyond profit". Also, according to their analysis of the secondary research, 54% of AICPA and 48% of CIMA members expected that remote working won't vanish with the pandemic and that it "will be a permanent aspect of work in the future" so the report stressed out the need for making available various digital options for a longer time since their clients' habits and needs have also undergone profound changes. Their recent report (AICPA and CIMA, 2020b), issued in December 2020, has identified lessons learned from the pandemic for the accounting profession. The report highlighted the need for accountants and finance professionals to seize the opportunity offered by digitalization as well as information technology that enables virtual environments, like Cloud technology, which is not just suited for big companies (p. 4). It also pointed out "cybersecurity concerns around confidentiality, privacy and data protection" as important issues in terms of the digitalization of the accounting profession.

Due to the strong impact of COVID-19 on the company's operations, issuers on the European Union (EU) regulated markets have been given flexibility with deadlines for publishing their 2020 annual financial reports in a European Single Electronic Format (ESEF). Namely, according to Article 4 of the Transparency Directive (EUR-Lex, 2013), the preparation of annual financial reports in an ESEF should be mandatory with effect from 1 January 2020. But "considering that the preparation of annual financial reports using the single electronic reporting format requires the allocation of additional human and financial resources, in particular during the first year of preparation, and considering the constraints on issuers' resources due to the COVID-19 pandemic" the European Parliament (EP) and Council published an amendment in the EU Official Journal on 16 February 2021 which approves the one-year optional ESEF postponement (EUR-Lex, 2021). According to Article 2 of the Amendments to Regulation (EU) 2017/1129 "a Member State may allow issuers to apply that reporting requirement for financial years beginning on or after 1 January 2021, provided that Member State notifies the Commission of its intention to allow such a delay by 19 March 2021, and that its intention is duly justified" (EUR-Lex, 2021).

3. Challenges and further information technology integration into accounting

3.1. Cloud computing

Following the National Institute of Standards and Technology (NIST) cloud computing is defined as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction" (Mell and Grance, 2011, 2). Since internet connection is essential for the functioning of cloud computing, its interruption is one of the risks and potential concerns associated with cloud computing in addition to other risks such as fear for safety, dependency, loss of control over data, the privacy of the company's sensitive data (Christauska and Miseviciene, 2012, 15; Dimitriu and Matei, 2014, 844). On the other hand, geographically unlimited access through remote network access, reduced costs, easier administration, and increased performance through enhanced business agility and flexibility are some of the benefits of cloud computing as well as the possibility of unlimited data storage and automatic backup for the customer's data (Christauska and Miseviciene, 2012, 15; Dimitriu and Matei, 2014, 843). The NIST identifies three Cloud service models: Software as a Service (SaaS), Platform as a Service (PaaS), Infrastructure as a Service (IaaS) and four cloud deployment models: private cloud, community cloud, public cloud, and hybrid cloud (Mell and Grance, 2011, 2-3).

Following, Brandas et al. (2015, 929) study, based on a quantitative research of existing literature and specialized practice, usage of Cloud technologies in the accounting information system (AIS) has a positive impact by significantly reducing acquisition costs, maintenance, and management of hardware and software infrastructure of the company. Further, the authors highlighted that since AIS processes and stores a series of sensitive and confidential data (general ledger, payroll database, and financial database), Cloud and mobile technology adoption requires a rigorous analysis of data and application security. Therefore, they emphasize the important role of IT audit services on mobile Cloud technologies.

An increasing number of organizations of all sizes are using Cloud computing but this technology can especially be useful for small and medium-sized accounting firms. According to one of CIMA reports (2015) "Cloud adoption is almost inevitable for SMEs" since hosting and maintaining own information, systems incurs great costs (p. 7) but the primary reason for not adopting Cloud technology in financial accounting processes is data security concerns. By FloQast (2018, 9) there is no single type of financial Cloud application that is used most commonly but there is a mix that includes payroll, expense management, general ledger, reporting, invoicing, time tracking, bill payment, document processing, close management and other.

The COVID-19 pandemic, according to Gartner (2020) reorganized priorities and made companies more focused to "preserve cash and optimize IT costs, support and secure a remote workforce, and ensure resiliency". Cloud-based technology successfully interconnected all of these goals and its increased use "reinforced Cloud adoption to be the new normal" (Gartner, 2020). According to recent Eurostat statistics (2021), in 2020, 36% of EU enterprises with at least 10 persons employed used Cloud computing, which is almost doubled compared with 2016 (19%). Also, 45% of the enterprises that reported using Cloud computing used it to access financial or accounting software applications (45%). SmartVault report (2020, 3) identified COVID-19 "as a forcing mechanism" for further integration of Cloud-based technology into

accounting because it enabled accountants to perform their jobs more effectively and efficiently but also "to offer more strategic, advisory services". Modisane and Jokonya (2021, 792) conducted a study to evaluate the effects of Cloud computing in small, medium, and micro-sized enterprises (SMMEs). The authors concluded that technological and environmental context has a positive and significant effect on the adoption of Cloud computing practices amongst SMMEs, while organizational context had a negative and non-significant effect on the adoption of Cloud computing practices. Motivated by COVID-19 Al-Nsour et al. (2021, 875) surveyed the sample of external auditors to investigate the advantages and threats that encounter the implementation of Cloud Accounting Information Systems (CAIS). They pointed out the main advantages as "a reduction of labor and overtime costs", also by some previous research, and identified "penetration, interruption of the Internet connection, and confidentiality issues in case of unauthorized access and breaches of privacy" as the main threats. According to their research findings, there is a role of Cloud accounting information systems (CAIS) in a reduction of manipulation of financial reports and in enhancing the audit process since it provides auditors necessary information on time.

3.2. Artificial intelligence

Artificial Intelligence and Blockchain, although not fully integrated into accounting, are certainly very present in the current accounting practice, especially among the accounting Big Four (Deloitte, PricewaterhouseCoopers (PwC), KPMG, and EY) and are considered as the future of the accounting profession.

AI is also known as "cognitive technology" and "cognitive computing" (Kokina and Davenport, 2017, 117). Pan (2016, cited in Lee and Tajudeen, 2020, 216) argues that "AI is the ability of machines to understand, think and learn in a way that is similar to human beings". The application of AI in the accounting field has been present for more than 25 years, mainly in the fields of financial reporting and auditing (Chukwudi et al., 2018, cited in Lee and Tajudeen, 2020, 218). Sutton et al. (2016) conducted a literature review on AI research in accounting and reported on its continuity over the past 30 years with a special increasement since 2016. AI-enabled technologies can be integrated into different tasks specific for the accountants and auditors such as: analyzing numbers, digesting words and images, performing digital tasks and physical tasks (Kokina and Davenport, 2017, 118). Application of AI-enabled technologies in the "area of data extraction, comparison, and validation" can save auditors time as well as enable them to concentrate "to areas requiring higher-level judgment" (Kokina and Davenport, 2017, 117). According to the review of Issa et al. (2016), there are many emerging AI-enabled technologies such as deep learning, visual recognition, textual analysis, and natural language processing that are suited for auditing with "unlimited potential" for the application.

Because of its unlimited potential for application in the field of accounting, Kokina and Davenport (2017,120) argue that future integration of AI-enabled technologies won't necessarily cause great loss of employment for the accountants "since AI technologies replace specific tasks rather than entire jobs". They discuss the possibilities of the integration and predict future accounting jobs to include the following activities (Kokina and Davenport, 2017, 120): "working alongside intelligent accounting machines to monitor their performance and results, and (if possible) to improve their performance; overseeing the use of intelligent machines in external and internal audit processes, and determining whether more, less, or different automation tools are necessary; working with accounting firms and vendors to develop new AI-based technologies, and to support existing ones; carrying out tasks that are now impossible with AI-based computers, including cultivating internal and external clients,

interpreting audit and financial results for senior managers and boards of directors, and so forth; addressing types of accounting tasks that are so narrow and uncommon that it would be uneconomical to build systems to automate them". There is evidence that the application of AI-based accounting technology in practice improves efficiency and customer service, as well as productivity and saves time which enables a more flexible working style (see more in Lee and Tajudeen, 2020). There are also some potential limitations of AI-enabled technologies, as highlighted by Moll and Yigitbasioglu (2019), like "inherent bias and prejudices that humans generate and capture to train the system" since AI learns from existing data.

All of the accounting Big Four have integrated AI-enabled technologies into their operations for various services. KPMG cooperated with IBM regarding the implementation of deep learning technology and AI technology in tax analyses. Application of cognitive technology enables reviews of high volumes of data as well as an understanding of complex issues, prioritization, making hypotheses and considered arguments, and finally presenting solutions which all help tax professionals to make better decisions (KPMG, 2019a). PwC's enhanced audit with the application of the AI technology in 2017 with the module that has the ability to analyze huge volumes of data without the need for audit sampling (PWC, 2019a). It was followed by others, specifically in 2019, with the application of AI-based technologies in the audit of cash (PWC, 2019b). Ernst & Young (EY) also employed AI technology on "document review and processing" with AI-based Microsoft technologies, which dramatically reduced time for document review and processing (by 90%), costs (by 80%) as well as risk (by 20%) (EY, 2019). Deloitte (2018) also used AI-enabled technologies for tax services, with the ability to "even predict how a court would rule in a case" but also in some other areas like Human Resources (HR) where a humanoid robot, equipped with speakers, cameras, and microphones was employed in the processes of hiring potential employees.

Although they have somewhat different applications of AI-enabled technologies, all of the accounting Big Four have planned to invest and invest huge amounts of money in the further development of technologies. For instance, in December 2019 KPMG announced a planned five-year investment of $5 billion in technologies like AI, new Cloud-based technology, and automation (KPMG, 2019b). COVID-19 pandemic forced a great change in this context as well. Also, according to the KPMG (2020, 25) report, based on the global cross-industry surveys on 900 business and technology executives conducted from March till June of 2020, AI and Cloud were identified among other technologies as "heroes in turbulent times" of COVID-19 pandemic. Also, the combined use of emerging technologies, like Cloud and AI is believed to be much more beneficial than using emerging technologies individually. AI was especially highlighted as a technology that enabled the reduction of costs, more specifically in the early months of the pandemic (KPMG, 2020, 7) with increased spending intentions in the future period.

The most recent research conducted by Leitner-Hanetseder et al. (2021, 540) on the tasks and the roles of AI-based accounting provides reliable evidence that though the application of AI technologies "is in its infancy" it is also the future of digital accounting. Authors argue how further integration of AI-enabled technologies can have comprehensive implications on accounting and predict the near future as follows: "in AI-based accounting in 2030, humans will train AI-based technology and use their expert knowledge and experience to monitor AI-based technology" (Leitner-Hanetseder et al., 2021, 544).

3.3. Blockchain technology

Unlike the two aforementioned, Blockchain technology is relatively recent and has been defined in many different ways. According to the NIST, "Blockchains are tamper evident and tamper resistant digital ledgers implemented in a distributed fashion (i.e., without a central repository) and usually without a central authority (i.e., a bank, company, or government). At their basic level, they enable a community of users to record transactions in a shared ledger within that community, such that under normal operation of the blockchain network no transaction can be changed once published" (Yaga, 2018, 1). Originally blockchain was developed for an online "cryptocurrency" (bitcoin), but its functionality has evolved into a large number of applications like banking, financial markets, insurance, voting systems, leasing, and government service (Dai and Vasarhelyi, 2017, 5). According to Liucheng (2019, 184), the distinctiveness of blockchain technology such as irreversibility and timestamps function are reducing opportunities for false trades and accounting frauds as well as auditing costs.

In recent years, global spending on blockchain solutions has reached high amounts. According to Deloitte's (2020, 7) global survey in the early days of the pandemic in 2020, 39% of the global respondents adopted blockchain into production until March 2020, in comparison to 23% in 2019. Blockchain has also been identified as "a true agent of change" previously classified as a "technology experiment" (Deloitte, 2020, p. 7). Dai and Vasarhelyi (2017, 5) discussed how blockchain could enable a real-time, verifiable, and transparent accounting ecosystem and highlighted blockchain's potential to transform current auditing practices, resulting in a more precise and timely automatic assurance system but also argued that its application in the accounting practice "remains under-explored".

Bonson and Bednárová (2019, 729-732), summarizing previous studies, identified the most comprehensive benefits as well as the challenges of blockchain. In the accounting context, authors discussed the benefits of the concept of distributed consensual accounting records (DCAR) as a new and innovative concept enabled by blockchain technology and important for the continuous accounting since "transaction has been approved by the participants (nodes) of the block (e.g. the supplier, client, auditor, regulator, public administration), registered and cryptographically sealed, which guarantees the immutability of the data entry." There are also copies of the transaction, saved in different places, and every participant has a copy of the ledger. Triple-entry bookkeeping (a method proposed in the 1980s) has also been discussed as a potential benefit of blockchain technology in the accounting context. Blockchain enhances double-entry bookkeeping with no need for independent intermediary because "transactions are distributed, cryptographically sealed and linked" (Kiviat, 2015, cited in Bonson and Bednárová (2019, 733) which "reduces the risk of fraud and errors by keeping a non-biased record" and "by creating an immutable history of all the transactions within a system" (Dai and Vasarhelyi, 2017 cited in Bonson and Bednárová, 2019, 733).

Similarly, Hughes et al. (2019) highlighted that blockchain has the potential to offer several distinct benefits when compared to traditional centralized architectures and discussed some of the specific technical challenges and unintended consequences that may limit the development and commercial adoption of blockchain technology. These are lack of privacy, high costs, security, flexibility limitations, latency, and governance. Additionally, the authors listed some non-technical limitations which include lack of acceptance from legal and regulatory authorities and lack of user acceptance. Schmitz and Leoni (2019, 331) investigated topics regarding blockchain technology in the accounting and auditing context, by both academics and

accounting practice and found that governance, transparency, trust issues, continuous audits, and paradigmatic change of accountants' and auditors' roles as most discussed ones.

Most recently, several studies investigating blockchain integration into accounting and auditing practice have been carried out. Fuller and Markelevich (2020, 34) demonstrated many benefits from blockchain in accounting, particularly in the areas of data reliability and the financial statement audit, but identified several factors, which raise significant questions about whether blockchain will ever be significantly integrated into accounting. Authors found that the unique needs of an accounting information system may not be a good match for blockchain as it currently exists. They also argued that while there is an evident investment in blockchain technology and the development of its applications they assess that "proponents of blockchain integration in accounting have not yet made the economic case for it". According to the authors, it would be necessary to address all these limitations, especially ones regarding data security and privacy before further acceptance of blockchain technology by the accounting profession. Cybersecurity has also been pointed out as the greatest "challenge to blockchain's adoption and acceptance worldwide" (Deloitte, 2020). By Yoon (2020) blockchain can overcome the limits of double-entry bookkeeping such as the need for external assurance on companies' financial statements and the potential for fraud (2020, 13). It offers increased information security and improves transparency in accounting (Yoon, 2020, 18) as well as delivers many benefits, particularly in the areas of data reliability and financial statement audit (Fuller and Markelevich, 2020, 34).

4. Conclusion

The COVID -19 pandemic has caused many changes in doing business particularly related to the digitalization of business processes and consequently, it has also influenced the accounting and accounting profession.

In this paper, we conducted an analysis of the implications of the COVID-19 pandemic on accounting based on recent reports from prominent professional accounting organizations, big accounting firms as well as academic research. The aim was to assess how accountants responded to the challenges that emerged from the pandemic and what were the implications for further integration of information technology into accounting.

The results of this analysis confirm that remote working was identified as one of the most significant changes for professional accountants. Accounting professionals who previously integrated information technologies to a higher extent adjusted better to this working model and all of its implications. Information technology served an important role in accounting even before the pandemic but seismic shifts sparked by the pandemic had an impact on the speed of further information technology integration into the accounting practice.

Cloud computing was highlighted as the information technology suitable for companies of all sizes with the rapid growth of usage in the pandemic. That technology enabled accountants to have remote access to documents and to perform their work more efficiently. AI, along with the Cloud technology in the pandemic enabled the reduction of cost, although its use in accounting is not fully maximized. Blockchain is also the future of accounting with the potential to greatly impact the accounting practice. All of these technologies have numerous benefits such as enabling more accurate and timely financial information, reduction of manipulation of financial reports, reduction of costs, and enhanced decision-making process but they all share a common challenge - security. This topic, along with other limitations and challenges, although

of great importance, is not sufficiently explored in the accounting context. Many risks that emerged from the COVID-19 pandemic regarding the use of information technology highlighted the vulnerability of information technologies especially regarding the size of the company. More information from future research on the challenges/risks of emerging information technologies in accounting would certainly help to establish a more comprehensive view.

All of the changes that accountants are facing fostered with information technologies and accelerated by the pandemic will lead to the change of accounting tasks. The changed conditions require accountants around the world to master the new skills related to information technology. Professional accountants, regardless of the work they perform, await the challenge of constant adjustment and adoption of knowledge and skills related to information technology to be able to offer quality service to their clients.

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A scientific paper

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CHALLENGES AND IMPACTS OF COVID-19 PANDEMIC AND THE EUROPEAN GREEN PLAN ON THE DEVELOPMENT OF THE CROATIAN AGRICULTURAL AND FOOD SECTOR

ABSTRACT

The aim of the research is to identify challenges and obstacles to stronger and sustainable development of the Croatian agri-food sector in the context of the Covid-19 pandemic and the European Green Plan, and the purpose of this paper is to design cross-sectoral measures to simultaneously increase the contribution of this sector to the national product, agri-food self-sufficiency, food security and eco system protection. Primary data were collected by methods of analysis, comparison and classification, while the design of proposed measures is based on methods of synthesis and descriptive logical modeling. Although the Covid-19 pandemic has not been curbed, the associated effects and challenges for the national agri-food sector have been recognized, as has the need for strong change in this sector. The short-term danger of shortages of basic agri-food products and "food insecurity" must not be repeated if national food self-sustainability is strengthened, all branches of agricultural production are self-sufficient, especially those with trade deficits, and sufficient food supplies and security of supply are ensured. The added value to sufficient and quality agricultural raw materials will increase through profitable and controlled investments in processing plants primarily financed by EU funds. Agricultural subsidies should belinked to increased production, but also to the accelerated development of digitalisation and web commerce and adaptation to new trends in consumer eating habits – eg local origin and "short chains" of food distribution, nutritional quality, positive environmental impact, fast meals for preparation at home, etc. Food production will also increase through strengthening synergies between the food, tourism and catering sectors, especially through branding, marketing and protection of indigenous food products.These products will strengthen the export potential of domestic producers and to some extent neutralize the negative influences of foreign retail chains. Reforms of the agri-food sector will have to be implemented in the context of the new challenges associated with the European Green Agenda. In addition to the environmental benefits of the green transition, the plan will have a strong impact on agri-food policy as it requires decarbonisation of production, reduction of pesticide and fertilizer use, afforestation and biodiversity protection, but can also increase production costs, raise prices, reduce demand, and weaken production and "food security."

Keywords: *Covid-19 pandemic, European Green Plan, food sovereignty, food (in)security, agri-food policy measures.*

1. Introductory remarks and considerations[1]

Although the Covid-19 pandemic has not yet been curbed through public health measures and the start of vaccination, its economic, health and other social costs and challenges are being carefully and continuously analyzed in order to recover from the crisis, raise awareness of future risks and improve social resilience for shocks that are coming. As elsewhere in the world (the most significant exception is China), the Croatian economy in 2020 as the year of the "Great Paralysis" (Zakaria, 2020, 20), a global disruption of significant parts of the economy, marked a decline in GDP of 8.4 percent. The decline is twice the European average and was mainly generated in the services sector, especially tourism, catering and transport. A new and fierce recession, which is deeper and longer lasting in Croatia than in other European countries, with shaky global food supply chains, deficient domestic production, dependence on food imports and possible growth of food prices in Croatia during the corona crisis developed feelings of fear of food insecurity and distrust of the economic and socio-political system in the population.

Concerns about food safety with respect to nutritious quality food have raised the issue of ensuring national food self-sufficiency, especially concerning those agricultural products that are imported into Croatia. Following this and the global topics about connection between emergencies and population biosecurity, the impact of occasional measures such as restricting or banning food exports on the global free trade system for goods, services and ideas is being carefully analyzed in all parts of the world. In order to assess the level of Croatian food self-sufficiency and security in normal and challenging social circumstances, the second part of this paper "The state and challenges of the national agri-food sector during the public health and economic crisis" analyzes the structure, long-term trends and current production activity in this sector.

Understanding Covid-19 as a zoonosis has raised global awareness and concern about the increasingly dangerous and rapid impact of growing production, consumption of goods and energy, waste accumulation, greenhouse gas emissions and biodiversity loss on increasing and spreading threats to human health and quality of life. Three-quarters of new human diseases, for example, come from animals (Zakaria, 2020, 26). Existing food production systems and methods are not only questionable in terms of ensuring future sufficient food supplies for a growing population but also make a strong contribution to spreading and deepening the multidimensional ecological crisis. The detrimental impact of the agri-food industry on the environment and human health and the significant changes that European green transition strategies bring to the agri-food sector are analyzed in the third part of the paper entitled "Strategies "European Green Plan" and "From field to table" as challenges for the national agri-food sector".

The fourth part of the paper "Recommendations and measures for stronger growth and more sustainable development of the agri-food sector", based on the analysis of the situation in domestic food production and the impact of European strategies for "green" transition, proposes measures that should be implemented to achieve the necessary turnaround and increase domestic production and export of safe and nutritionally good food, consequently increase self-sufficiency and food security of the population, as well as replace the existing paradigm in food production and progress in nature conservation and natural capital growth.

The "Concluding Remarks" once again highlight the problems and challenges facing the domestic agri-food sector during the Covid-19 pandemic and recession, but which will be posed

by European "Green Plan" and "From field to table" strategies in the future. Solutions important for the survival, strong growth and development of agri-food production are offered, but also for the turn towards sustainable agricultural production, sustainable food processing and distribution, sustainable food consumption, reduction of food waste and other types of waste.

2. The state and challenges of the national agri-food sector during the public health and economic crisis

The agri-food sector is the basis of human biological reproduction and an important segment of the economy, but with the necessary changes that conventional agriculture is going through, it has increasingly important additional roles - generating income for survival and development of rural areas and stopping their depopulation, reducing emissions, preserving biodiversity and landscape, etc. The Croatian agri-food sector has many characteristics and circumstances that it can use to strengthen competitiveness and growth, but also for the sustainable development of this sector: diverse and high-quality natural and ecological conditions (although the quality of agricultural land is deteriorating), geographical location in the center Europe, rich water resources, good road infrastructure, relatively low labor costs in agriculture, strong tourism sector, unlimited access to the EU market, access to finance under the common agricultural and fisheries policy, etc. (Svjetska banka, 2019, 3) But all these key advantages and potentials are not sufficiently used and Croatia does not produce enough food for its own needs and independence from imports, does not care enough about the development of sustainable agriculture, rural areas and population, nor about raising awareness about the need to protect the environment and consume better food.

Due to insufficient use of own advantages, the total value of agricultural production is continuously decreasing and today it is even below the level of the crisis in 2009. The results of the analysis of agricultural production in Croatia show that its value is continuously decreasing and is currently even below the 2009 crisis level. Although huge amounts of money are invested in the development of agriculture, on average around six billion kunas a year (seven billion in 2020), the annual value of production has dropped from 30 billion in the early 1990s to 22 billion in 2008 and finally to 17 billion kunas in 2019. Indicators of production results in many segments of Croatian agriculture are gloomy: eg. cow's milk production fell from 489,646 tonnes in 2016 to 435,606 tonnes in 2019, and while in 2017 a little less than 20,000 ha were sown under sugar beet, in 2019 the sown area was 11,500 ha, and in 2020 only 10,454 ha. (DSZ, 2020-b, 10, 13-14) In the production of wheat, corn and soybeans there are surpluses which are exported as raw materials, and are returned to Croatia as expensive bakery, meat and other products that increase the deficit in foreign food trade. Even worse, when there are occasional domestic market surpluses, such as potatoes, uncontrolled imports and sales at dumped prices do not stop. (Kuskunović, 2020)

Faced with a long-standing growing imbalance in agri-food trade, Croatia is currently dependent on food imports. With the exception of 2020, the value of imports of agricultural products and their processing is constantly increasing. From a former food exporter, Croatia has become a country with an annual deficit of 1.219 billion kunas (data for 2019) in trade in agricultural products and food. (European Commission, 2020-b, 13) Croatia is the largest importer of pork in the EU because domestic production meets only about 50 percent of domestic needs, and except at the peak of the season, significant quantities of fruits and vegetables are imported (cauliflower, cabbage, cucumbers, peppers, onions, apples, pears, apricots, cherries, cherries, plums, grapes, etc.) (DSZ, 2020-b, 11-12)

However, due to a weaker decline in exports compared to the decline in imports, the agricultural production and processed sector significantly reduced their foreign trade deficit in 2020. According to the Central Bureau of Statistics, the total value of exports of agricultural and food

(and beverage) products was is 17.159 billion kuna and the value of imports is 23.056 billion kuna (DSZ 2021-b). It is not entirely clear whether this is a long-term positive trend or a temporary effect due to occasional closures of state borders, difficulties in freight transport or falling domestic demand, especially in tourism and retail. The reduction of the foreign trade deficit should certainly not be interpreted as a sign of strengthening the export competitiveness of this sector, but it can still be concluded that in 2020 consumers, distributors and traders were more focused on domestic producers and supply lines. Unfortunately, the analysis of the structure of foreign trade shows that self-sufficiency is most lacking in the most important products in domestic consumption: meat, milk, fruits and vegetables.

In addition to reducing the foreign trade deficit, Croatian agriculture in the pandemic year and difficult business environment achieved an increase in the value of total agricultural production by 7 percent and will amount to about 19,243 million kuna. The growth in the value of agricultural production was mostly due to the record harvest of wheat, corn and oilseeds, followed by significant growth in the production of potatoes and olives, and positive trends in fruit and vegetable production, as well as in some parts of livestock. The value of real income in agriculture for the same year will amount to 10,696 million kuna, which is an increase of 14 percent compared to the previous year. Gross value added is estimated at 9,458 million kuna. Compared to the previous 2019, this represents a growth of 12.3 percent. The work invested in this period is the same as the year before. The index of real income in agriculture per unit of annual labor increased by 15.4 percent and is estimated at 60,237 kuna. (DSZ, 2021-a) Considering that 2019 was relatively successful for Croatian agriculture as well, compared to 2018, for example, the value of real income increased between 2.2 percent (DSZ, 2020) and 2.4 percent (European Commission, 2020-b, 2), the results achieved by vulnerable Croatian agriculture in the first year of the Covid-19 pandemic are encouraging and, with careful interpretation, may suggest longer-term growth. Mild optimism is supported by other positive developments and trends recorded in 2020 in agricultural production, such as the growth of aid under the *European Agricultural Fund for Rural Development* (in total 7 billion kuna, 4.3 billion more than five years ago) and the payment of additional aid to help farmers and ranchers due to the Covid-19 crisis (299 million kuna), productivity growth in agricultural production, launching an important investment cycle in agriculture (Smarter, 2021) and a noticeable shift in awareness of the necessity of food self-sufficiency based on better organization and efficiency of farmers and connections with purchasers and traders. Of course, if the current pandemic-economic crisis continues, especially in the tourism and passenger transport sectors, it will negatively affect the growth of agri-food production and investment in increasing the added value of agricultural products. On the other hand, food prices have already risen globally by 18 percent since mid-2020 (the highest level in six years) and will continue to rise due to increased demand (especially in China), drought in South America, restrictive measures by governments around the world exports of their agri-food products, etc. (FAO, 2021), which will lead to an increase in the income of part of domestic agricultural producers and motivation to make additional investments.

Although all domestic industrial sectors have a decline in added value as a result of the recession in the near and far environment, food production in 2020 did not experience a significant decline, which is not to say that problems are not just delayed for some time. (Arčabić, 2020) Given the general devastation of the industry, it is a pleasant surprise that food production has shown not only resilience, but also low impact from the crisis compared to others due to low elasticity of demand for food products regardless of economic cycles. Production in this branch in 2020 remained at approximately the same level as the previous year (down 1.8 percent in the first ten months of 2020), with the exception of a large decline in beverage production. The decline was 17.4 percent in the first ten months of 2020, due to the closure of cafes and restaurants, the closure of tourism, etc. (Štriga, 2020, 94-95)

The food industry is one of the most prominent industrial sectors because compared to other branches of the manufacturing industry it still has the largest share in Croatia's gross domestic product (GDP) and total employment. The share of the food and beverage industry in Croatia's GDP in 2017 was 2.9 percent (of which the share of food production was 2.3 percent and beverage production 0.6 percent). At the same time, the share of food and beverage production in the GDP of the processing industry was 22.5 percent. The share of the food and beverage industry in total employment in 2019 was 3.6 percent, and the number of employees in the crisis in 2020 increased by 0.5 percent in food production and 3.2 percent in beverage production. The food and beverage industry is a significant exporter that thus stimulates the economic growth of the entire economy. Analyzing the export and import of food industry products from 2010 to 2019, an increased volume of foreign trade of the food industry is noticed. At the same time, the increase in exports was weaker than the increase in imports, since exports in the period from 2010 to 2019 increased by 105.6 percent, and imports by 118.6 percent. The coverage of imports by exports of food industry products in 2019 was 52.4 percent, while in 2010 it was 55.7 percent. (Palić, 2020, 4-6). Given that the export of food products, beverages and tobacco in 2020 was around 1.1 billion euros, and imports 1.9 billion euros, Croatia still has a huge deficit of 764 million euros. Despite the 162 million euros lower deficit compared to 2019, the long-term trend of continuous growth of the deficit in food trade is still evident. (Štriga, 2020, 92-95)

The problems of Croatian agriculture and the food sector in the coming years could also escalate due to neglect of rural areas, especially demographic decline in rural areas and the deteriorating age structure of farmers. Namely, in Croatia 60 percent of farmers are older than 55, and as many as 32 percent are older than 65. In the wake of EU trends regarding the unsuccessful change of agricultural generations, which led to the disappearance of several million farms or a quarter of their total number compared to 2005, Croatian agriculture is also in danger of losing up to 50 percent of its farms and producers in the next five to ten years. (Žulj, 2020, 24) Emigration of the Croatian population is conditioned by the recession likely affected the decline in the use of the area under arable land by 2.2 percent in 2020 compared to 2016.

The emergence of the Covid-19 pandemic and lockdown during of 2020, occasional interruptions of transport routes and technological changes in the global supply chain (online trading), low productivity of land and labor in agriculture, production of low value-added agricultural products, fragmented production structure, weak international competitiveness, dangerous disparities in food trade and Croatia's import dependence, neglect of arable land and rural areas and depopulation of villages, etc., in an atmosphere of global recession and changes in the attitudes of the population regarding sustainability and equity have made all the accumulated problems of Croatian agriculture and food production more visible. All the reform changes that inefficient and uncompetitive domestic agri-food production has to go through have recently been accompanied by the necessary changes that come from the EU level with which this sector must be harmonized. New and different development concepts and strategies "European Green Plan" and "From fields to the table" force the agri-food sector to transform towards ecological production of sufficient quantities of safe and nutritious food, energy neutrality, pollution reduction and biodiversity conservation in relative very short time. If it is concluded that the Covid-19 pandemic and the crisis economic year helped the Croatian agri-food sector to some extent (with evident pressures and challenges) to start a turnaround and structural reforms, it remains to be seen whether the observed positive developments and trends will continue after the implementation of new European development strategies.

3. Strategies "European Green Plan" and "From field to table" as challenges for the national agri-food sector

3.1. The European Green Plan Strategy - transforming the EU economy for a sustainable future

In order to achieve its goals, 2030 EU Agenda for Sustainable Development strategy will, in addition to „Economy that works for the people" and „Stronger Europe in the world" action plans, rely most heavily on the European Green Deal (EGD) strategy. (ETTG, 2020) EGD was presented by the European Commission at the end of 2019, believing in the active and joint opposition of EU institutions, national governments, private investors, NGOs and all citizens to the environmental crisis and climate change, as well as in collective ability to transform into a sustainable economy and society and the EU's global leadership position in this transformation. (Europska komisija, 2019-a). Guided by the principles of fairness (financial assistance to all those affected by the „green" transition), inclusiveness ("leave no one behind", through eg supporting social housing) and prevention ("do no harm"), the EGD has set the following goals that should be achieved by 2030 and 2050: achieving climate neutrality, zero pollution rate for a toxic-free environment, preserving and restoring ecosystems and biodiversity, accelerating the shift to sustainable and smart mobility, supplying clean, affordable and secure energy, mobilizing industry for a clean and circular economy, building and renovating in an energy and resource efficient way and a fair, healthy and environmentally friendly food system. To achieve this last goal, a special strategy "Farm to fork" was developed, ie as it is also called "From field to table". As stated in the strategy, the "green" transition will not be possible without mobilizing research and encouraging innovation, as well as without designing and implementing new and different sectoral and cross-sectoral policies and adjusting objectives.

As for the most acute environmental problem, the successful implementation of the Green Plan will transform Europe into a greenhouse gas-neutral community by at the end of the envisaged period in 2050. Achieving neutrality presupposes a further reduction in greenhouse gas emissions, although onwards EU already managed to reduce greenhouse gases by 23 per cent with economic growth by 61 per cent since 1990. The key to success is the decarbonisation of the energy sector responsible for producing 75 percent of the EU's greenhouse gas emissions. Decarbonisation includes increasing energy efficiency (through, for example, energy renovation of public and private buildings), decarbonising the gas sector, interconnecting energy systems and more efficiently connecting renewable energy sources to the grid, promoting innovative energy technologies and modern infrastructure, increasing cross-border and regional cooperation energy sources, promoting EU energy standards and technologies globally, developing the full potential of European offshore wind energy, empowering consumers and helping member states to combat energy poverty (Europska komisija, 2020-a). Failure to decarbonise and worsening climate change would hit Europe with 90,000 deaths a year from heat waves, 660,000 additional annual asylum claims, annual economic losses of € 190 billion, a 20 per cent rise in food prices by 2050, a 40 per cent reduction in available water quantity in the southern regions of the EU, etc. (European Commission, 2019-b).

The Green Plan envisages that in future economic growth would not rely on additional resource consumption because the industry will be organized on the principles of circular economy and circular product design, which means longer use of electrical and electronic equipment, longer product life, easy repair and upgrade of the product, retention of ownership and responsibility for the product by the manufacturer during its life cycle - "product as a service", reduction of packaging and other waste, digital transformation of industry, etc. (Europska komisija, 2020-b).

Through horizontal and vertical interconnection and coordination of policies and measures, the Green Plan envisages synergistic improvement in efficient use of natural resources, as well as restoration of biological diversity. Namely, due to harmful consequences of resource extraction and processing of materials, fuels and food, 16 percent of living species are threatened with extinction. Linked to EGD, the Biodiversity Strategy envisages reducing pesticide use and increasing the number of pollinators, restoring free flow for more than 25,000 kilometers of rivers in the EU, planting three billion trees (although the EU does not have a common forestry policy, it has a afforestation strategy), increase biodiversity in rural areas and cities, etc. (Europska komisija, 2019-c).

Due to air pollution in Europe, 400,000 people die prematurely every year. In order to have cleaner and healthier air, EGD envisages reviewing air quality standards, reducing pollution from large industrial plants, strengthening industrial accident prevention, promoting rail transport, improving the quality and quantity of European forests, reducing car emissions and developing alternative fuel vehicles, providing support to local authorities in providing cleaner air, etc. Ensuring zero levels of pollution will also improve water quality by reducing pollution caused by excess nutrients released from agricultural production and particularly harmful pollution caused by microplastics and pharmaceuticals, as well as preserving biodiversity in lakes, rivers and wetlands. (Europska komisija, 2020-b)

Transport produces 25 percent of EU greenhouse gas emissions, and its share continues to grow. EGD will seek to reduce these emissions by 90 percent by 2050 by promoting navigation and rail transport as environmentally friendly modes of passenger and freight transport, digitalisation of mobility systems and smart traffic management, development of smart applications and "mobility as a service" solutions, reducing free emissions to airlines, expanding public filling and refueling stations, promoting public transport in cities, reducing pollution in EU ports,etc. (Europska komisija, 2020-b)

Necessary financial tools are provided for the implementation of the "Green Plan" and related action plans, and the most important is the *Mechanism for a Fair Transition*, which will provide at least 100 billion euros by 2027. These are earmarked funds that will be used to mitigate the effects of the "green transition" in the most affected regions, which rely on mining, fossil fuel production and other industries with significant greenhouse gas emissions. Necessary funds will also be provided through the EU budget, EUR 503 billion "green" part of the budget, *InvestEU* fund (to facilitate and encourage green public and private investments in the amount of EUR 279 billion), *European Regional Development Fund*, *European Fund for rural development* (especially for the development of the circular economy and the bioeconomy), the *European Social Fund plus* (retraining of workers for jobs in the green sector) and others, but a significant role of national public and private sources of investment is also envisaged. To ensure sufficient funding, the Commission will work closely with national and international development banks and other financial institutions, as well as with the *European Investment Bank* (EIB), which will be gradually transformed into the *European Climate Bank*. The plan requires significant investments, and the projected total funds from the European budget, these funds and private and public investments could reach the amount of at least one trillion euros by 2030. At the national level, the Green Plan envisages important tax reforms, including shifting the tax burden from labor to pollution, increasing VAT rates to support, for example, organic fruit and vegetable production, abolishing subsidies and aid for fossil fuels and higher taxes on meat consumption (still under consideration).

As the global leader in the fight against climate change and environmental degradation, the EU intends to pursue ambitious environmental, climate and energy partnerships around the world through multilateral (eg the Paris Climate Agreement) and bilateral frameworks (with the G20 groups, African Union countries, etc.), but also with immediate neighbors. That is why green programs for the Western Balkans and the countries within the Eastern Partnership are being

prepared. These partnership policies will constructively reshape international policy, ensure a fair environmental transition and reconcile global economic, trade and political interests on a collaborative basis. (Europska komisija, 2019-a, 22-24)

Picture 1: The European Green Deal

Source: EUR-lex, https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2019:640:FIN
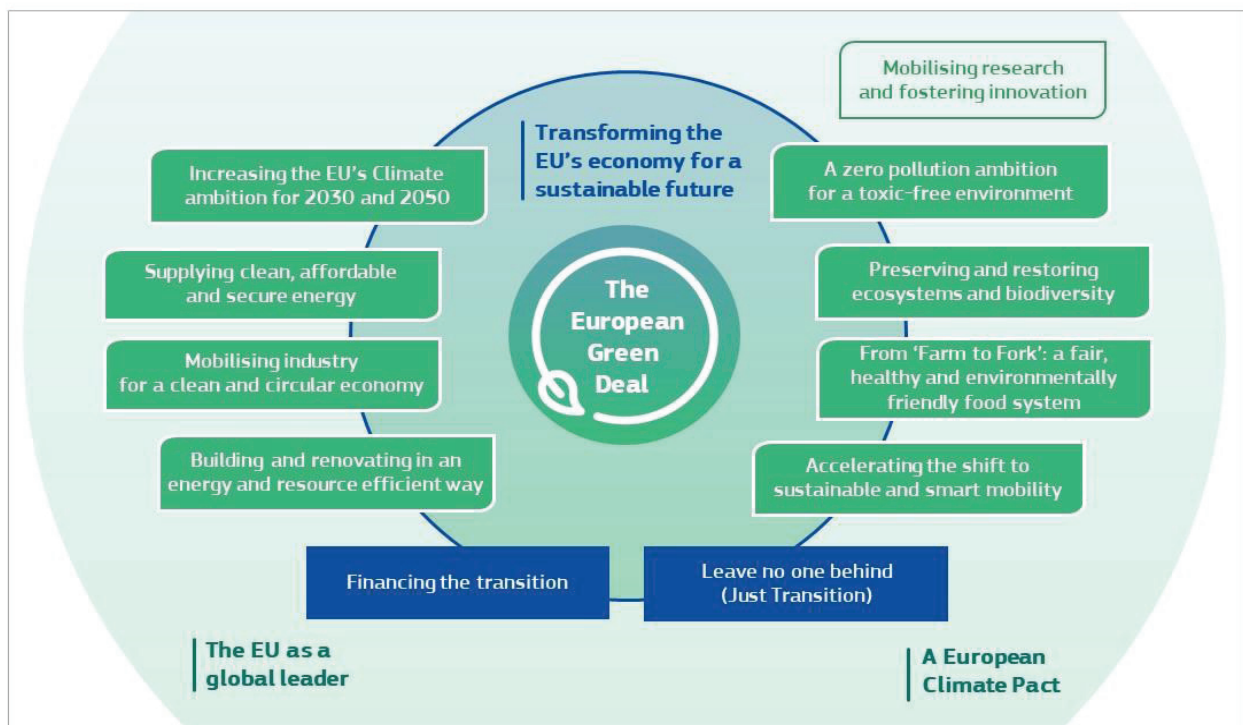
3.2. „Farm to fork" – a plan for sustainable, fair and healthy environmentally friendly food system

The Farm to Fork Strategy is central to the European Green Plan (EGD) and the EU's efforts to achieve the UN Sustainable Development Goals (UN SDGs). The strategy is a program for building a sustainable food system that will ensure environmental, health, food, economic, social and other benefits, especially after the end of the public health crisis (European Commission, 2020, 4). The central "field to table" position within the EGD logically stems from the fact that the EU is the world's largest exporter and importer of agri-food products and must therefore lead efforts to integrate the goals of sustainable agriculture, wider environmental protection and production of safe, sufficient and nutritionally quality food. By combining these goals, the strategy intends to build in practice a new paradigm of agricultural production "which protects soil, water, plant and animal genetic resources, is not degrading to the environment, is technically appropriate, economically viable, and socially acceptable" (Herceg, 2013, 290).

"Field to table" is a action plan aimed at designing and accelerated building a food chain that is simultaneously fair, economically strong, sustainable in all crisis circumstances and environmental-friendly, and at the end of which consumers reach sufficient quantities of safe

and quality food. Such a food chain reflects the essential link between the state of the ecosystem and environmental constraints, the eating habits and consumer health of the population and the security of production and supply. Although food produced in the EU is already a global health and nutrition standard, the strategy takes on the growing desire of European consumers for fresh, less processed and nutritionally quality food (whole grains, fruits, vegetables, etc.) as well as food produced according to environmental standards (less pesticides, antibiotics, hormones, steroids and additives) and in the vicinity of consumers („short supply chains"). Albeit about 33 million people in the EU still cannot afford a quality meal every other day (European Commission, 2020, 5) and that the economic and health crisis is spreading „food insecurity", excessive and poor diet rich in fat, sugar and salt is a dangerous risk factor for obesity (over half of adult Europeans are overweight) and comorbidities that worsen the health status of the population and severely burden parts of national budgets transferred to health institutions. Simultaneously with the increase in food insecurity and obesity, in production, transport, storage, on store shelves and in households about 20 percent of food is still lost and discarded. Since food loss and waste are a economic, environmental and moral problem, among the set quantitative goals of the strategy a 50 percent reduction in food waste by 2030 is sought. Food waste and redistribution will be reduced by redistribution of surplus food, innovative packaging of food into health-safe materials that can be reused or recycled, and new marketing standards that promote sustainable food production and a healthy diet (European Commission, 2020-a, 13-15).

Agricultural production and processing are the basis for the survival and biological reproduction of the population, but they are also one of the most important sources of greenhouse gas emissions, chemical pollution and causes of biodiversity loss. The global food system emits 30 percent of total greenhouse gas emissions, especially the meat industry, which contributes half to this percentage through animal husbandry. The burden on livestock farming is enormous because, for example, each cow based on its digestion over three years of life emits greenhouse gas equivalent to a 90,000-kilometer middle-class engine (Sloterdijk, 2020, 454). Therefore, farmers need to reduce methane emissions through renewable energy production, such as biogas and solar energy. Growing meat production also means that approximately eighty billion animals are slaughtered annually for meat (not including fish), with animal products providing only eighteen percent of the global calories needed. The additional cost of industrial meat production is terrible conditions for animal husbandry, as well as accelerated pumping of water from the ground and ideal conditions for the development of the most dangerous viruses and bacteria resistant to antibiotics. (Zakaria, 2020, 29) For the above reasons, the strategy plans to introduce additional taxes on meat production and lowering the tax rate on the consumption of plant-based products and aquaculture. (UNEP, 2020, 16-17) A reorientation to plant-based products and the cultivation of aquatic organisms (including fish, crustaceans, shellfish and algae) will reduce the pressure to increase the arable land 80 percent of which is used for livestock, reduce waste discharged into the oceans and contribute to biodiversity conservation. (Hrupić, 2021) Because industrialized agriculture and orientation to monocultures are destroying the number of animal and plant species, disrupting habitats through the introduction of new species and intensive deforestation, the related Green Plan for Biodiversity Action Plan envisages an increase in protected areas to at least 30 percent of the land and 30 percent of the sea. (ETTG, 2021, 11)

Compared to the base year 2020, "From field to table" plans to reduce the use of pesticides by 50 percent and the use of fertilizers by at least 20 percent by 2030. In fear of falling yields, farmers are quite afraid of this proposal, especially European (the EU is the most important wine producer in the world) and Croatian winegrowers. Although the share of vineyards in Croatia rarely exceeds 10 percent of the total agricultural area (there are currently 18,600

hectares of arable land under vineyards), and viticulture together with fruit growing participates in domestic agriculture with about two to three percent, viticulture consumes more than 70 percent of all fungicides. In the period from 2017 to 2020, an average of 3747 tons of pesticides were sold in Croatia, among which the most common are fungicides and bactericides. Fungicides are major polluters of the environment, and their association with diseases in employees in grape growing and wine production has been proven. (Hina, 2020). Large amounts of fertilizers additionally lead to "deterioration of chemical and physical properties of soil, groundwater pollution and poorer quality of agricultural products" (Herceg, 2013, 288-290), which negatively affects human and animal health. Reducing the use of fertilizers and 50 percent reduction in sales of antibiotics for animal husbandry and aquaculture certainly reduces the health risk of their use and minimizes harmful impact on nature. Excessive and improper use of antibiotics in treatment of animals and humans leads to bacterial resistance and to around 33,000 deaths each year in the EU. (Cassini et alt., 2019, 55-56)

Unlike conventional agriculture, the use of chemical pesticides, fertilizers and GMO crops is not allowed in organic agriculture, and the use of antibiotics is strictly limited. In order to maintain soil fertility, growers must rotate crops in the established order and pay attention to the choice of species and varieties and perennial crops. Organic livestock farming increases the health and welfare of animals specific to each species, and this is achieved through increasing indoor breeding areas, ensuring access to open space or breeding on pastures and disease prevention. Concern for the welfare of animals extends to their transport and slaughter. Due to the positive impact on environmental protection and consumer health, as well as due to the fact that organic farms in the EU, with less inputs, show a tendency to earn more than conventional production, the strategy (together with the Biodiversity Strategy) also sets a specific goal of increasing the number of farms engaged in organic farming to 25 percent of the total number of farms by 2030. Organic agriculture is represented, at least in part, on about 244,000 farms out of a total of 10.3 million farms in EU. This data from 2016 means that organic agriculture is represented by twenty percent more farms than in 2013, and the Common Agricultural Policy encourages the spread of organic farming in many ways and with enormous resources. (Eurostat, 2020, 8-9). Organic agriculture is also developing and growing in Croatia, and from 2012 to 2018 the number of organic producers increased from 1,413 to 4,374 producers. Areas under organic agriculture are also growing significantly, and between 2012 and 2018 they increased from 31,904 ha to as many as 103,166 ha. However, in the total number of agricultural producers at the end of 2018 in Croatia, organic producers accounted for only 2.6 percent, and the share of areas for organic farming in total agricultural land is only 6.94 percent. (European Commission, 2019-a, 19) Unfortunately, despite significant allocations for organic agricultural production, the total production of organic products in Croatia is very small, and organic agriculture, as it happens in some other EU countries, is often perceived as a way to extract funds through various subsidies.

To be fair, the transition will primarily rely on better paid and rewarded farmers and fishermen for success in production as well as for climate and environmental protection. The average income of around 9.2 million employees and their families in European agriculture, hunting and related activities was on average 50 percent lower than the income of employees in other industries in 2017. (European Commission, 2018) This is not fair and that is why the "Farm to Fork" strategy also contains proposals to improve the position of farmers in the value chain. Farmers need to be treated fairly and given a fair share of the price consumers pay for food. In Croatia, for example, only 14 percent of the retail price of food products in large stores belongs to producers. In order to produce the high standards of food paid for by European consumers, the protection of farmers is at the heart of this strategy as well as of the Common Agricultural Policy. Farmers must be able to rely on the conditions of fair and efficient market competition

because the supply chain of agri-food products is structurally different from other industries. Nearly 11 million farms in the European Union often have problems with more powerful processors, distributors and traders. Most EU farmers work on small farms and often do not have the necessary legal and financial instruments or the will to sue against unfair trade practices. The European Union has therefore decided to improve the protection of farmers and agricultural cooperatives, as well as small, medium and mid-range sized suppliers, by providing for mandatory rules prohibiting certain unfair commercial practices. Unfair commercial practices are divided into "black" (eg non-payment on time, unilateral change of contract, shifting the cost of food expiration to producers, etc.) and "gray" (eg returning unsold products to the producer, charging advertising and shelf costs etc.) practices. The Unfair Commercial Practices (UTP) Directive in business relations in the agriculture and food supply chain was adopted in April 2019, and Member States are due to transpose the Directive by 1 May 2021. The rules may complement EU Member States as well as voluntary industry initiatives. Based on the view that weaker suppliers of agri-food products should be protected from unfair trading practices by stronger buyers, the Directive is based on several key principles: states should strengthen their inspection and legal position towards unfair traders and weaker suppliers should be able to easily and cheaply protection in all EU member states. These principles should trigger legislative actions aimed at further restricting the business of unfair traders, and retail organizations should become responsible for ensuring a balanced and fair supply chain, from producers to consumers. (European Commission, 2019-b, 2-15)

The implementation of strategy is not binding on Member States, but it becomes so when its objectives are implemented through various legislative measures, the creation of new policies and the harmonization of existing ones, such as the *Common Agricultural Policy* (CAP) and the *Common Fishery Policy* (CFP). In order to achieve coherence between the EU and national levels, the EU has committed itself to creating a legislative framework by 2023 to build a sustainable food system. Key instruments of financial support for the transformation to sustainable agriculture while ensuring a decent living for farmers, fishers and their families remain *Common Agricultural Policy* (CAP) and the *Common Fishery Policy* (CFP), as well as funds from the *European Agricultural Fund for Rural Development* (EAFRD). In the proposed amounts in the European budget for 2021-2027. g. it is envisaged that 40 per cent of the CAP budget and 30 per cent of the CFP will be directed to climate change programs. Research and innovation (R&I) are key drivers of accelerating the transition to sustainable, healthy and inclusive food systems and it is therefore proposed that Horizon Europe's research on agriculture and fisheries (eg bioeconomy) and the development of digital technologies (eg high speed broadband internet) spends € 10 billion. The InvestEU Fund will encourage investment in the agri-food sector by encouraging investment by European corporations and facilitating access to finance for small and medium-sized enterprises (SMEs). National strategic programs for agriculture should reflect the ambitions of the EGD and the field-to-table strategy. (Europska komisija, 2019-a, 11-13)

The "Field to Table" strategy as the most important part of the "European Green Plan" is a transformative, concrete and quantified action plan whose implementation would by 2030 create a sustainable, fair, healthy and competitive agri-food system that would in crisis situations (such as the Covid-19 pandemic) produce sufficient quantities of safe, affordable and nutritionally quality food, and at the same time reduce the soon unbearable "environmental footprint" of this system by reducing greenhouse gas emissions and pollution by 50 percent, use of pesticides, fertilizers and antibiotics by 50 percent and food waste by 50 percent. However, on the way to that goal, the strategy envisages increasing the area under organic agriculture by 25 percent, preserving biodiversity by increasing the number of protected land and sea areas by 30 percent, increased care for food security and public health, welfare of animals in breeding, etc. During the transition special care will be taken to promoting fair trade,

as well as protect and improve the economic position of small and medium agricultural producers, precarious and seasonal workers. As sustainable agricultural practices and food production are expected to create more than 200 million full-time jobs globally by 2050, the farm-to-table strategy is also a central element of the EU's economic recovery plan.

4. Recommendations and measures for stronger growth and more sustainable development of the agri-food sector

The priorities set, objectives and measures of the "European Green Plan", "From the field to the table" and other related development strategies (eg. *Biodiversity Strategy*) should be incorporated into national development strategies, strategic plans and programs for agriculture and food production, as well as applied within regulatory and governance mechanisms at all levels of public authority. However, their implementation must also involve private business sector and professional organizations, NGOs, social partners, academic and scientific institutions, as well as a growing circle of citizens interested in building a sustainable, safe and "green" food system. Reduction of harmful emissions into air, water and soil and adaptation to climate change, sustainable management of agricultural and fishing areas, conservation and sustainable use of biodiversity, reduction of pesticides, fertilizers and antibiotics, health and welfare of plants and animals, production of nutritionally safe food, changing the structure of the population's diet, reducing trade in wild flora and fauna, stopping deforestation and afforestation, inclusive participation of farmers in the added value chain, resilience of the agri-food system, prevention and management of food and other crises, environmental standards and labels for safe food, informing citizens on food origin, nutritional value and ecological footprint of processing, reduction of food loss in the chain from production to consumer, research and technological progress in terms of innovative feeding methods, protection against pests and diseases, development of organic production and agri-environment and other action goals set out in European strategies for all parts of the agri-food chain and stakeholders pose a number of challenges. (European Commission, 2020-a, 18-19) At the same time, these strategies and the revised Common Agricultural and Fisheries Policies provide an opportunity to adopt a "green" and sustainable production model and new types of food for humans (eg seaweed-based food) and animals, but also for wider and stronger environmental protection, renewal of natural capital and circular economy.

Driven by the consequences of the pandemic, economic policy makers around the world are showing increasing interest in reorienting to a "green" economy and stronger sustainable development, with the digitalisation of the entire economy, including agriculture, proving to be a necessary tool for transformation. By canceling the spatial, social, organizational and business constraints caused by the pandemic, the digital transformation of agri-food production brings parallel growth in production, competitiveness and revenue in the short term. The estimated value added in agricultural production due to digitalization in case of Croatia rises to several billion kunas per year, and economic logic says that it could improve life in rural areas, alleviate the outflow of population and increase young people's motivation to take over family farms, buy neglected farms and invest in new production cycles. Although agriculture in our country is only about 5 percent digital while EU average is between 15 and 20 percent, strong benefits of European-funded digitalization will quickly encourage domestic farmers to engage in digital transformation. There are several major advantages, from reducing the cost of fertilizers, pesticides and other inputs (up to 30 percent), preventing decreasing yields due to incorrect application of certain agrotechnical measures (average loss in farming due to diseases and pests is between 20 and 40 percent) increasing the income of farmers whose quality (visual, nutritional, local cultivation and distribution, quality standards, health safety, environmental safety, etc.) and thus more expensive products can be more visible and informational to

potential customers by using digital platforms. Their increasing selectivity is also influencing the change in the way of doing business, eg. moving sales to online methods and buying directly from farmers, paying special attention to "green" and nutritional-health declarations on products and indigenous food. Digitization therefore makes it possible to give precise instructions to farmers based on large amount of data and expertise built into digital applications applicable to mobile phones, but the digital transition is not possible without significant and rapid investment in broadband and secure internet. (Žulj, 2020, 24)

The growth of farmers' incomes and other benefits as a result of the "green" and digital transition alleviates demographic problems, but does not eliminate the vulnerability of domestic agricultural production due to aging and declining numbers of farmers. Population aging and projected population decline of 660,000 by 2050 (Eurostat, 2021) threatens a general demographic collapse in Croatia. To stop the depopulation of rural, mountainous and remote areas, demographic and related public policies must strongly include Croatia in the implementation of the European „Smart Villages" action plan which was adopted in 2017. Faced with the same problem of depopulation in rural and mountainous areas, which cover about 80 percent of the territory with almost 60 percent of the population in the EU, from 2021 member states must allocate at least 5 percent of funds from the *Regional Development Fund* for the implementation of this plan. Around € 2.4 billion a year at EU level will be spent on raising the quality of life in less developed areas through automation and robotization of agriculture, transition to a circular economy, digitalisation of agricultural production and use of renewable energy sources, better transport connections, more accessible education and health services, investment in basic infrastructure and entrepreneurship development, encouraging large enterprises to invest, etc. (Hina, 2020) In addition to incentives to increase the attractiveness of rural areas for immigration, demographic policy should continue to stimulate birth rates which is being done in about 98 percent of Croatian cities, municipalities and counties (one of thirteen basic demographic measures at these levels) (SDUDM, 2020). Unfortunately, the Covid-19 pandemic, earthquakes and recession will encourage additional migration from rural areas to cities and abroad, and it seems that the problem of keeping young and educated people in rural areas,despite certain results, will not be solved without additional help from European funds and increased public funds for demographic renewal to a level above 3 percent of Croatian GDP. (Drljača, 2021)

If the depopulation of Croatian territory is stopped, the growth of sustainable production and food self-sufficiency would be helped by a strong revitalization of unused agricultural land. Experts suspect that about 1.5 million hectares of uncultivated and neglected agricultural land can be quickly converted to agricultural production due to high costs. (Lasić, 2021) While the condition of agricultural land is also bad, since only 6.7 percent of agricultural land has drainage, and it is considered that as much as 85 percent of the pipe drainage system is non-functional. (Grgić, 2020) For the needs of revitalization of unused land and irrigation in the future, a total of at least 5 billion kuna should be allocated, which without the use of EU funds can hardly be provided from domestic sources. The existing way of allocating agricultural land is also an obstacle to more efficient use of agricultural land. According to the valid rules from the Law on Agricultural Land, namely, those users who duly perform their obligations, products and investments may be left without long-term lease of land if they do not fit into the disposal programs and decisions of local self-government. The uncertainty and uncertain distribution of about 400,000 ha of state land for users often stems from land maximum being set too low (with large differences between local governments), which makes all previous investments in production development and employment on larger plots meaningless. Shredding production due to distribution to a large number of small local producers reduces the productivity of large production systems and their incentives, but this problem also affects many small, medium and large family farms. It is obvious that in the distribution of land, a balance needs to be found

between "social" agriculture advocated by the local self-government and the desire of farmers to reach the necessary larger areas and start significant investments. According to many, the new version of the law should abandon the logic of "shredding instead of consolidation" and allow the current professional and successful landowners to have an advantage in land allocation and continue the production and investment cycle without hindrance. On the other hand, the interests of strong agricultural entrepreneurs are losing social support due to the fact that many large concessionaires did not pay the rent or paid it less than family farms. Agrarian entrepreneurs see their chance in restarting consolidation, and agricultural policy with its implementation could begin to solve many other problems in agriculture. Land consolidation reduces the number of fragmented farms while increasing the average size of holdings, but unlike arondation, it also increases productivity, employment and population in rural areas, traffic connections with plots, hydromelioration, regulation of property issues as well as reduces land usurpation. In ecological terms, land consolidation is useful because it allows the use of less intensive production methods, but also harmful because it endangers the habitats of wild animal and plant species and reduces biodiversity. (Grgić et alt., 2016, 534-535) However, land consolidation in Croatia, where in 2018 the average agricultural area is 7.2 ha and divided into 8.6 plots, has been progressing very slowly for decades due to dubious solutions in the existing Law on consolidation from 2015, high implementation costs, a large number of co-owners of land who do not have an interest in participation in these processes, weak control over the use of allocated land, lack of a mechanism for forced sale of uncultivated and abandoned land, etc. (Grgić, 2020). Due to all of the issues mentioned above, it is not surprising that the World Bank in its analysis of Croatian agriculture concluded: "Effective land management and mobilization of agricultural land for investment in Croatia is currently limited by fragmentation of institutions, sectoral land use policies and spatial planning, multiple legal regimes land and limited ownership, weaker implementation of contractual obligations, unclear land categorization rules, and incomplete and outdated land management systems. The disposal of state land suffers from inefficient and lengthy administrative procedures, mainly due to the inconsistency of the cadastre and land registers." (Smarter, 2020, 1-5).

Current agricultural policy must soon respond to the dissatisfaction of farmers who justifiably seek to amend the Law on Communal Economy, according to which independent decision-making of local self-government leads to high utility bills that burden business. For some farmers, these costs are already 18 percent, which is more than the cost of workers or energy. (HKG, 2021)

Achieving food self-sufficiency, food security and food security of the population cannot be achieved without raising productivity by area and / or quantity of product per employee. It seems that this could be achieved by rapidly introducing changes to existing coupled aid from the *Direct Payments Program* and the *State Aid Program for extremely sensitive sectors*. In the future, farmers will have to prove increased results with records and appropriate invoices, otherwise they will be left without part of the support. Due to the practice of "non-productive aid", agriculture has already become partly a social category related to the race for various incentives and has remained unproductive and uncompetitive. (Svjetska banka, 2019, 14-16) On the other hand, seven percent of the largest producers collect 40 percent of state aid, and it is clear that major financial and political interests are defended through politics and lobbying. (Lasić, 2021) Linking aid to successful and provable production does not mean abolishing the system of aid and financing with European money, and estimates suggest that 4.5 billion euros will be available from the next EU financial framework for the development of Croatian agriculture. (Rak Šajn, 2021) Unfortunately, Croatia lags far behind in the withdrawal of European funds for rural development, only six countries are worse, and the deadline for the absorption of two thirds of previously secured funds expires in two years.

Assistance to family farms in the pandemic-recession crisis was delayed and only after a few months the *Agency for Payments in Agriculture, Fisheries and Rural Development* announced tenders for grants (from the *European Agricultural Fund* and the *European Maritime and Fisheries Fund*) to mitigate the consequences of the crisis. (Rački-Kristić, 2021) In 2018, 157,394 agricultural holdings were registered in Croatia, and among them, due to the recession and European "green" reforms it is especially necessary to protect small and medium-sized family farms that find it difficult to withstand competition from large market competitors. Regardless of the debate over whether small and medium-sized family farms are a potent or limiting factor in raising production and competitiveness and whether the total funds allocated to agriculture are too large or insufficient, the funds paid to Croatian farmers in 2020 amount to almost HRK 7 billion (20 percent more than in 2019, with 5 and a half billion from European funds, which is an increase of 23 percent compared to 2019) (Rački-Kristić, 2021) should not be reduced in the future but combined with many other non-monetary measures to help domestic agriculture and farmers. These measures are applied in various forms in a number of countries despite the fact that hidden aid is sometimes prohibited in principle. Together with solving previously described structural problems in agriculture, adapting to the "European Green Plan", "Field to Table" strategy and advocating for the digitalisation of agricultural production and business can lead to a substantial turnaround in the agri-food sector. Changes will occur after the agrarian policy adopts and implements measures such as differential lower VAT rates for raw materials and finished products, subsidizing energy sources, especially those from renewable sources, timely and regular payment of subsidies, easier availability of banks and insurance companies for farmers, optional membership in the Croatian Chamber of Commerce and the Croatian Chamber of Agriculture, simplified and accelerated procedures for obtaining aid (often introduced outside EU rules), stronger absorption of EU funds and establishment of an agrarian bank, strengthening cooperatives and expanding the number of producer organizations, increasing aid for growing protected and native breeds, revitalization of extensive livestock in mountainous areas (Lasić, 2021), digitalization of administration, necessary inclusion of domestic food products in the system of public and state procurement (for public institutions and institutions the value in 2020 for food was about 170 million kuna) regardless of possible non-competitive prices (but with a specification on local origin and food quality), strengthening the fight against dumping prices in retail chains and imports of substandard food (through a change in the *Law on Prohibition of Unfair Commercial Practices in the Food Supply Chain*), increased domestic food sales through online sales and the establishment of shops in cities selling only domestic products, increasing funding for scientific research and the application of new alternative and non-invasive environmental methods and innovative means of protecting plants and animals from pests (e.g. environmental pesticides), strengthening synergies between the agri-food, tourism and catering sectors, which in addition to stimulating production facilitates supply in crisis situations, exempting caterers and hoteliers from paying income tax in accordance with the purchase of domestic products, regular checking and replenishment of inventories, information and education of domestic producers on the purpose and goals of the "green" transition in agriculture and consumers to buy domestic food because of its quality and multiplicative effect on domestic production ("food patriotism"), promoting nutritionally better nutrition of children and adults, reducing waste and increasing donated food, increasing food sales through markets (today only about 5 percent of total trade) and the reduction of the gray zone of sale and resale of food ("without invoice"), a clear commitment of the legislator in the *Law on Seeds, Planting Material and Recognition of Agricultural Plant Varieties* on farmer's right to use uninfected and quality seeds that were produced by the farmers themselves (so-called "Tavanuša") and the provision of assistance to producers by the Ministry of Agriculture to preserve indigenous domestic varieties and biodiversityas well as financial sustainability of small family farms, etc.

5. Concluding remarks

In context of public health, economic and social crisis, the analysis clearly showed all structural deficiencies and problems of the agri-food sector, especially insufficient contribution to the country's food self-sufficiency, strong dependence on imports and insecure global food supply chains as well as the burden of aging and declining active farmers. For a long time, Croatian agriculture has not fulfilled its basic functions of sufficient food production in relation to domestic demand, providing raw materials for food and other industries, stronger assistance in the development of tourism and competitive agricultural production for export. At the same time, agricultural production and processing faced the challenges of adapting and implementing the goals of the EU's "Field to Table" action plan - to make food systems fair, healthy and environmentally-friendly, as main part of a broader "European Green Plan" development strategy. In the circumstances of environmental and health crises, repetitive production-transport locks, increased aspirations of nations towards autarky and changes in business and consumer models, it is not easy to simultaneously reorganize and strengthen a more efficient, crisis-resistant and environmentally adequate national agri-food system.

As public spending on agriculture grows, a further decline in production, growing dependence on imports of most crops and neglect of rural areas/population would further dangerously jeopardize economic, political-security, social and health national interests. Therefore, in the conditions of double-bottomed recession, agri-food policy makers should resolutely and strongly focus on the adoption and implementation of plans, programs and measures to increase the production of safe and nutritious food, resource efficiency, reorientation of agri-food industry to export, achieving food self-sufficiency in all branches of agricultural production, ensuring sufficient food supplies and security of supply. Designing, coordinating, implementing, monitoring and evaluating the results of the implementation of the measures mentioned in the previous part of the paper, especially in the context of implementing development measures from European strategies for "green" recovery and digital transformation of all parts of the economy including agriculture, will depend on successful removal of many existing obstacles such as lack of strategic thinking about agricultural development with clearly defined vision and goals, measures, carriers and deadlines, insufficient level of education of producers for the application of new production technologies and organizational and business solutions, non-complementarity of existing strategies, plans and programs, neglect of land irrigation and drainage systems, disorder of land registers, slow consolidation, inconsistent implementation of laws and non-transparency in monitoring of implementation, conflicts between small and large producers, plant farmers and livestock farmers and between central and local decision-makers, the issue of the model of privatization of state land until the expiration of the moratorium on land acquisition by EU citizens in 2023, underdeveloped lending to farmers and promoting exporters, unfair distribution of direct aid and non-transparent supervision and control of subsidies granted, administrative barriers, exposure of agricultural policy to the interests of agribusiness, importers and policy, etc.

Further, the global and still unresolved economic and health crisis and the complex intertwining of economic, environmental, technological, social and political-legal issues make it impossible to provide unambiguous answers to certain issues related to the "green" and digital transformation of the agri-food system, while maintaining its efficiency. Planning and implementing reforms, for example, is hampered by the uncertainty of whether the transition to organic and less intensive agriculture will lead to declining yields, higher costs and lower incomes for small and medium farmers and will reduce their numbers and consequent failure to achieve "green" goals (eg conservation of biodiversity) set before small producers and rural areas. Furthermore, how will the meat industry be affected by a possible increase in taxes on the production and/or consumption of meat in order to reduce emissions of harmful gases and

other pollutants. There is also the question of whether stricter European rules on unfair trade practices can help domestic agriculture to resist more productive foreign competition and fight for more significant shares in the European market, etc.

Although problems and obstacles slowly being resolved and removed, reform interventions and adjustments are still necessary and in fact possible. Namely, the combined crisis shocks of the "Great Paralysis" are amortized by earlier good economic results and current indications of strong economic growth, expansionary fiscal and monetary policies of central banks (CNB and ECB), growing global demand for agricultural products and food prices, and the growing national consensus on the importance of a preserved environment, ecological and sustainable agricultural production, food sovereignty and a healthy diet in future turbulent turmoil strengthens the foundations of the reform. Optimism also supports better use of European budget funds (with an annual absorption of 2.5 billion euros), and approximately 24 billion euros over the next seven years (plus 6 billion euros from the previous period) (Šonje, 2021) through the use of a European recovery mechanism and new "green" funds should be used to a large extent for the reform of agricultural production and the inseparable revitalization of the food industry. The process of economic recovery is the optimal situation for investments in "green" agriculture, energy, transport, industry and science because, in the long run, it will contribute to strong economic growth, competitiveness and employment, but also environmental protection, public health and social welfare.

Although existing global food supplies are still sufficient, many countries around the world are deeply concerned about the continuity of agricultural production and sufficient food supply, and are looking for solutions between strengthening global integration and national isolation. At the same time, through the growth of food production, Croatia can become more strongly involved in international free trade in agricultural products and processed products. Through increased trade ties with others, Croatia will contribute to the diversification of global supply chains, the European Union's economic recovery and strengthening political security, but also to easier solutions to its own economic recovery, climate change adaptation and resilience to future public health and other possible "Great Paralysis".

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ASPECTS OF COVID-19 INFODEMIC AND ITS LEGAL CONSEQUENCES [1]

ABSTRACT

Formal education, transportation, socialization and other aspects of our lives have been affected by the 2019 coronavirus disease pandemic (COVID-19) and this has increased fear and anxiety in most people. Furthermore, lack of control, helplessness, concern about the absence of knowledge about COVID-19 and its negative impact on daily life are some of the reasons why people seek information about this disease. People often believe in the released information without adequate verification whether that information is true or false. However, nowadays, we very often encounter fake news while browsing social media. The main goal of fake news is to lead the reader to the wrong information for the purpose of damaging the personality rights of a person or entity or to profit. The infodemic and fake news have much in common, because one of the goals of fake news is to publish a large amount of misleading information and the infodemic is an overload of information. Both serve to confuse the average user who cannot interpret their truthfulness. Infodemic can often turn into infomania, a term used to describe people's tendency to obsessively check news on social media and the internet. This study has three goals: (1) to give a theoretical insight into the phenomenon of infodemic through the qualitative method of content analysis, (2) to explore students' attitudes towards infodemic concerning COVID-19 through the quantitative method of online survey which will reveal the most employed information sources and channels as well as the most retrieved topics about COVID-19 among students' population with a special emphasize of ways they check information reliability and (3) to explore, through the qualitative method of comparative analysis, the legal consequences of infodemic worldwide.

Keywords: *fake news, infodemic, pandemic, students.*

1. Introduction

As the coronavirus pandemic spreads across the world, it is causing many natural human reactions such as concern, fear anxiety and threat perception of an unrealistic intensity (Kulkarni, Prabhu, Dumar, Ramraj 2020, 264; Arora, Jha, Alat, Das, 2020), all of which are reactions to the uncertain situation that everyone finds themselves in.[2] However, while browsing social media for information we very often encounter fake news. The main goal of fake news is to lead the reader to the wrong conclusion. The fake news can destabilize society and have dangerous or even fatal consequences. The infodemic and fake news have much in common, because one of the goals of fake news is to publish a large amount of misleading information to confuse the average user. Infodemic can be defined as information overload of true and false information which obstruct people to find reliable information (Pan, Zhang, 2020). Infodemic can often turn into infomania, a term used to describe people's tendency to obsessively check news on social media and the internet. Infodemic persons have constant need to get more new information to fulfill their uncertainty about actual events (Jakovljević et al., 2020).

„The human race spent most of the nineteenth and twentieth centuries in the fight to ensure freedom of reporting for the media. It seems that we will spend the twenty-first century in the fight with the media to use that freedom responsibly,, (Crnić, Matić, 2008, 377). This quote seems to be the best to describe the sudden rise in the conflict of personality rights and freedom of expression. Publishing fake news can lead to misdemeanour charges,[3] criminal charges and civil lawsuits[4] (for more see: Mamak, 2021). The subject of interest in this paper is of a civil law nature, ie. resolving media conflicts of interest between the personality rights of natural and legal persons on the one hand and media freedom of expression on the other. Namely, the question is whether the expansion of media freedoms is accompanied by a sufficient level of professional standards and responsibility for the publicly announced word. In some cases, it is about objective and professional reporting, and in others, there is manipulation with facts or false information that was published, which can consequently destroy one's family life and social reputation (Malović, 2004, 35). Through the analysis of national regulations and regulations and case law of European Union we will examine the legal consequences of false reporting. In the end, we come to the conclusion that it is necessary to make changes in national and EU regulations because the existing ones are too broad and vague.

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[2] WHO, Mental health and psychological resilience during the COVID-19 pandemic, 27 March 2020., https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/3/mental-health-and-psychological-resilience-during-the-covid-19-pandemic (accessed 5 march 2021).

[3] In the Republic of Croatia, the provision of Art. 16 of the Law on misdemeanors against public order and peace stipulates that a person who make or spreads false news that disturbs the peace and tranquility of citizens commits a misdemeanor. The characteristics of the said violation explained back in 1993 the Supreme Court of the Republic of Croatia (Judgment of the Supreme Court of the Republic of Croatia Psz 114/1993-5 of 15 July 1993). In that judgement, the Supreme Court states "The untruthfulness of the allegations is presumed according to the principle *quisquis praesumitur bonus* (everyone is considered good) so if someone claims something negative about someone, they need to prove it. Thus, in the case of violations of the applicable regulation instead of the principle *in dubio pro reo*, applies the opposite principle *in dubio contra reum*, i.e., the claim is assumed to be untrue.

[4] Criminal liability in the Republic of Croatia is prescribed by the Criminal Code (criminal offense of false alarm under Article 316) but only in the event if falsely alert public services (eg. police) that ensure order or provide assistance about an event that requires urgent action and services. It can be applied, for example, in the case of a false report of a violation of self-isolation, but not due to the mere dissemination of information on social networks.

2. Review of literature

About the legal consequences of false reporting, ie liability for damage, we will most often speak when the right to express oneself is exercised to the detriment of the personality rights - honor, reputation, privacy or identity of a natural or legal person (Alaburić, 2006, 7). The damage which fake news can cause to the personality right of a person or entity is sometimes irreversible, even after we prove that they are fake. The boundaries where one right begins and another ends will often vary from case to case, and the law will act primarily to protect various forms of personality rights that are jeopardized by false information (Stratford, 2002, 17). In the context of publishing various false medical news, the consequences could be even for human health and physical integrity (Orso, D., Federici, N., Copetti, R., Vetrugno, L., & Bove, T., 2020, 327). In the past, the effects of printed libel have faded over time, however, the emergence and popularization of social networks has further facilitated the dissemination of information. With online defamation, offensive content, after it is published, almost never loses effect (Johnson, N. L.; Johnson, D. L.; Tweed, Smolla, 2019, 10).

In the Republic of Croatia, the personality rights are guaranteed by the Constitution of the Republic of Croatia: "Respect for and legal protection of each person's private and family life, dignity, and reputation shall be guaranteed" (Article 35. of Constitution). There are also several regulations that contain provisions that sanction the violation of this rights. As defined in Article 19. of the Croatian Civil Obligations Act personality rights include the right to life, physical and mental health, reputation, honor, dignity, name, privacy, freedom, etc. If this rights were violated by the media as a *lex specialis* the most relevant are Media Law (ML) and Electronic Media Law (EML).

In European Union freedom of expression is protected in Article 11/1[5] of the Charter of Fundamental Rights of the European Union. The Court of Justice of the European Union (CJEU, Court) has stressed the significance of this right and its application to all information. Any limitations to the freedom of expression must thus be interpreted "restrictively" (*Connolly v. Commission*, par. 41.). In addition, any restriction "must be prescribed by legislative provisions which are worded with sufficient precision to enable interested parties to regulate their conduct" (*Connolly v. Commission*, par. 42). A legal act of the European Union which superficially regulates the issue of the rights and obligations of Internet service providers is Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (E-Commerce Directive). Under this Directive, the primary responsibility for published false information is on the user and the secondary on the service providers (Sartor, 2017, 4). Secondary responsibility means that the service provider is not responsible for the information it stores, under "condition that the provider does not have actual knowledge of illegal activity... and is not aware of facts or circumstances from which the illegal activity or information is apparent; or the provider, upon obtaining such knowledge or awareness, acts expeditiously to remove or to disable access to the information" (Article 14 of the E-Commerce Directive). What is also important to emphasize is that service providers may not impose a general duty to monitor information that they transmit or store (Article 15/1 of the E-Commerce Directive). Recently the Court of Justice of the European Union (CJEU, Court) has issued several judgments related to the control of information on the Internet,[6] of which, for the purposes of

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[5] "Everyone has the right to freedom of expression. This right shall include freedom to hold opinions and to receive and impart entormation and ideas without interference by public authority and regardless of frontiers" (Art. 11. of the Charter of Fundamental Rights of the European Union).

[6] C-131/12, Google Spain SL and Google Inc. v Agencia Española de Protección de Datos (AEPD) and Mario Costeja González, judgment of 13 May 2014.; C-507/17, Google Inc v Commision nationale de l"informatique et

this paper, the most significant is the recent judgment in *Case C-18/18 Eva Glawischnig-Piesczek v Facebook Ireland Limited* concerned the impact of the E-Commerce Directive. The impact and significance of judgments of the CJEU on the legal systems of EU Member States stem from the fundamental objective of preliminary rulings before the CJEU, which is to ensure uniform and harmonized interpretation of European Union law (Arnull, 2006, 97).[7] Legal doctrine has established that this procedure before the Court has played a central role in the development of the Union legal system (For more see: De la Mare, Donnelly, 2011, 363). Besides, it is considered that this procedure with its uniform interpretations has contributed to the harmonization of Union law (Broberg, Fenger, 2010, 2). Under European Union law, the national courts of the Member States are not only competent but often obliged to refer a preliminary question to the Court (for more see: Craig, De Búrca, 2011, 478; Šago, 2015, 381), which in doctrine used to provoke critics (Rasmussen, 2000, 1108). However, the existence of an obligation, and not just the possibility to refer a preliminary question in cases where a problem of interpretation arises, has resulted in the frequent involvement of the CJEU in national cases and the great influence of its judgments and interpretations on them.

3. Methodology

This study has three goals: (1) to give a theoretical insight into the phenomenon of infodemic through the qualitative method of content analysis, (2) to explore students' attitudes towards infodemic concerning COVID-19 through the quantitative method of online survey which will reveal the most employed information sources and channels as well as the most retrieved topics about COVID-19 among students' population with a special emphasize of ways they check information reliability and (3) to explore, through the qualitative method of comparative analysis, the legal consequences of infodemic worldwide.

4. Results and discussion

4.1. Students' attitudes towards infodemic concerning COVID-19

This study had goal to explore students' attitudes towards infodemic concerning COVID-19 through the quantitative method of online survey. This research has been conducted in December of 2020 using an online questionnaire answered by 118 students from University of Josip Juraj Strossmayer in Osijek. First part of the questionnaire was about demographics and the second part was about students' perception of infodemic during COVID-19 pandemic. According students' gender, 96 students participated in the research were female (81.4%) and only 22 (18.6%) students participated in the research were male. According to the students' age, 39 (33.1%) students were in age group from 18 to 20 years old, only 8 (6.8%) students were in age group from 27 to 29 years old, 24 (20.3%) students were in age group from 24 to 26 years old and 14 (11.9%) students were older than 29 years old. Figure 1 shows the research results of the most employed information sources and channels among students regarding COVID-19 pandemic in a following order according to the frequencies: (1) commercial and local TV (Nova TV, RTL, N1, Slavonska TV etc., (2) newspaper internet portals, (3) national TV (HRT), (4) Faktograf.hr and (5) unofficial Facebook groups.

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des libertés (CNIL), judgment of 24 September 2019.; Case C-18/18 Eva Glawischnig-Piesczek v Facebook Ireland Limited, judgment of 3 October 2019.

[7] Under Article 267 of the Treaty on the Functioning of the European Union (hereinafter: TFEU), the Court of Justice of the European Union has the jurisdiction to give preliminary rulings concerning the interpretation of the Treaties and the validity and interpretation of acts of the institutions, bodies, offices or agencies of the Union.

Figure 1: The most employed information sources and channels among students regarding COVID-19 pandemic
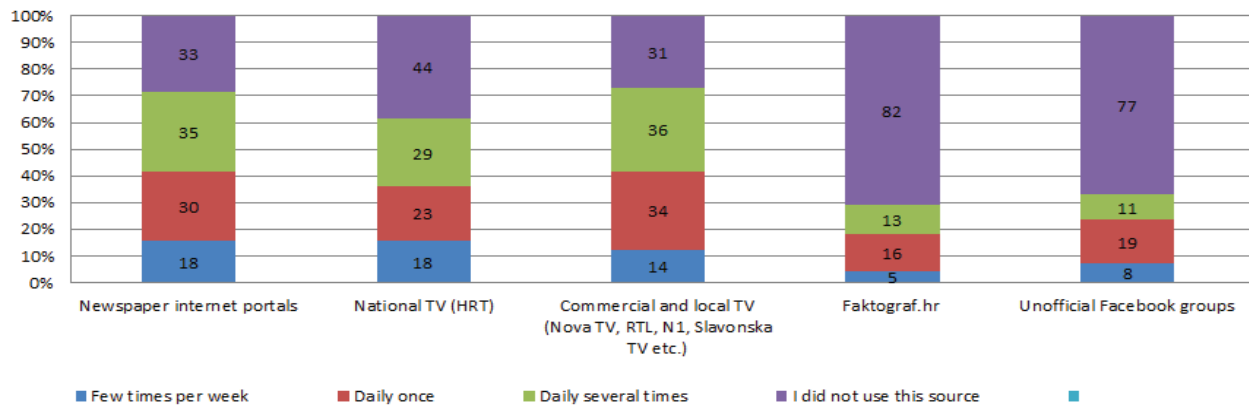
Source: Authors

Figure 2 shows the most retrieved topics among students regarding COVID-19 pandemic in a following order: (1) symptoms of COVID-19 infection, (2) reasons of COVID-19 pandemic, (3) prevention of COVID-19 infection, (4) vaccine against COVID-19 infection and (5) origin of COVID-19 virus.

Figure 2: The most retrieved topics among students regarding COVID-19 pandemic
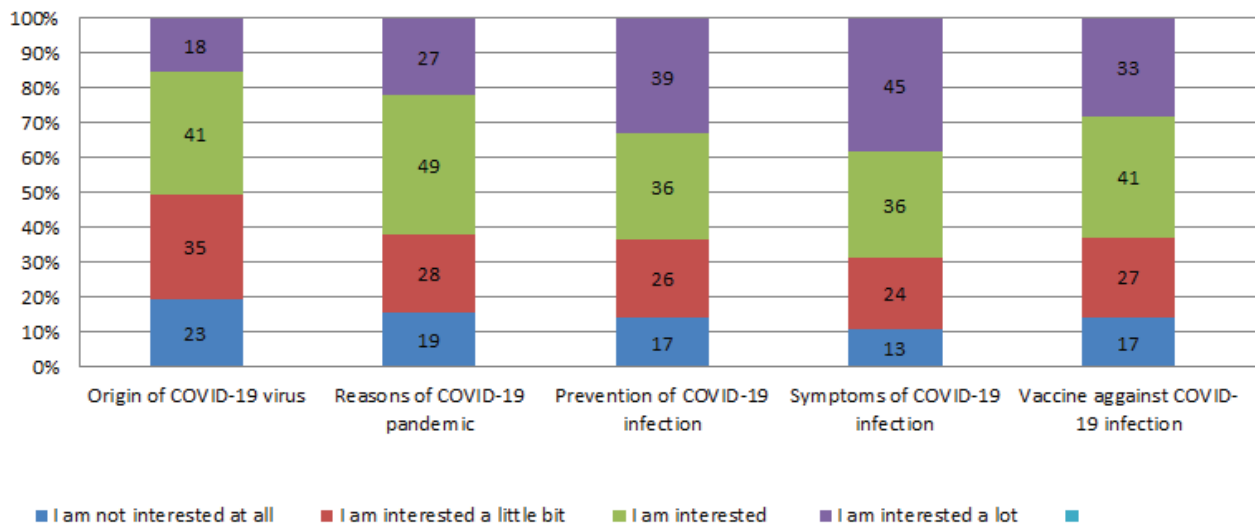
Source: Authors

Figure 3 shows students' trust in media regarding different topics. Only about 30% of students mostly believe and completely believe media about: (1) available vaccines against COVID-19, (2) size of the pandemic in Croatia, (3) size of the pandemic in the world, (4) COVID-19 death rate and at the last place students mostly believe and completely believe media about (5) vaccine side effects.

Figure 3: The trust in media regarding topics: size of the pandemic in Croatia and in the world, COVID-19 death rate, available vaccines against COVID-19 and vaccine side effects
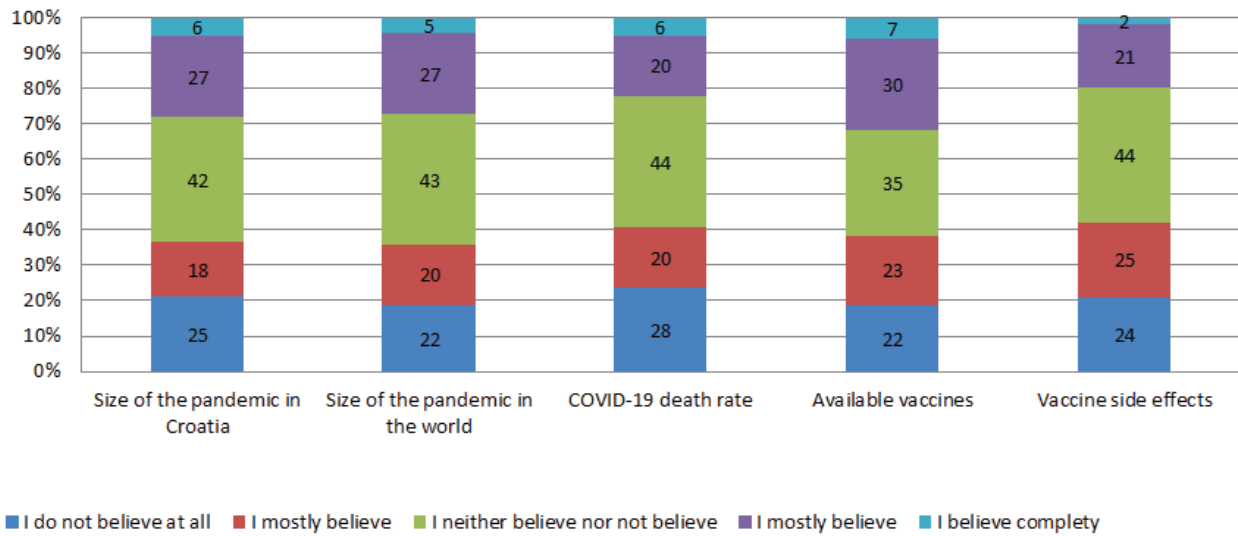
Source: Authors

Figure 4 also shows students' trust in media regarding different topics. Between 20% to 40% of students mostly believe and completely believe media about: (1) symptoms of COVID-19 infection, (2) prevention of COVID-19 infection, (3) COVID-19 virus origin, (4) treatment and vaccine for COVID-19 infection and at the last place students mostly believe and completely believe media about (5) COVID-19 pandemic origin.

Figure 4: The trust in media regarding topics: origin of COVID-19 virus and pandemic, prevention and symptoms of COVID-19 infection and treatment and vaccine for COVID-19 infection

Source: Authors

Figure 5 shows students' trust in scientists and doctors regarding mentioned topics. The majority of students, about 60 % of students, mostly believe and completely believe scientists and doctors about topics such as size of the pandemic in Croatia and in the world, COVID-19 death rate, available vaccines against COVID-19 and at the last place students mostly believe and completely believe scientists and doctors about vaccine side effects.

Figure 5: The trust in scientists and doctors regarding topics: size of the pandemic in Croatia and in the world, COVID-19 death rate, available vaccines against COVID-19 and vaccine side effects

Source: Authors

Figure 6 also shows students' trust in scientists and doctors regarding mentioned topics. The majority of students, about 60 % of students, mostly believe and completely believe scientists and doctors about topics such as origin of COVID-19 virus and pandemic, prevention and

symptoms of COVID-19 infection and at the last place students mostly believe and completely believe in scientists and doctors about treatment and vaccine for COVID-19 infection.

Figure 6: The trust in scientists and doctors regarding topics: origin of COVID-19 virus and pandemic, prevention and symptoms of COVID-19 infection and treatment and vaccine for COVID-19 infection
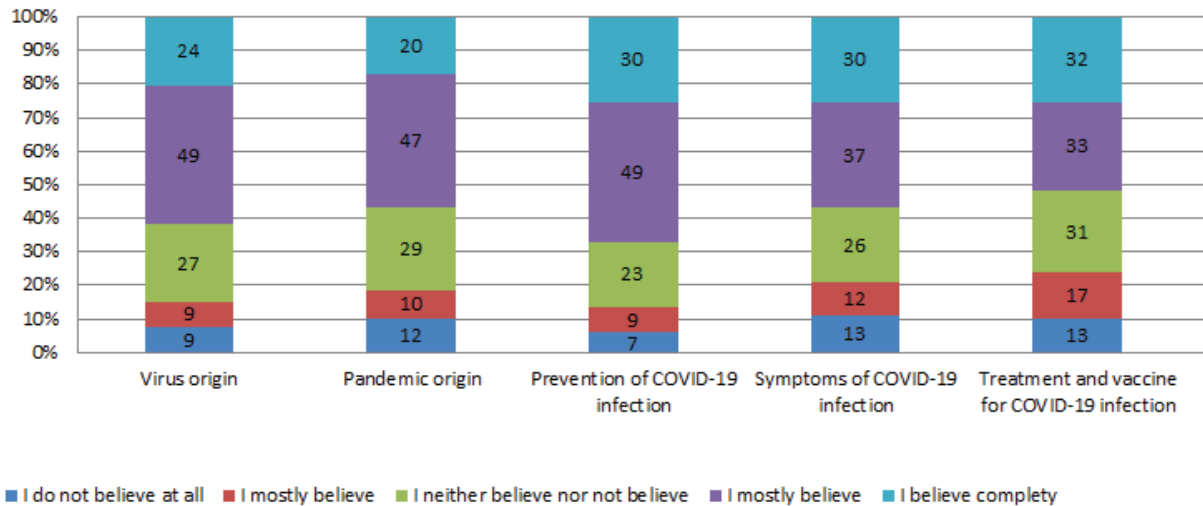
Source: Authors

Figure 7 shows students' trust in official organizations (for example Croatian corona headquarter) regarding mentioned topics. Only about 20 % of students mostly believe and completely believe in official organizations (for example Croatian corona headquarter) about topics such as size of the pandemic in Croatia and in the world, COVID-19 death rate, available vaccines against COVID-19 and vaccine side effects.

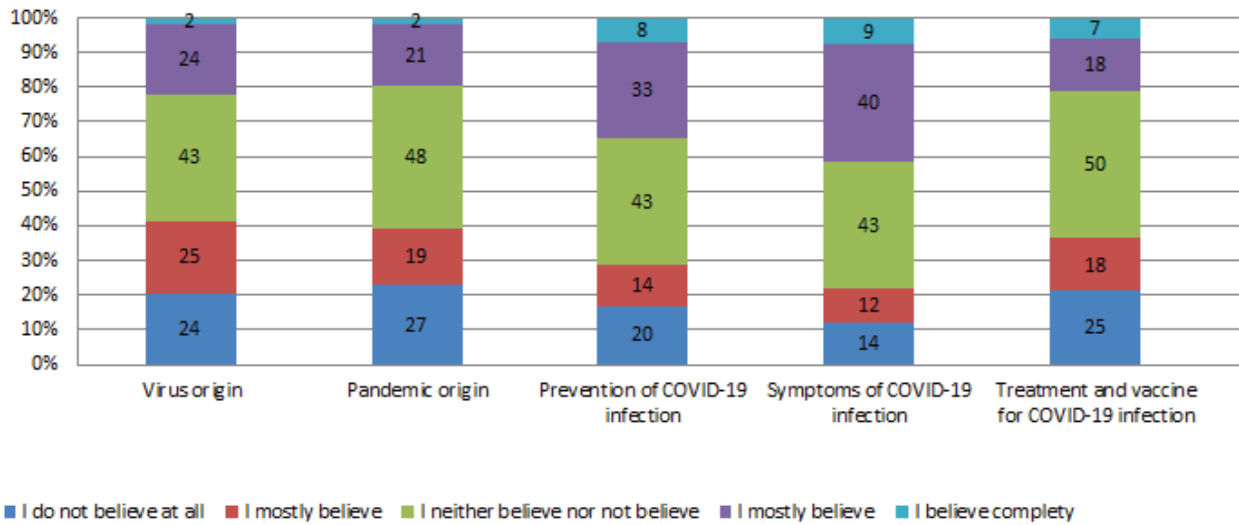**Figure 7:** The trust in official organizations (for example Croatian corona headquarter) regarding topics: size of the pandemic in Croatia and in the world, COVID-19 death rate, available vaccines against COVID-19 and vaccine side effects
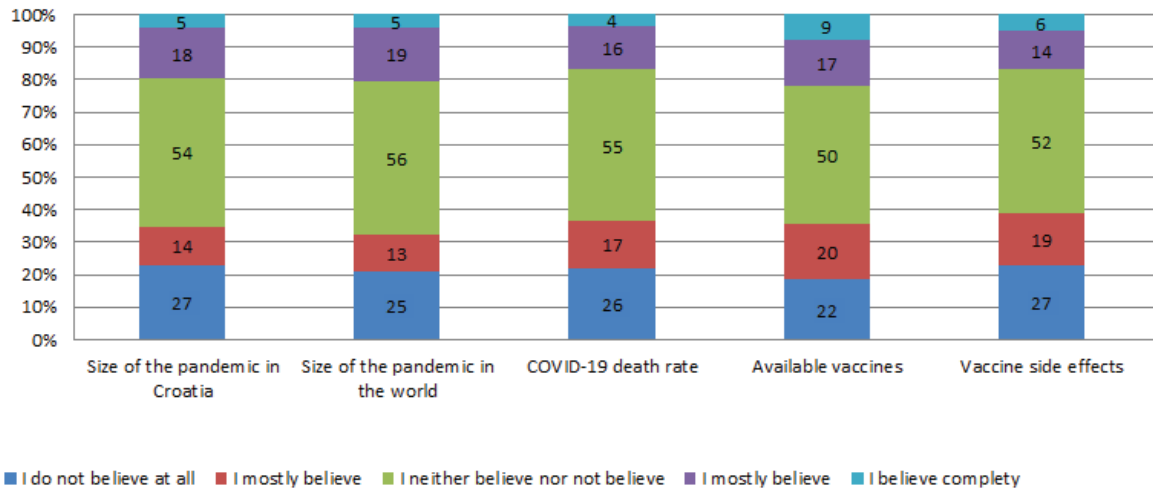
Source: Authors

Figure 8 also shows students' trust in official organizations (for example Croatian corona headquarter) regarding mentioned topics. Only about 30 % of students mostly believe and completely believe in official organizations (for example Croatian corona headquarter) about topics such as origin of COVID-19 virus and pandemic, prevention and symptoms of COVID-19 infection and treatment and vaccine for COVID-19 infection.

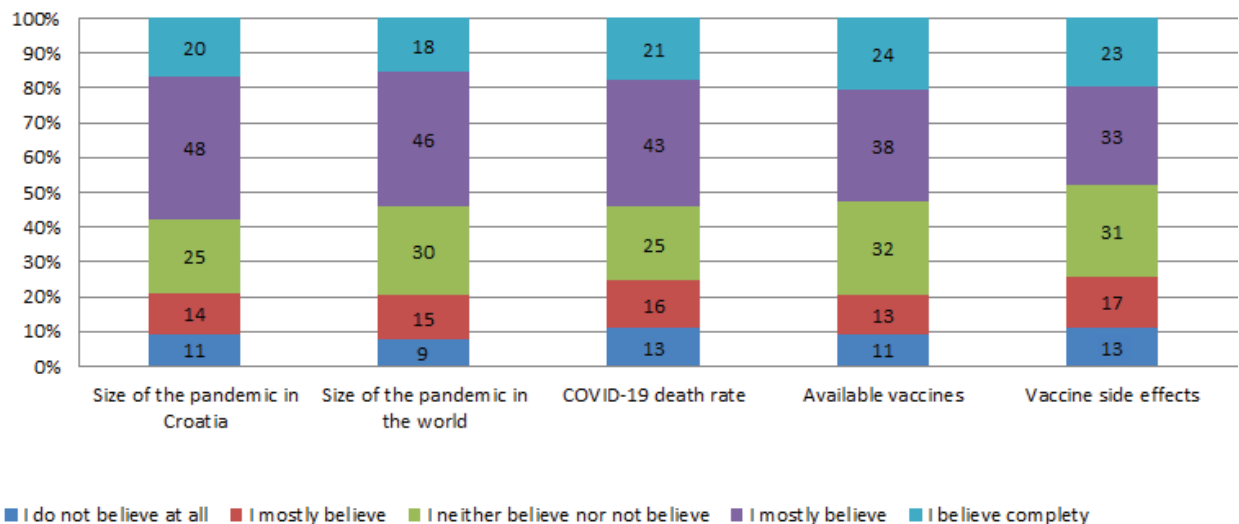**Figure 8:** The trust in official organizations (for example Croatian corona headquarter) regarding topics: origin of COVID-19 virus and pandemic, prevention and symptoms of COVID-19 infection and treatment and vaccine for COVID-19 infection
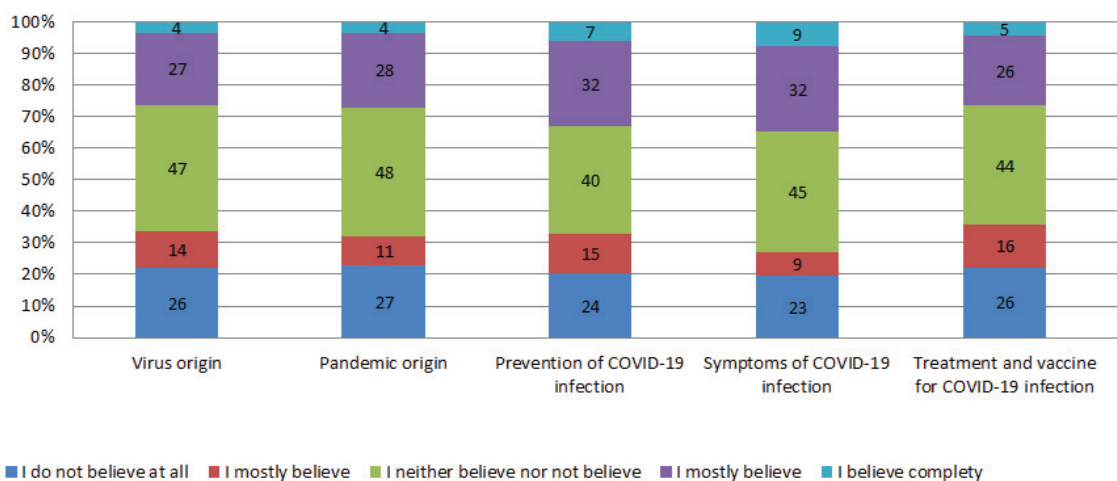
Source: Authors

Students were asked if they share articles on social networks without reading them first and 91.5% said they never do, while 7.7% said they do it sometimes. They were also asked if they report fake news on social media and 61.2% said they never do, 36.2% said they do it sometimes while the rest of the students always report fake news.

At Figure 9 can be seen the ways of checking information reliability regarding COVID-19 among students such as checking who is an author, checking education and working experience of an author, checking reputation of an author within professional community, checking reputation of the source of information and checking with expert (doctor, scientist etc.). The majority of students sometimes, often or always use these ways of checking information reliability regarding COVID-19.

Figure 9: Ways of checking information reliability regarding COVID-19 among students (first part)
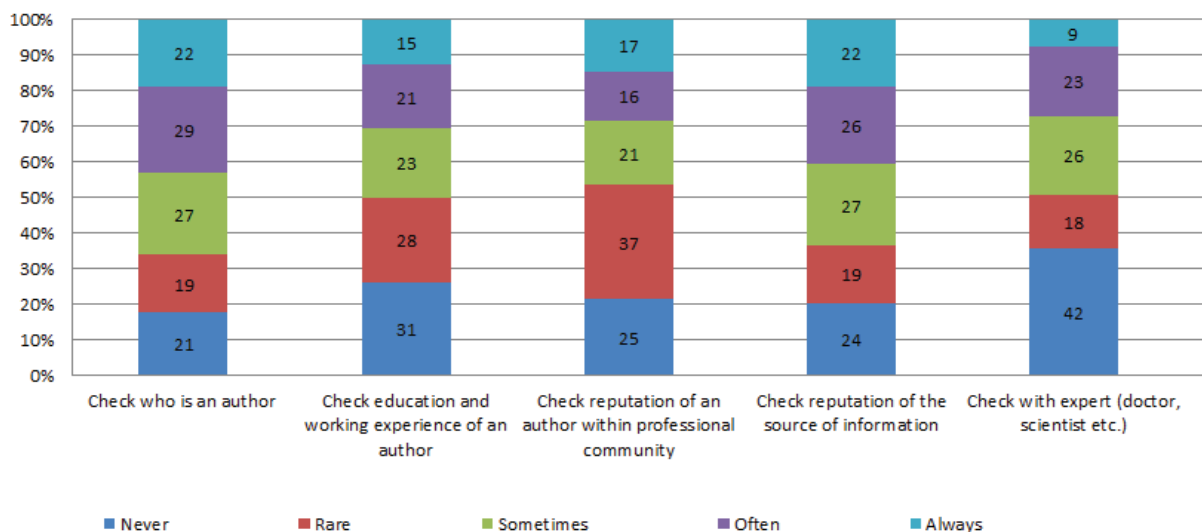
Source: Authors

At Figure 10 can also be seen the ways of checking information reliability regarding COVID-19 among students such as checking of the additional sources, checking of the style of writing (objective/subjective)**,** checking of the difference between facts and opinions**,** checking whether someone can earn money on it and checking is it a joke. The majority of students sometimes, often or always use these ways of checking information reliability regarding COVID-19.

Figure 10: Ways of checking information reliability regarding COVID-19 among students (second part)
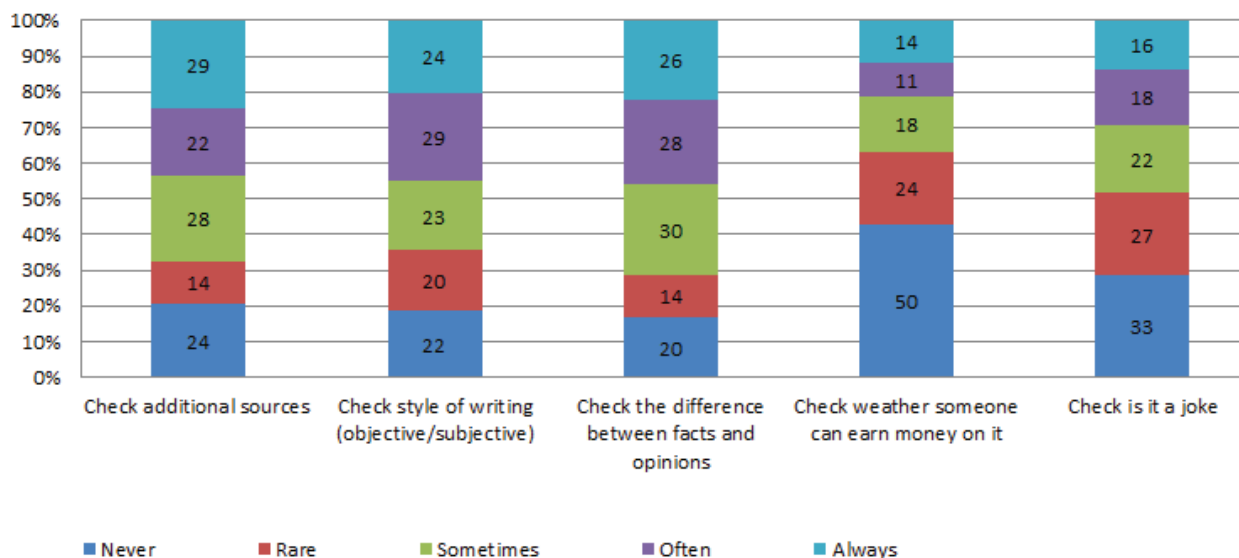
Source: Authors

4.2. Legal consequences of excessive disclosure of false information (fake news)

ML „regulates the preconditions for the exercise of principles of the freedom of the media, rights of journalists and other participants in public informing to the freedom of reporting and accessibility to public information, rights and obligations of publishers, publicity of ownership, the exercise of the right to a correction and response, the manner of distribution of the press, the manner of protection of market competition, and the rights and obligations of other legal and natural persons acting in the sphere of public informing" (Art. 1 of ML). Pursuant to the ML, the first step in the procedure of repairing damages due to violation of personality rights is to submit a request for correction and apology to the media that published the misinformation, within 30 days from the publication of the information. ML prescribes that the request should contain a response to the published information of the same nature and length as the published information, otherwise the media is not obliged to comply with the request for correction or apology (Art. 40 and 41 of ML). By submitting a request for correction and apology, in accordance with Article 22/2 of the ML, the procedural prerequisite for claiming damages before the competent court is fulfilled. EML „regulates the rights, obligations and responsibilities of legal and natural persons that provide audio and audiovisual media services and services of electronic publications by electronic communication networks, and the interest of the Republic of Croatia in the field of electronic media" (Article 1 of EML). The currently valid EML in Croatia has been in force since 2013, and now its amendments are being drafted. The new EML, with the adaptation of certain provisions to EU directives, should introduce more transparency in media ownership, more precisely regulates the obligations of publishers, protects market competition and the sharing of video content on-demand and electronic publications. However, the topic that was most discussed was the issue of the content generated by users in electronic publications, ie the comments of readers on the Internet. This issue is regulated by the proposed Article 93. of the EML. According to that article, providers of electronic publications would be responsible for the content of comments written by users,[8] and

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[8] „The electronic publication provider is responsible for all content published on the electronic publication, including user-generated content" (Art. 93/3. of the Proposal of Electronic Media Law).

in case they do not moderate that content adequately, they could get a warning or have to pay high amounts of money as a punishment. The question that arises is whether such an arrangement of responsibility suppresses freedom of speech and whether is responsibility unfairly transferred to the owner of the electronic media instead of to the person who wrote certain offensive posts. Due to the fear of the provider of electronic publications from liability, in some media is stated that such changes could lead to the abolition of the right of readers to publish comments.[9] In addition to protecting the personality rights of individuals, the Constitution explicitly prohibits censorship and states that the media have the right to freedom of reporting and access to information (arg. ex. Art. 38 of the Constitution). However, as the current EML does not contain clear rules regarding the blocking, filtering and removal of content and services on the Internet, especially regarding the role and responsibilities of regulatory agencies and the obligations of operators, it is certainly necessary to balance these conflicting rights and work on changes of the national regulations (Bodul, 2020).

European Union legislation currently does not contain specific regulations against false news. However, a number of incidents of disinformation around the world, resulted in the enactment of the EU Action Plan Against Disinformation. Action Plan is a based on modest soft law and self-regulation (Kouroutakis, 2020).[10] In addition, a Proposal for a Regulation of the European Parliament and of the Council on a single market for digital services (Digital Services Act) and amending Directive 2000/31/EC has recently been made.

A judgment that could have significant implications on the legislation of the Member States of the European Union concerning the protection of users against defamatory content on social networks is the aforementioned judgment delivered in the *case C-18/18 Eva Glawischnig-Piesczek v Facebook Ireland Limited.* As the provisions of the E-Commerce Directive governing the legal framework applicable to users and service providers in the EU are quite broad, before this judgment it was not entirely clear which publications providers must delete and to what territorial extent. The Directive does not specify what exactly monitor obligations in a particular case for illegal activities entail so the boundary between the duty of care and general supervision is not clear (for more see: Valcke, Kuczerawy, Ombelet, 2016). Ultimately, this will depend on national courts balancing between fundamental rights (Harvey, 2019, 837). Increased surveillance of released informations is desirable, however, by doing it we should remain cautious because too much control could jeopardize the neutral status of service providers (Kuczerawy, 2019, 142; Rathore, Farooq, 2020, 162) which could have far-reaching consequences for free expression and access to information for Internet intermediaries and also for Internet users (Knol Radoja, 2020, 9).

For protection against defamatory information, it is crucial that the Court in case *Eva Glawischnig-Piesczek v Facebook Ireland Limited* points out that any statement on social networks can be spread and shared at high speed, and the fact that a court ordered the removal of an original defamatory statement will often have almost no positive effects for the injured party, since often such a publication with minimal changes would be further shared on social network (*Eva Glawischnig-Piesczek v Facebook Ireland Limited*, par. 36). Therefore, for an injunction to prevent an illegal act, it must be able to be extended to information that has been formulated in a slightly different way. It is important that the data include certain elements such as the name of the person, the circumstances in which the violation was determined, and the content equivalent to the content affirmed illegal (*Eva Glawischnig-Piesczek v Facebook*

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[9] Udruga novinskih izdavača protiv prijedloga zakona o el.medijima: Odgovornost izdavača je problem, Jutarnji list, 20 November 2020.,
https://www.jutarnji.hr/vijesti/hrvatska/udruga-novinskih-izdavaca-protiv-prijedloga-zakona-o-el-medijima-odgovornost-izdavaca-je-problem-15006345, (accessed 14 January 2021).
[10] Also see: Tackling online disinformation, retrived 29 January 2021 from https://ec.europa.eu/digital-single-market/en/tackling-online-disinformation.

Ireland Limited, par. 41, 45). However, either with this decision we did not get concrete parameters, the Court gave us only a general provision of very wide scope. Still, the confirmation that the national court has the right to seek the removal of content on a global basis (*Eva Glawischnig-Piesczek v Facebook Ireland Limited*, par. 51, 52) indicates that the Court understands the limitations and unfairness of the solution when social networks restrict access to defamatory content only in a particular country.

5. Conclusion

The phenomenon of infodemic can be defined as information overload of true and false information which obstruct people to find reliable information. Within COVID-19 pandemic encountered also the infodemic regarding COVID-19. This study had goal to explore students' attitudes towards infodemic concerning COVID-19 which revealed the most employed information sources and channels as well as the most retrieved topics about COVID-19 among students' population with a special emphasize of ways they check information reliability. The most employed information sources and channels among students regarding COVID-19 pandemic in a following order according to the frequencies were: (1) commercial and local TV (Nova TV, RTL, N1, Slavonska TV etc., (2) newspaper internet portals, (3) national TV (HRT), (4) Faktograf.hr and (5) unofficial Facebook groups. The most retrieved topics among students regarding COVID-19 pandemic in a following order were: (1) symptoms of COVID-19 infection, (2) reasons of COVID-19 pandemic, (3) prevention of COVID-19 infection, (4) vaccine against COVID-19 infection and (5) origin of COVID-19 virus. The majority of students, about 60 % of students, mostly believe and completely believe scientists and doctors about topics in relation with COVID-19. Between 20% to 40% of students mostly believe and completely believe media about topics in relation with COVID-19. Between 20% to 30 % of students mostly believe and completely believe in official organizations (for example Croatian corona headquarter) about topics in relation with COVID-19. Students were asked if they share articles on social networks without reading them first and 91.5% said they never do, while 7.7% said they do it sometimes. They were also asked if they report fake news on social media and 61.2% said they never do, 36.2% said they do it sometimes while the rest of the students always report fake news. The majority of students who participated in the research used following ways of checking information reliability regarding COVID-19: checking who is an author, checking education and working experience of an author, checking reputation of an author within professional community, checking reputation of the source of information and checking with an expert (doctor, scientist etc.), checking of the additional sources, checking of the style of writing (objective/subjective)**,** checking of the difference between facts and opinions**,** checking whether someone can earn money on it and checking is it a joke. According to the research results it can be concluded that students had satisfying level of information literacy to cope against infodemic.

Regarding the legal consequences of infodemic worldwide it was conducted a comparative analysis between regulations in the Republic of Croatia and regulations of the European Union. Having in mind the expressed views of the Court of Justice of the European Union, as well as the intentions of the domestic legislator to amend the current regulation on electronic media, we can see that the obvious legal consequences of infodemic worldwide are the intentions to increase protection of persons to whom the (false) information relates and greater media control. Currently, in the Republic of Croatia, there are no regulations that specifically deal with content that is distributed via the Internet. Even at the European Union level, the currently existing legislative media framework does not fully meet the needs of the media reality. In the context of an increasingly pronounced infodemic, and especially in the context of a pandemic, increased

surveillance is desirable. However, we should remain cautious because too much control could have consequences for free expression and access to information on the Internet.

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THE IMPACT OF BUSINESS PERFORMANCE AT THE BEGINNING OF PANDEMIC COVID-19 ON STOCKS VOLATILITY IN CROATIA

ABSTRACT

The stocks are one of the most traded financial assets, whose price volatility often comes into the focus of various researches and the public. Despite of various and numerous researches, issues related to stock price volatility factors are still unanswered and unclear. Stocks price volatility is often a misunderstood term of investing. Volatility is the range of changes in stock prices over a period of time. If the price of a stock remains relatively stable, those stocks have low volatility, while stocks with high volatility have significant price changes over a period of time. Stocks price volatility is understood in two ways, some perceive it as an unnecessary risk, while others perceive it as an opportunity to earn. Previous research showed that significant and essential factor of stocks price volatility is business performance. But as we know during 2020, we have entered a "new normal" era which has changed the framework of life and business. The most influencing factor of 2020 was Covid-19 pandemic which marked whole real and business life. Unfortunately, Covid-19 pandemic has changed and influenced on a lot economic and business models, so, the aim of this research is to determine if the business performance correlate with the stock volatility within the "new normal" framework caused by Covid-19 pandemic. The data was taken from the web site of Zagreb Stock Exchange (www.zse.hr) and from Thomson Reuters database where we collected sample of 19 companies. Selected companies are included in the official stock index of the Zagreb Stock Exchange, Crobex. Sample periods cover second and third quarter of 2020 which we compare with second and third quarter of 2019. So the research objective was to explore if the Covid-19 pandemic by the "new normal" framework affected the impact of business performance on the stocks volatility.

Keywords: stocks, business performance, Covid-19 pandemic.

1. Introduction

Since the February 2020, the World has been gripped by Covid-19 pandemic. It started in the city of Wuhan in the Hubei province of China, but has spread rapidly across the world, resulting in health crisis and economic damage. Given the rapid spread of Covid-19, governments across

the World have adopted numerous measures to prevent the virus spread. These measures have resulted in disruption of economic activities visible through company closures, rising unemployment and others negative economic trends. Disruption of economic activities reduced business performance of companies and challenged governments to mitigate the decline of the economy and save thousands of entrepreneurs from bankruptcy and stop rise of unemployment. Negative impact of virus Covid-19 on economy is unquestionable, in this paper we explore if there is statistically significant impact of number of infected cases or number of deaths from Covid-19 in Croatia on business performance of companies and its stocks price volatility. Stocks price volatility usually is driven by political and economic factors, industry and sector factors and business performance (Investments, 2020). In this paper, we explore number of Covid-19 cases and deaths, and its impact on business performance measured with financial ratios and related stocks price volatility, of companies in Croatia included in the official stock index of the Zagreb Stock Exchange, Crobex as of 8th of September 2020. First, we observe data of selected companies for the second and third quarter of 2019 (period before pandemic) and then we observe data for second and third quarter of 2020 (period of pandemic). We researched all the collected data and tried to find if there was a statistically significant factors that impacted stocks volatilitiy measured with standard deviation of the mean price movement for observed period. In this paper we included four business performance ratios (NFD/EBITDA, changes in revenue, operating margin and current ratio), volume traded of a stock, if a stock has market maker or not and does any of the mentioned parameters has statistically significant impact on stocks price volatility in period before the pandemic and in the beginning of the pandemic (2 quarter of 2020)

2. Economic consequences of the Covid 19 at the beginning of the pandemic

Since the beginning of Covid-19 pandemic, it has impacted not only health of the people all over the world but has severely affected the global economy and financial markets (Pak A. , Adegboye, Adekunle, Rahman, McBryde, & Eisen, 2020). The International Monetary Fund estimates that global growth contraction for 2020 is at -3,5% (IMF, 2021). The World Bank indicates that a record 92.9% of the world's countries were in recession in 2020. This level is well above the previous high recorded in the Great Depression of 83.8%. It also exceeds the highs registered in 1914 at 70%, 1918-1921 at 70%, and 2008-09 at 61.2% (Hunt, 2020). Global financial markets have been heavily impacted by the effects of COVID-19 spread. As the numbers of cases started to increase globally, the world financial and oil markets significantly declined. Since the start of the 2020 to April 2020, leading U.S. and European stock market indices (the S&P 500, FTSE 100, CAC 40, and DAX) have lost a quarter of their value, with oil prices declining by more than 65% (Pak A. , Adegboye, Adekunle, Rahman, McBryde, & Eisen, 2020). Since 1929 world trade grew by an average 4.8% per annum, three times greater than the 1.6% annual growth in global real GDP. The Organization for Economic Cooperation and Development (OECD) estimates world trade volume will contract by a dramatic 15% in 2020, the largest drop since 1945-46 and the third largest fall since 1930 (Hunt, 2020). All mentioned data points show severity of Covid-19 effect on world economy.

Covid-19 has also resulted in unprecedented volatility in the U.S. financial markets (leading world financial markets). For example, CBOE Volatility Index (VIX)[1] surged over 80 on 16th March 2020, surpassing its 2008 record. Since the beginning of the year the S&P500 index dropped by 31.32% on March 23rd reaching its daily minimum equal to -12.77%. Other world

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[1] VIX is the real time implied volatility index that represents the market`s expectation of volatility in S&P500 stock index in USA

stock indices behaved similarly. Especially stock markets in European countries absorbed the extremal risk at the same time (Echaust & Malgorzata, 2020).

3. Stocks volatility during a pandemic

Volatility is critical to the operation of financial markets and can be described as a rate at which the price of a security increases or decreases for a given set of returns. It is measured by calculating the standard deviation of the annualized returns over a given period of time. For volatility we can say that it is measure of financial risk for financial assets and anyone participating in financial markets should pay attention to it. It is used in option pricing formula to measure oscilations in the returns of the underlying asstes. Few studies have established a link between the COVID-19 pandemic and financial market volatility. Before Covid-19 pandemic, there were few researches focused on the impact of pandemic such as sars and ebola on stock market performance (Baek, Mohanty, & Glambosky, 2020). Given the scale of the current pandemic, many researchers worldwide examined the impact of Covid-19 and a clear pattern emerged. In the paper (Ashraf, 2020) researchers showed using daily COVID-19 confirmed cases and deaths and stock market returns data from 64 countries over the period January 22, 2020 to April 17, 2020, that stock markets responded negatively to the growth in COVID-19 confirmed cases. That is, stock market returns declined as the number of confirmed cases increased. In their paper they found that negative market reaction was strong during early days of confirmed cases and then between 40 and 60 days after the initial confirmed cases. Paper from (Zaremba, Kizys, Aharon, & Demire, 2020) examines if government response to Covid-19 worldwide have impact on international stock market volatility. They document a significant increase in stock market volatility in countries where goverments take rigorous actions to slow the spread of Covid-19. The effect is driven particulary by the role information campaigns and cancellation of public events. Also, in paper from (Haroon & Rizvi, 2020) researchers analyze the relationship between sentiment genrated by Covid-19 related news and volatility of equity markets. They documented that individual economic sectors demonstrate that panic-laden news contributed to a greater extent to volatility in the sectors perceived to be most affected by coronavirus outbreak.
Based on research mentioned in this paper we can see that researchers have been exploring all kinds of factors that have impact on volatility of stock market.

4. Companies business performance ratios used in paper

In this part of paper, we are going to define and describe all the ratios which will be used in our paper.
The most used measure of volatility is the standard deviation. This metric reflects the average amount a stock's price has differed from the mean over a period of time. It is calculated by determining the mean price for the established period and then subtracting this figure from each price point. (Investopedia)
Volatility can also be maesured by beta. It is a metric, which measures a stock`s volatility relative to that of the broader market. A beta of 1 means the security has volatility that moves in direction of the market as a whole. If a beta for a stock is higher than 1, this means that a stock has higher volatility than broader market. For the purpose of this paper we took standard deviation, as a measure of stocks volatility.
Now we focus on business performance indicators. Net debt shows all financial liabilities of the company without all the money company has. It can be mathematically expressed in formula as follows:

$$Net\ financial\ debt = Short\ term\ debt + Long\ term\ debt - Cash\ and\ cash\ equivalents$$

EBITDA is abbreviation of Earnings Before Interest, Taxes, Depreciation, and Amortization and is a metric used as quick approximation of the cash flow company generates. EBITDA is important for investors because it removes effects on business performance related to capital structure, methods of depreciation and in some cases taxes.

The net financial debt to earnings before interest, taxes, depreciation, and amortization (EBITDA) ratio measures financial leverage and a company's ability to pay off its debt. Essentially, the net debt to EBITDA ratio (debt/EBITDA) gives an indication as to how long (in how many years will be NFD be repaid) a company would need to operate at its current level to pay off all its debt. The ratio is commonly used by credit rating agencies to determine the probability of a company defaulting on its debt. (CFI, n.d.)

$$NFD\ to\ EBITDA\ ratio = \frac{NFD}{EBITDA}$$

Beside (NFD)/(EBITDA) in our paper we explore changes in operating margin and current liquidity ratio. Next, we will briefly describe these ratios.
Operating margin is one of the most used profitability ratios. It measures revenue after covering operating and non-operating expenses of a business. Operating earnings show how much of the sales stays for company (for covering financial expenses and net income) when all operating expenses are paid off. Operating earnings represent the same as earnings before interest and taxes (EBIT). EBIT, or operating earnings, is revenue minus cost of goods sold and all sales, general and administrative (SGA) costs of running a business, without interest espenses and taxes.

$$Operating\ Margin = \frac{Operating\ earnings}{Revenue}$$

The current ratio is a liquidity ratio that shows how much it has current assets to pay of its current liabilities. If this ratio is over 1, it means that company has more current assets then current liabilities. This measure is most used to see if company has ability to pay short term obligations.

$$Current\ liquidity\ ratio = \frac{Current\ assets}{Current\ liabilities}$$

Changes in revenue are very clear and doesn`t need further explanation.

In summary, it can be concluded that Covid-19 has significantly stressed many companies business performance. But in following section of this paper we will see if the challenging business performance had statistically significant impact on stocks price volatility.

5. Methodology and data description

The aim of this paper was to explore if beginning of the Covid-19 pandemic, had significantly affected stocks price volatility in Croatia. Research was done in statistic software STATA. For the purpose of econometric data analysis, we employed static unbalanced panel data analysis. We collected data for companies (19 companies) included in the official stock index of the

Zagreb Stock Exchange, Crobex as of the 8th of September 2020. We had to exclude Ingra d.d., because they didn`t publish financial reports for observed period and Zagrebačka banka because it is financial institution. So, our sample finally had 17 large companies.

For the purpose of econometric data analysis, we employed static balanced panel data analysis. Model (1) forms the basis of our estimation.

$$Y_{it} = c + \sum_{k=1}^{K} \beta_k X_{it}^k + \varepsilon_{it} \qquad (1)$$

$\varepsilon_{it=}z_i + u_{it},$

where:

Y_{it} is the volatility of the stock (measured with standard deviation of mean of stock price change in the quarter) of nonfinancial large companies from Crobex, i at time t, with i = 1,..., N; t = 1,…, T

X_{it} are k independent variables:
1. Natural logarithm (Ln) of volume traded for quarter
2. Dummy variable - If the stock has market maker on Zagreb Stock Exchange – 1 – Stock has market maker, 0 – Stock doesn`t have market maker
3. Net financial debt (NFD)/ Earnings before interests, taxes, depreciation and amortization (EBITDA)
4. Relative change in revenue (q/q of year before)
5. Operating margin
6. Current liquidity ratio
7. Natural logarithm (Ln) of number of infected cases from Covid-19 in Croatia
8. Natural logarithm (Ln) of number death cases from Covid-19 in Croatia

ε_{it} is the disturbance with z_i being the unobserved insurance-specific effect and u_{it} being the idiosyncratic error. The presented model is a one-way error component regression model where $z_i \sim IIN(0, \sigma_z^2)$ and independent of $u_{it} \sim IIN(0, \sigma_u^2)$.

Static panel with fixed effects (FE) and static panel with random effects (RE) were used in this research. Hausman test showed that most appropriate model was static panel model with random effects.

The data was taken for second and third quarter for the years 2019. and 2020., from the Thomson Reuters database for 17 large companies from Crobex, as earlier explained. From the Thomson Reuters database we collected financial information of companies for net financial debt/ EBITDA ratio, changes in revenue, operating margin ratio and current liquidity ratio. From the Zagreb Stock Exchange (ZSE) we collected data of volume traded for the quarter, price change (for calculating volatility) and does stock has market maker. For calculating standard deviation of each stock, we took daily price movement of the stock for each observed quarter, calculated its price mean and based on that mean we calculated its standard deviation (quarter price volatility). From Croatian Institute of Public Health we collected data about quarter changes in number of infected people and in number of deaths from Covid-19 in Croatia.

We observed data of selected companies for the second and third quarter of 2019 (period before pandemic) and then we observe data for second and third quarter of 2020 (period of pandemic). We researched all the collected data and tried to find if there was a statistically significant

factors that impacted stocks volatilitiy measured with standard deviation of the mean price movement for observed period.

Descriptive statistics for all variables employed in research is provided in Table 1.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Quarter volatility of stock	68	0,0247882	0,193257	0,0049	0,1301
Ln of volume traded of stock	68	16,34074	1,457314	12,84	19,74
Stock has market maker	68	0,4705882	0,5028453	0	1
NFD/EBITDA ratio	68	14,46265	25,8493	0	134,62
Changes in revenue	68	-0,0535	0,328312	-0,8809	1,8666
Operating margin	68	-0,0844706	0,7883469	-5,117	0,497
Current ratio	68	1,492647	0,8305826	0,25	4,49
Ln of number infected cases	68	4,40351	4,482013	0	9,703816
Ln of number death cases	68	2,5724	2,613245	0	5,616771

Source: Authors' calculation based on data from Thomson Reuters and Zagreb Stock Exchange

From Table 1. it can be seen that we have observed 68 data points for every of the 17 companies and 4 quarters of their business performance ratio, quarter volatility, volume traded, if company stock has market maker, and natural logarithm of infected cases of Covid 19 and natural logarithm of number of death cases from Covid 19. Also we can see that mean quarter volatility of stock for 68 periods is 2,48% with standard deviation of 19,33%, so we can say that sample had very wide range of outcomes.

First step in research was to check the problem of multicollinearity between independent variables. The matrix of Pearson correlation coefficients was implemented to test the problem of multicollinearity. Correlation matrix for independent variables is shown with Table 2. An absolute value of the Pearson coefficient higher than 0,7 indicates a strong correlation between independent variables. As it can be seen from Table 2. there was no problem with multicollinearity between independent variables.
After examining problem of multicollinearity between independent variables we tested if there is presence of heteroscedasticity. If the error terms do not have constant variance, they are heteroskedastic. If the heteroscedasticity is present, the standard errors are biased. This can lead to bias in test statistics and confidence intervals. To test the presence of heteroscedasticity Breusch-Pagan test for heteroscedasticity was fitted in research. Result of Breusch-Pagan test is in Table 3.

Table 2: Correlation matrix

	Volume traded of stock	NFD/ EBITDA ratio	Changes in revenue	Operating margin	Current ratio	Ln of number infected cases	Ln of number infected cases
Volume traded of stock	1						
NFD/ EBITDA ratio	-0,2140	1					
Changes in revenue	-0,0416	0,3883	1				
Operating margin	-0,1146	0,0442	0,4695	1			
Current ratio	0,0110	-0,3318	-0,1067	-0,0145	1		
Ln of number infected cases	0,1163	0,1789	-0,1300	-0,2285	-0,0288	1	
Ln of number infected cases	0,1171	0,1778	-0,1325	-0,2294	-0,0291	0,9999	1

Source: Authors' work

Table 3: Tests for heteroscedasticity

Tests	chi2	p value
Breusch-Pagan	25,19	0,0000

Source: Authors' calculations

Result of Breusch-Pagan test for heteroscedasticity showed that heteroscedasticity was present. Heteroscedasticity causes standard errors to be biased so after finding proper static panel model robust standard errors in static panel model were used in research. After examine the multicollinearity problem and heteroscedasticity, static panel data was used in research.

Results of our research and if any of the mentioned independent vaiables has significant impact on stocks price volatility is presented in following Table 4.

From the data in Table 4. it can be argued that the model as a whole is statistically significant. The data in Table 4. shows that increase in operating margin (independent variable) negatively and statistically significantly affects stocks volatility (dependent variable) [coef. -0,0061294] at the 0,5% level. All the other independent variables in our research, haven`t statistically significant impact on stocks price volatility.

Table 4: Results of research

	Quarter volatility of stock
Ln of volume traded of stock	0,0048008 (0,003275)
Stock has market maker	Omitted
NFD/EBITDA ratio	0,0000856 (0,0000878)
Changes in revenue	0,0228488 (0,134626)
Operating margin	-0,0061294** (0,002508)
Current ratio	0,0027215 (0,0052511)
Ln of number infected cases	-0,0216853 (0,0138497)
Ln of number death cases	0,0373107 (0,0237796)
cons	-0,0587438 (0,0559892)
R2 within	0,5123
R2 between	0,1542
R2 overall	0,0378
Model p-value	0,0000
Breusch-Pagan test for heteroskedasticity	chi = 0,06 p value = 0,8125
Hausman test	chi = 25,19 p value = 0,0000

*,**,*** Statistically significant at the; 10%, 5%, 1% level, respectively. Robust standard errors are between parentheses.

Source: Authors' calculation

6. Conclusion

In this paper we researched if number of Covid-19 cases and deaths had impact on stock price volatility of companies included in the official stock index Crobex. Beside impact of Covid-19, we researched also, impact of the following ratios, in a time of pandemic, NFD/EBITDA, operating margin, current ratio and changes in revenue (independent variables) on stocks price volatility (dependent variable). Also, we researched volume traded of a stock, if a stock has market maker or not and does any of the mentioned parameters has statistically significant impact on stocks price volatility. In our research we found that only change in operating margin negatively and statistically significantly affects stocks volatility (dependent variable) [coef. -0,0061294] at the 5% level for large Croatian companies in a time of pandemic. All other factors

in our research, haven`t statistically significant impact on stocks price volatility. We can conclude that all other variables observed in our research didn`t have statistically significant impact on stocks volatility in Croatia, at the beginning of the pandemic Covid -19.

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THE INTERNAL MARKET OF THE EUROPEAN UNION AT THE TIME OF THE COVID-19 PANDEMIC

ABSTRACT

Following the COVID-19 outbreak, the EU Member States have imposed a number of restrictions to prevent the spread of infection. The purpose of this paper is to analyse the recent acquis communautaire which introduces measures affecting the internal market of the European Union, i.e. the right of citizens of the European Union to free movement of persons. Nowadays, we are witnessing many restrictions ranging from those related to the freedom of movement of people from one Member State to another to the ones linked with trade in goods and services. The question arises as to whether the EU is adequately dealing with the public health crisis caused by the COVID-19 pandemic. Firstly, it should be pointed out that public health policy falls within the competence of the Member States, while the EU only supports them through its actions (Art. 168 of the Treaty on the Functioning of the EU). In this context, the paper analyses the competence of the EU regarding the health and scope of the EU Health Policy. Secondly, no fundamental market freedom is absolute, so the Member States may impose certain restrictions if they are justified. The protection of public health is certainly one of the legitimate reasons for imposing restrictions, but the question arises as to whether all the measures taken by the Member States are proportionate to the goal and if there is any softer measure that could achieve the same effect. In this context, the existing relevant case law of the European Courts – Court of Justice of the European Union and European Court of Human Rights - is critically assessed and compared.

Keywords: *free movement of persons, COVID-19 pandemic, internal market of the European Union, Court of Justice of the European Union, European Court of Human Rights.*

1. Introduction

With the outbreak of the coronavirus pandemic (COVID-19), the EU Member States have taken a number of measures to prevent the spread of the infection. We are witnessing many restrictions that impose on citizens the obligation to do or refrain from certain actions: from measures of physical distancing, the obligation to wear face masks, the prohibition of gatherings, closing schools, the obligation of self-isolation, curfew, restrictions on the free movement of citizens from one Member State to another, restrictions on the movement of goods

and services, and on trade in goods and services and numerous others.[1] Among the listed measures, a distinction should be made between national measures that are purely internal (*interstate*) and those that have a cross-border effect. For the purposes of this paper, only measures that have cross-border effects and can affect the EU's internal market are in the spotlight.

There are many criticisms that the European Union has not taken adequate measures to combat the coronavirus pandemic,[2] so the question arises: is the EU coping adequately with the public health crisis caused by the coronavirus? In order to give the most precise answer to this question, it should be pointed out that public health is a policy of the Member States, and the EU only supports the Member States related endeavours (Art. 168 of the Treaty on the Functioning of the EU). This proved to be a serious obstacle to an adequate response from the EU.

Furthermore, no fundamental market freedom is absolute, and the Member States may impose certain restrictions if they are justified. The protection of public health is certainly one of the legitimate reasons for imposing restrictions, but the question arises as to whether all the measures taken by the Member States are proportionate to the aim pursued and whether there is any milder measure that could achieve the same effect.

The aim of this paper is to analyse the impact of the COVID-19 pandemic on the EU's internal market. The paper is structured in five parts. After the introductory part, the second part of the paper analyses the competence of the EU in the field of health. In order to answer the question of whether the EU is adequately dealing with the pandemic, it is first necessary to determine whether the EU has competence in the areas of public health. Provided that the answer to the first question is in the affirmative, the question of the scope of the EU's powers in the field of public health arises. The answers to the questions asked are neither simple nor unambiguous. The central, third part of the paper analyses the impact of the COVID-19 pandemic on the EU's internal market. The fourth part analyses the relevant case law of the two European courts: the Court of Justice of the EU (CJEU) and the European Court of Human Rights (ECtHR). In the last, fifth part of the paper, concluding remarks are given.

2. EU competence in the field of public health

The EU may have exclusive, shared, or supportive competences. This last category allows the EU to support, coordinate or supplement actions of the Member States. The EU does not have the power to legislate in this context and must not interfere with the Member States in this process. (Craig, De, B., 2015, 86) One of such areas is public health, the legal basis of which is Art. 168 of the Treaty on the Functioning of the EU. Art. 168 para. 1 states that *"A high level of human health protection shall be ensured in the definition and implementation of all Union policies and activities"*. The Treaty is clear, public health is in its nature a policy within the competence of the Member States, and the EU's action only complements the action of the Member States and encourages their cooperation in health protection and the principle of subsidiarity should be respected. (Greer, 2019, 5; Rodin, 2000, 1-2).

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[1] See *Data on country response measures to COVID-19* available at https://www.ecdc.europa.eu/en/publications-data/download-data-response-measures-covid-19 (accessed 8 March 2021)

[2] See *How Europe failed the coronavirus test* available at https://www.politico.eu/article/coronavirus-europe-failed-the-test/; *Is the EU's COVID-19 Response Losing Central and Eastern Europe to China?* available at https://www.worldpoliticsreview.com/articles/28744/is-the-eu-s-covid-19-response-losing-central-and-eastern-europe-to-china; *COVID-19 vaccine: What are the real reasons behind the EU's slow rollout?* available at https://www.euronews.com/2021/01/29/why-has-the-eu-s-coronavirus-vaccine-rollout-been-so-slow (all accessed 9 March 2021)

However, Craig and De Burca believe that the EU's competences in this area should not be underestimated because, although the harmonization of national legislation is excluded, the EU can pass very convincing soft law in the form of guidelines on best practices, monitoring and the like. (Craig, De, B., 2015, 87) In spite of the absence of legally binding effects, soft law produces both legal and practical effects. (Avbelj et. al., 2019).

The EU has had an impact on health since its very beginnings in the 1950s. However, as in most Member States of the EU health care was the responsibility of national ministries of labour and social welfare until the 1980s, consequently, at the EU level, health policy has long been part of the policy responsible for the coordination of the social security system. (Regulation 1408/71). EU health policy, as a separate EU policy, began to develop in the 1980s for more or less clear political reasons and under the influence of the Member States' national policies. Thus, a very influential EU politician back then, the President of the French Republic, François Mitterrand, advocated the fight against cancer and that is a reason why Europe Against Cancer Plan was developed. This was followed by initiatives to combat AIDS, drug abuse, etc. The Maastricht Treaty (1993) was to be an important step forward on the path to institutionalizing public health at the EU level. Thus, the Treaty of the European Union (Maastricht) authorized the EU to regulate public health (Art. 129 of the Treaty of the European Union), but unfortunately gave it very limited powers and focused on the problem of that time related to combating drug abuse. As mostly left-wing governments in the Member States came to power in the late 1990s, they demanded a higher social dimension in addition to the creation of a monetary union, which included strengthening health care. (Greer, 2019, 8-10)

The emergence and spread of Bovine spongiform encephalopathy (BSE) – also known as Mad cow disease in the UK in the early 1990s led to a ban on beef exports, which strained relations between the British government and the other Member States and pointed to all the weaknesses in the implementation of partial health policies. The mentioned crisis led to a further strengthening of the powers (authors' opinion is that it still was not sufficient) of the EU in the field of health with the Treaty of Amsterdam (1997), and frequent problems related to food safety led to the adoption of the so-called General Food Law Regulation (Regulation 176/2002). Based on the adopted Regulation, the European Food Safety Authority (EFSA)[3] and the Rapid Alert System for Food and Feed (RASFF)[4] were established. A significant step forward in the development of EU Health Policy is the establishment of a separate Directorate General for Public Health and Consumers - DG SANTE in 1999.

The Court of Justice of the EU (CJEU) also contributed to the development of the EU Health Policy, as was the case with other EU policies. Thus, in Cases C-120/95 Decker and C-158/96 Kohll, the Court of Justice said that prior authorization was not required for planned patient treatment in another Member State (Kohll, para. 54) and that prior authorization was not required for the purchase of medicines or prescribed medication in another Member State (Decker, para. 46). This was followed by a series of similar rulings that *"force"* the EU legislator to substantially change the EU's legislation in the field of health care.[5] Thus, the need to ensure patient mobility from one Member State to another was key to the development of EU Health Policy and resulted in the adoption of the Directive on Cross-border patient mobility.(Directive 2011/24/EU) According to Greer, although it is an instrument for the

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[3] See more at https://www.efsa.europa.eu/en (accessed 9 March 2021)
[4] See more at https://ec.europa.eu/food/safety/rasff_en (accessed 9 March 2021)
[5] See for an example the following judgments: C-368/98 *Abdon Vanbraekel and Others v Alliance Nationale des Mutualités Chrétiennes* (ANMC), C-327/04 *Watts*, C-268/13 *Petru* and other related to the interpretation of Regulation 1408/71

realization of the internal market, it has distinguished between medical services and other types of services provided in the internal market. (Greer, 2019, 16).The EU's interest in regulating the use of tobacco products has also contributed to the development of the EU's health policy. (Bates et al., 1999, 225-235).

According to Greer, significant progress in the EU Health Policy occurred right after certain crises *because crises focus attention on the issue. Public health crises put public health on the agenda, bringing seemingly technical microbiology and epidemiology out of the shadows into the centre of public attention, and are an opportunity for entrepreneurs to push forth public health initiatives that were being neglected.* (Greer, 2019, 26). There is no doubt that this public health crisis caused by the COVID-19 virus will lead to a further strengthening of the EU Health Policy, and possibly to a "transfer" to the shared powers of the EU. For this to happen, amendments to the Founding Treaties are needed, which requires the general consent of all Member States. This is supported by the proposal of the new EU4Health program, an ambitious health plan for the period 2021 to 2027, which aims to create the EU Health Union. The EU4Health program is the EU's response to the COVID-19 public health crisis. (Regulation, COM (2020) 405 final) It was proposed by the European Commission in May 2020. The program provides EUR 9.4 billion to be made available to the Member States, health and non-governmental organizations, and aims to: a) improve the EU's preparedness for cross-border health threats, b) strengthen Member States' health systems and c) ensure availability and affordability of medicines and medical products, promote medical and pharmaceutical innovation and greener production. (Regulation, COM (2020) 405 final, 1).

It is still necessary to answer the questions from the introductory part of the paper. The answer to the first question: whether the EU has competence in the field of public health would be affirmative. Although we cannot yet talk about the EU Health System, there is an EU Health policy. As Greer and a group of authors state: *"It is an awkward shape and has unusual features, procedures and priorities, but that is the case for most policy areas in any political system."* (Greer, 2019, 175).

Concerning the second issue, regarding the scope of the EU's powers in the field of public health, it is necessary to determine in advance the forms of EU Health Policy. Thus, Greer and a group of authors cite three of its manifestations or reverses. The first and most obvious form is the explicit EU Health Policy, which is based on the Founding Treaties themselves, entitled "Public Health" in Chapter XII of the Treaty on the Functioning of the EU. Thus, in Art. 168 para. 1 of the Treaty on the Functioning of the EU states: *"A high level of human health protection shall be ensured in the definition and implementation of all Union policies and activities."* This form is closest to the notion of health policy implemented in the Member States but with very limited EU powers. (Greer, 2019, 179). The other face of EU health policy is achieved through EU internal market provisions and EU powers to promote the development and regulation of the internal market, for example by regulating the professional qualifications of health professionals, patient mobility, etc. Although the EU has exclusive competence in the internal market, the undertaken measures are not meant to not have as their primary goal the strengthening of health but in fact the regulation of the internal market. (Greer, 2019, 5). We can conclude that health policy is evolving as a by-product of creating a common market, as has been the case with some other EU policies. Finally, the third party, as the latest form, can be seen through fiscal governance or the European supervision of the fiscal systems of the Member States.[6] Although control by the EU has existed for decades, it has become particularly

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[6] The European Commission publishes country-by-country reports on overall economic and social change in each Member State, covering all macro-economically or socially important areas and assessing the state of the budgets

strong since the 2010 financial crisis. (Greer, 2019, 5). In this indirect way, the European Commission can influence the health systems of the Member States.

3. Restrictions of the fundamental economic freedoms in the EU

As it was pointed out earlier, for the purposes of this paper, particular interest is shown to the national measures with a cross-border effect that can significantly distort the EU's internal market. Measures taken by the Member States to prevent the spread of coronavirus have called into question the functioning of the EU's internal market, the very concept of EU citizenship, but also some of the fundamental principles on which the EU is based. The measures have been (and still are, in the authors' opinion) very harsh and unprecedented in the history of the EU and have called into question solidarity between the Member States, a principle which from its inception has been the connective tissue that has held the Member States together. Some Member States have shown selfishness and a focus on their own national interests. In other words, the very foundations of the EU have been shaken. For example, in March 2020, Germany and France banned the export of masks, gloves and other protective equipment.[7] Hungary has banned the export of hydroxychloroquine sulphate as a basic ingredient for the production of a drug that could be used to treat COVID-19 patients. The Hungarian government said in a statement: *"Hungary is one of the world's largest exporters of the ingredient, but the priority now is to protect and supply medicines to Hungarian citizens."*[8] Over time, the approach of the Member States changed and they started helping each other but the initial reactions were really surprising. In both cases, states have invoked the protection of the public health of their citizens, a reason we will discuss in more detail below.

In the first place, as the biggest limitation, we would emphasize the introduction of border controls at the former state borders of the Schengen area, which is a significant step backwards because the realization of the idea of "EU without borders" was considered the greatest success of the European integration process. (Regulation 2016/399). Although the Schengen Border Code does not provide the possibility of introducing borders to protect public health (Regulation, 2016/399) the European Commission Guidelines state that a threat to health can be equated with a threat to public order or public safety, (Guidelines COM(2020) 173) especially when it is of such intensity. (Goldner Lang, 2021, 5). It is interesting to note that the WHO and ECDC (European Centre for Disease Prevention and Control) did not make any recommendations for closing borders, explaining that *"available scientific evidence does not justify closure"*, so here we have a discrepancy between the recommendations of health organizations and policy decisions. (Golder Lang, 2021, 3).

Furthermore, a number of travel restrictions have been imposed on all modes of transport, obligation to test, quarantine, etc. In addition, national measures are very different and uneven and this makes travel significantly more difficult because for each Member State you have to

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in each country. In particular, the progress made by each Member State in addressing the issues identified in last year's country-specific recommendations is assessed. See more at https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/european-semester-timeline/winter-package_en (accessed 10 March 2021)

[7] See *Članice kritiziraju Njemačku i Francusku zbog ograničenja izvoza zaštitne opreme* available at https://www.tportal.hr/vijesti/clanak/clanice-unije-kritiziraju-njemacku-i-francusku-zbog-ogranicenja-izvoza-zastitne-opreme-20200306 (accessed 1 March 2021)

[8] See more: *Mađarska i Indija zabranile izvoz sastojka lijekova za koronavirus* available at https://www.tportal.hr/vijesti/clanak/madarska-i-indija-zabranile-izvoz-sastojka-lijekova-za-koronavirus-20200325 (accessed 1 March 2021)

find out if you need a COVID-19 test, how old, etc. In this way, free movement of people, goods and services in the EU internal market is prevented or hindered.

All Member States have invoked COVID-19 and public health protection in turn and there is no doubt that this is a justifiable reason to impose restrictions. Public Health is one of the accepted justifications for restricting the free movement of goods and is often invoked by states, with the EU Court analysing in detail whether health protection is the real goal or just a front for protecting domestic production, as was the case in Casis de Dijon where, among other things, Germany called for the protection of public health.[9] With regard to the permitted restrictions on the free movement of workers or EU citizens, in accordance with Directive 2004/38: *"The only diseases justifying measures restricting freedom of movement shall be the diseases with epidemic potential as defined by the relevant instruments of the World Health Organization and other infectious diseases or contagious parasitic diseases if they are the subject of protection provisions applying to nationals of the host Member State."* (Directive 2004/38/EC). In accordance with Art. 52 and 62 of the Treaty of the Functionating of the EU, public health may also serve as a restriction on the freedom to provide services or the freedom of settlement. The protection of public health can be a justifiable reason for the Member States to impose restrictions on certain fundamental human rights and freedoms and it has been explicitly confirmed by the ECtHR. On the occasion of travel restrictions in Kiyutin v. Russia, the ECtHR said: *"Admittedly, travel restrictions are instrumental for the protection of public health against highly contagious diseases with a short incubation period, such as cholera or yellow fever or, to take more recent examples, severe acute respiratory syndrome (SARS) and "bird flu" (H5N1). Entry restrictions relating to such conditions can help to prevent their spread by excluding travellers who may transmit these diseases by their presence in a country through casual contact or airborne particles."[10]*

The protection of public health is recognized in EU documents related to combating the consequences of COVID-19 as an EU priority, which is not the first time that a national value has been recognized as an EU value. Nothing strange or unknown so far. But here it is interesting that this is the first time in the history of the EU that a public health reason has been used as a justification by absolutely all Member States, without exception. As health care is both a national and an EU value, it certainly makes it difficult for the EU to balance the protection of fundamental economic freedoms with public health. (Goldner Lang, 2021, 6). It will be interesting to see how the Court of Justice (CJEU) will act when it has to "weigh" the protection of public health and some of the fundamental market freedoms (more on this in Chapter 4).

It is further disputable that the measures imposed do not, as a rule, apply to own nationals, so the question arises here as to whether such measures are discriminatory. Restrictive measures are only allowed if they are non-discriminatory and proportionate to the threats that are facing and cannot serve economic purposes. (Goldner Lang, 2021, 5-6). We also see that it is problematic that all measures were adopted unilaterally by the Member States, without coordination at the EU level, and the only exception is the closure of the EU's external borders with third countries, which was agreed at the European Council meeting. (Goldner Lang, 2021, 3).

According to Goldner Lang, all measures were taken as a precautionary principle, because of fear of an unknown virus. (Goldner Lang, 2021, 2). Although it is explicitly mentioned only in

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[9] Case C-120/78 *Rewe-Zentral AG v Bundesmonopolverwaltung für Branntwein*, ECLI:EU:C:1979:42

[10] *Kiyutin v. Russia*, Application no. 2700/10, judgment from 10 March 2011

Art. 191 para. 2 of the Treaty on the Functioning of the EU regarding environmental decision-making, the Court of Justice has raised the "precautionary principle" to the level of a general principle of law. (Craig, De, B., 2015, 575; Petrašević, 2021, 793-807).) Thus, in *Artedogan and Others v. Commission*, it concluded: *"It follows that the precautionary principle can be defined as a general principle of Community law requiring the competent authorities to take appropriate measures to prevent specific potential risks to public health, safety and the environment, by giving precedence to the requirements related to the protection of those interests over economic interests. Since the Community institutions are responsible, in all their spheres of activity, for the protection of public health, safety and the environment, the precautionary principle can be regarded as an autonomous principle stemming from the abovementioned Treaty provisions."*[11]

The application of the precautionary principle allows decision-makers to adopt restrictive measures, in principle - the greater the degree of scientific uncertainty and the lack of scientific evidence, the more justified its application. The political decision to take action is therefore based on a lack of scientific evidence, but the final political decision as a precaution is made by assessing social, economic and other interests and depending on the capacity of national health systems. On the other hand, it lowers the threshold of application of the principle of proportionality, primarily the application of the principle of "necessary", and above all due to scientific uncertainty.(Goldner Lang, 2021, 19). Although EU documents rarely explicitly mention precaution, it occurs in its various language variants such as protection, preventive measures, risk assessment, risk management, contact tracing and risk communication, etc. (Goldner Lang, 2021, 11). Politicians never seem to have relied so heavily on science in EU history. (Goldner Lang, 2021, 12). (The problem arises when leading (national) scientists have opposing views.[12]

4. The analyses of the relevant case law of the European Courts – Court of Justice of the European Union and the European Court of Human Rights

Recently, in early December 2020, the ECtHR delivered its first decision on a case challenging measures taken by a state in response to the COVID-19 pandemic. This is the case of Le Mailloux v. France.[13] As this is a case about the member of the Council of Europe, which is also a member of the EU, this judgment is interesting in the EU context. It would be expected that this is a case where the intensity of national measures goes beyond what is necessary in a democratic society to achieve a certain goal, in this case, the protection of public health. But on the contrary, the case is about how the State has failed to protect people due to the absence and deficiency of measures. In other words, the applicant complained that France had failed to take adequate measures to protect his health and had committed a violation of the Convention by failing to do so.[14] What is even more interesting is that the ECtHR assessed violations in the context of public health protection,

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[11] Joined cases T-74/00, T-76/00, T-83/00, T-84/00, T-85/00, T-132/00, T-137/00 and T-141/00, *Artegodan GmbH and Others v Commission of the European Communities*, ECLI:EU:T:2002:283, par. 184

[12] See more: *Od proljeća su stalno u našim životima, a stavovi im se dosta razlikuju. Kome od hrvatskih "pop znanstvenika" najviše vjerujete?* available at https://www.novilist.hr/novosti/hrvatska/od-proljeca-su-stalno-u-nasim-zivotima-a-stavovi-su-im-cesto-oprecni-kome-od-hrvatskih-pop-znanstvenika-najvise-vjerujete/ (accessed 9 March 2021)

[13] *Le Mailloux c. France*, Application no. 18108/20, judgment from 5 November 2020

[14] For a comment on the judgment see *The First Decision on COVID-19 Measures by the ECtHR: Le Mailloux c. France*, Blog Global Health Law Groningen available at https://www.rug.nl/rechten/onderzoek/expertisecentra/ghlg/blog/the-first-decision-on-covid-19-measures-by-the-ecthr-le-mailloux-c-france-21-12-2020?lang=en#_ftn2 (accessed 10 March 2021)

rights which are not per se protected at all by the Convention. The formal legal basis is therefore the right to life, the integral element of which, according to the ECtHR, is the right to health. Thus, the ECtHR concluded: *"States have a positive obligation to take the necessary measures to protect the life and physical integrity of persons under their jurisdiction, including their health."* (Le Mailloux v. France, par. 9). This is not only confirmation of previous case law that health is indirectly protected by the Convention but public health protection will be relevant to the assessment of national measures taken to combat the COVID-19 pandemic.[15] In the end, the ECtHR said that it was about the so-called *actio popularis* and that the applicant *"failed to provide any information about his own condition and had failed to explain how the alleged shortcomings of the national authorities might have affected his health and private life."* (Le Mailloux v. France, par. 9-15). Although the ECtHR in its earlier case law deviated from the strict requirement that the applicant must be a direct victim of certain national measures,[16] it seems that the Court has taken a clear rigid position in this particular situation.[17]

Currently, there is a total of 5 claims pending joined by the ECtHR into the joint case of *Toromag S.R.O. and four Others v. Slovakia*[18] where the applicants are the owners of the fitness center and who claim that the measure of closure – ban on work due to the pandemic violated their property rights and seek compensation for actual damage and lost profits. The state here had a negative obligation to refrain from interfering with property rights. This case is diametrically opposed to the previous one analysed - Le Mailloux v. France where the state had a call-up obligation to take certain measures in order to protect public health.[19] We look forward to the ECtHR's decision in the joined cases because, in the authors' opinion, this will be a precedent for all similar cases, which we assume there will be many. Only before the Constitutional Court of the Republic of Croatia, there are dozens of constitutional lawsuits requesting either an assessment of the measures of the National Civil Protection Authority or an assessment of laws and bylaws related to the COVID-19. It can be assumed that if not all, then most of them will end up in Strasbourg.

Searching the case law of the Court of Justice (CJEU), the authors found that there were no pending cases concerning either national measures to combat COVID-19 or measures taken by the EU to mitigate the effects of the COVID-19. Nevertheless, the authors found that there is a whole series of actions for the annulment of the EU act where the airline Ryanair seeks annulment of European Commission Decisions on the granting of state aid to individual national airlines.[20]

The European Commission has not initiated any proceedings before the CJEU against a Member State for violating EU law in relation to COVID-19 measures, that may restrict fundamental economic freedoms. But such lawsuits are to be expected as there are a number of proceedings that are currently in the pre-trial phase. Namely, the European Commission publishes an average of eight to ten times a year a monthly package of decisions on violations of regulations (Duić, Petrašević, 2019, 68-69). By reviewing the so-called *"infringements packages"*, authors found that the European Commission, for example, issued on 14 May 2020

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[15] N. 14.

[16] Thus, for example, in *Klass and Others v. Germany*, Application no. 5029/71, which referred to secret surveillance measures.

[17] N. 14.

[18] *Toromag, S.R.O. v. Slovakia*, Application no. 141217/20

[19] N. 14.

[20] See also cases: T-238/20, T-259/20, T-378/20, T-379/20, T-388/20, T-465/20, T-628/20, T-643/20, T-657/20, T-677/20, T-737/20, T-769/20, T-14/21, T-34/21, all with a label *Ryanair v. Commission*.

in Bulgaria, the so-called. "formal notice" warning this Member State of a violation of Art. 34 of the Treaty of Functionating of EU by giving preference to domestic products. The European Commission on 30 of October 2020 issued to Bulgaria the so-called *reasoned opinion* which is a procedural precondition for initiating proceedings before the Court of Justice of the EU. (petrašević, 2016, 31-38). In early February 2021, the European Commission warned six Member States (Belgium, Denmark, Finland, Germany, Hungary and Sweden) that current border restrictions and permits restrict the right of free movement of EU citizens, with the European Commission being particularly critical of Germany.[21] Proceedings before the Court of Justice of the EU are expected soon.

5. Concluding remarks

From the onset, EU health policy has been characterised by a significant level of spontaneity and uncertainty. Its origins were neither structured nor deliberately shaped. As a matter of fact, it has always been tailored in accordance with current actualities, as a mosaic of a number of various policies and regulations: social, labour, fiscal, environmental etc.

The EU's limited powers in the field of public health have proved to be a serious obstacle to an adequate response from the EU. The challenge for the European Union is to balance between controlling the spread of disease and preserving fundamental EU market freedoms, as the protection of public health is both a national and an EU value.

With the emergence and spread of the COVID-19 pandemic, the Member States of the EU have taken a number of measures to protect the health of their citizens. In doing so, a distinction should be made between national measures that are purely internal (interstate) and those that have a cross-border effect. For the purposes of this paper, the authors focused exclusively on individual measures that have cross-border effects and may affect the EU's internal market. In a nutshell, the unprecedented crisis has revealed a significant level of fragility in the domain of legislation.

While there is a *"pilot"* judgment in front of the European Court of Human Rights (*Le Mailloux v. France*) as well as ongoing proceedings (*Toromag SRO and four Others v. Slovakia*), there are currently no judgments of the Court of Justice of the European Union concerning COVID-19 measures, but there are series of lawsuits against the European Commission decisions on the granting of State aid. By reviewing the so-called *"infringements packages"*, the authors determined that the European Commission has issued a dozen *"formal notices"* and *"reasoned opinions"*, but lawsuits in front of the Court of Justice of the European Union for violation of EU law are yet to be expected. It will be interesting to see how the Court of Justice will act when it has to *"weigh"* the protection of public health and some of the fundamental market freedoms.

As in many other segments of life, there is no doubt that the COVID-19 pandemic has set a number of precedents from which EU legislation is not exempt. Today, it is only certain that nothing is certain. At the time when this paper was written, the COVID-19 pandemic was still extremely alive and is experiencing strong fluctuations in the context of the number of people

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[21] See more: *EU Commission Urges Six Member States to Remove Some of Their COVID-19 Border Restrictions* available at https://www.schengenvisainfo.com/news/eu-commission-urges-six-member-states-to-remove-some-of-their-covid-19-border-restrictions/ (accessed 11 March 2021). For more examples see https://ec.europa.eu/commission/presscorner/home/en?keywords=&dotyp=851#news-block (accessed 11 March 2021)

getting infected. It is widely estimated that the COVID-19 pandemic could come to a complete halt in early 2022. Opinions of the scientific community are divided, but there is growing talk that there is a possibility that the virus will alter to an ever present, yet weaker form. The new normal becomes our everyday life. *We'll need a new game plan if this one sticks around.*[22]

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ANALYSIS OF CONSERVATIVE AND AGGRESSIVE WORKING CAPITAL MANAGEMENT STRATEGY THROUGH DIFFERENT INDUSTRIES

ABSTRACT

A company may pursue a conservative or aggressive working capital management strategy. A conservative strategy of working capital management implies higher investments in working capital and a high level of liquidity, where one can expect less risk, but also lower profitability. An aggressive strategy of working capital management implies less investment in current assets, where higher profitability is expected, but also higher risk. Companies with a shorter cash conversion cycle will pursue a more aggressive working capital management policy because they can accept higher risk while companies with a longer cash conversion cycle will pursue a more conservative working capital management policy. The main goal of this paper is to analyse the working capital management strategies of Croatian small and medium enterprises through four industries. Three specific goals have been set: The first goal is to establish which working capital management strategy Croatian small and medium-sized enterprises use. The second goal is to determine whether there are differences in working capital management strategy between different industries. The third goal is to analyse the cash conversion cycle in the observed industries. The sample of data includes 276 small and medium enterprises of four industries that make up the largest share in the total number of employees. It will observe a six-year time period (2010-2015). In order to achieve the set goals, descriptive statistics will be made for all variables. Using financial analysis techniques, the authors will calculate the cash conversion cycle and analyse it in the observed industries. The assumption is that the observed companies are implementing a conservative working capital management strategy, which is typical for companies operating in post-transition countries, characterized by less developed markets and an uncertain business environment. Industries with a shorter cash conversion cycle are expected to pursue a more aggressive working capital management policy, and vice versa.

Keywords: *conservative strategy, aggressive strategy, cash conversion cycle, working capital.*

1. Introduction

A company may pursue a conservative, moderate, or aggressive working capital management strategy. A conservative working capital management strategy implies greater investment in working capital, which will result in greater liquidity, while an aggressive working capital management strategy implies less investment in working capital, with higher profitability expected. Profitability and liquidity are important goals for any company and abandoning one goal in favour of another can create serious problems for the company. Therefore, every company must strive to balance these goals, which can be achieved by maintaining an optimal level of working capital.

Companies operating in a stable macroeconomic environment are more prone to an aggressive working capital management strategy, while companies operating in an uncertain market environment are more prone to a conservative strategy (Baveld, 2012). In terms of security, companies can make a better prediction of sales revenues, collection of receivables and costs and keep minimum amounts of working capital to minimize costs, while in conditions of uncertainty, the need for working capital will increase, which will lead to stockpiling and thus increased costs. (Orsag, 2015).

The paper will analyse the working capital management strategies of Croatian small and medium enterprises belonging to the group of post-transition countries operating in an uncertain market environment. According to CEPOR (2017), the most common causes of business interruptions in the Republic of Croatia were related to issues of tax policy and administrative burden (30.2%), problems of finding sources of financing (20.8%) and other reasons. Problems with sources of financing have also been identified by the World Bank, which has focused an important part of its portfolio on small and medium-sized enterprises in developing countries.

Two basic hypotheses are set in the paper. The first basic hypothesis **H1** is: Croatian small and medium enterprises implement a conservative working capital management strategy. The second basic hypothesis of **H2** is: Companies operating in industries with a shorter cash conversion cycle pursue a more aggressive working capital management policy. Working capital management strategies will be analysed using descriptive statistics. Using financial analysis techniques, the authors will analyse the cash conversion cycle in the observed industries.

2. Strategies of working capital management

A company may implement a conservative or aggressive working capital management strategy. Conservative and aggressive strategy are present, on the one hand, in the investment strategy, and on the other hand, in the financing strategy. Investment strategies are related to current assets, and financing strategies are related to current liabilities (Hassani & Tavosi, 2014). Afza & Nazir (2008) state that the degree of aggressiveness of a working capital investment strategy is measured by the ratio of current assets to total assets, with a lower value of this ratio indicating higher aggressiveness. The degree of aggressiveness of the working capital financing strategy is measured by the ratio of current liabilities to total assets, with a higher value of this ratio indicating higher aggressiveness. The following are investment strategies and working capital financing strategies.

2.1. Strategies of working capital investment

A conservative investment strategy implies a higher level of capital investment in current assets compared to fixed assets, which on the one hand increases security and reduces risk, and on the other hand reduces profitability (Weinraub & Visscher, 1998). Larger current assets mean higher inventories, high uncollected receivables and higher amounts of money. The disadvantages of using this strategy are the high costs of maintaining inventories, the risk of bad debts and the opportunity costs of holding money in the amount of interest from investing in government bonds. The higher share of current assets in total assets indicates the application of a conservative investment strategy (Afza & Nazir, 2007).

An aggressive investment strategy implies a minimum level of capital investment in current assets relative to fixed assets which on the one hand increases profitability and on the other hand reduces security and increases risk (Weinraub & Visscher, 1998). The goal of this strategy is to increase earnings in such a way that stocks are tied up as short as possible, that consumer loans are approved as little as possible, and that money is turned over and invested as quickly as possible. With this strategy, there are risks of losing customers due to strict credit policy, delays in the production process due to ordering stocks just in time as well as the inability to pay extraordinary expenses. This strategy is optimal for companies operating in a secure market environment where inventory can be procured just in time, where customers are won by the quality of goods and services, and timely payment is common and costs are usually easily predictable. A smaller share of current assets in total assets indicates the application of an aggressive investment strategy (Afza & Nazir, 2007). Afza & Nazir (2008) state that the use of an aggressive investment policy will result in lower expenses, and a shorter cash conversion cycle, higher risk and higher required return to compensate the risk.

2.2. Strategies of working capital financing

Aggressive financing policy relies heavily on short-term financing, and conservative on long-term financing (Brigham & Ehrhardt, 2011). A conservative financing strategy implies that part of the fluctuating assets is financed from long-term sources. Security reserves are formed at the time of seasonal downturns, i.e. surpluses are created at the time of the company's minimum needs for funds. This reduces the risk of business interruption, but creates opportunity costs of unused funds (Orsag, 2015). The financing strategy is more conservative the smaller the ratio of current liabilities to total assets.

An aggressive financing strategy involves financing fixed assets from short-term sources. The main goal of using an aggressive financing strategy is to use cheaper short-term debts versus more expensive long-term ones which should result in higher profitability. Orsag (2015) points out that the biggest risk of using this strategy is the inability to renew short-term loans, which can result in corporate insolvency, inability to procure raw materials and supplies because suppliers cancel deliveries due to non-payment, investors giving up investing due to uncertainty. The second biggest risk is the possibility of changing the interest rate due to refinancing (Prša, 2019).

A moderate financing strategy lies between an aggressive and conservative financing strategy and it applies a hedging approach. The hedging approach indicates that each asset is financed by a financial instrument with approximately the same maturity date (Van Horne & Wachowicz, 2014). Weinraub & Visscher (1998) analysed the investment strategy and the working capital financing strategy in ten industries over ten years. The aim of the study was to

determine whether there are significant industrial differences in working capital policies. The results showed that industries follow significantly different working capital management policies. Also, there is a strong tendency that a more aggressive approach in one area is balanced by a more conservative approach in another area.

Afza & Nazir (2007) investigated the relationship between aggressive / conservative working capital policies and profitability as well as risks for 208 joint stock companies listed on the Karachi Stock Exchange. Empirical results have identified a negative relationship between working capital policies and corporate profitability. The firms yield negative returns if they follow an aggressive working capital policy. Vahid et al (2012) investigated the impact of aggressive and conservative working capital management policies on company profitability and value. The results show that a conservative investment strategy and an aggressive financing strategy negatively affect a company's profitability and value. Hassani & Tavosi (2014) examined the impact of working capital and financing policies in working capital on the risk and profitability of listed companies on the Tehran Stock Exchange. The obtained results indicate that companies that use conservative working capital policies achieve lower profitability, and companies that use aggressive working capital policies achieve higher profitability. They point out that firms will strike a balance between risk and return if they use an aggressive investment strategy and a conservative financing strategy, and conversely, a conservative investment strategy and an aggressive financing strategy. Wanguu (2015) examined the impact of aggressive working capital policy on the profitability of non-financial firms listed at the Nairobi Securities Exchange. The findings of the study found that there is a significant positive relationship between profitability and an aggressive investment strategy and a significant negative relationship between profitability and an aggressive financing strategy. Niigatu (2015) in his paper on working capital management and profitability of Ethiopian companies made two important conclusions. The first is that a company's working capital management strategy can be characterized as conservative, moderate, or aggressive only if it is compared to the strategy of a similar company of the same business. The second is that there are no absolute measures on what is considered an aggressive or conservative working capital management strategy. Also, a significant positive relationship between current assets to total assets ratio and profitability measures has been observed. On the other hand, results show a significant positive relationship between current liabilities to total assets ratio and profitability.

2.3. Cash conversion cycle

Cash conversion cycle is the most commonly used measure of working capital management efficiency. The cash conversion cycle represents the days required to convert a cash outflow into a cash inflow, that is, the time in which money is tied up in a company's business activities (Talonpoika et al., 2014). The indicator represents the time between the outflow of money to settle liabilities to suppliers and the inflow of money from the collection of trade receivables. The goal is to keep the time between the payment of liabilities and the collection of receivables as short as possible, so sometimes the cash conversion cycle takes on a negative value. The cash conversion cycle consists of three basic components, namely: the day of stock binding, the day of collection of trade receivables and the day of payment of trade payables (Gitman & Zutter, 2011). The length of the cash conversion cycle is determined by summing the days of tying inventories and the days of collection of receivables from customers and deducting trade payables (Brigham & Ehrhardt, 2005).

There are significant differences in the duration of the business cycle, and thus the cash conversion cycle among industries. Many authors have analysed the cash conversion cycle across different industries so there have been different values between firms of different industries where the value of the indicator has been most affected by inventories. On the one hand, some industries use larger stocks in their business, and the problem is even bigger if they have several thousand types of stocks in stock; some do not have stocks at all or they are very small (service activities, for example) and some wholesalers have small stocks, since they are only an intermediary between producers and retailers so stocks are briefly kept in stock. On the other hand, different companies have different choices in choosing inventory valuation methods which will also affect the value of the indicator differently.

When we talk about credit policy, i.e. the payment of trade payables and the collection of trade receivables, the market in which the company operates will have the greatest impact on the value of the cash conversion cycle. Companies operating in economically developed countries will pursue stricter credit policies, which will result in faster collection of receivables. On the other hand, companies operating in countries with less developed markets will pursue more moderate credit policies. This is because it often happens that the creditor is dependent on the debtor, especially when the debtors are large companies, and the creditors or suppliers are small companies that deliver goods and services exclusively to one customer on whom they consequently depend. This is often an advantage for such a supplier in terms of ease of doing business, but the disadvantage is the high risk of liquidity of the business in case of difficulties in paying the sole debtor. In such cases, debtors resort to various compensations and settlements, which for the creditor presents difficulties in the continuation of business, often bankruptcy and liquidation. According to Tepšić (1985), the size and structure of working capital is optimal until the dynamics of business change caused by changes inside or outside the company.

Many authors have analysed and proven that a shorter cash conversion cycle will have the effect of increasing profitability. Dong & Sue (2010) analysed the relationship between working capital management and profitability. The results showed a strong negative relationship between profitability and cash conversion cycle. A decrease in the cash conversion cycle will affect the increase in profitability. Managers can create positive value for their shareholders by maintaining each component of the cash conversion cycle at an optimal level. Managers will increase the profitability of the company by reducing the number of days of receivables and inventories as well as increasing the number of days of payment of liabilities to suppliers. Vural et al (2012) investigated the relationship between the components of working capital management and the performance of manufacturing companies listed on the Istanbul Stock Exchange Market. The results show that the receivables collection period and the cash conversion cycle are negatively related to the company's profitability, which means that by shortening the receivables collection period and the cash conversion cycle, companies can increase their profitability. Also, Nigatu (2015) and many others in their papers get a significant negative relationship between the cash conversion cycle and the profitability of the sampled firms.

3. Methodology

In this chapter, empirical research was conducted on a selected sample. In order to achieve the set goals and prove the hypotheses, descriptive statistics[1] were made for all variables. Using

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[1]   Descriptive statistics is part of the author's doctoral thesis.

descriptive statistics, investment and financing strategies in working capital were analysed. Also, the calculation of net working capital was made, to determine which working capital management strategies are used by companies in the observed industries. Using financial analysis techniques, the authors calculated the cash conversion cycle and analysed it in the observed industries. A six-year time period (2010–2015) was observed.

3.1. Sample

The sample includes 276 small and medium-sized enterprises in four industries, which account for the largest share in terms of number of enterprises, number of employees and value added. Data were collected from the basic financial statements of the balance sheet and the profit and loss account from the website of FINA (Croatian Financial agency). The subject of the analysis are all companies for which audit reports were available because only they contain all the necessary data for analysis. Table 1 shows small and medium-sized enterprises by number of enterprises, employment and value added, according to the observed industries.

Table 1: Small and medium-sized enterprises by sector in 2015

	Enterprises		Employment		Value added (000')	
Total	146 197		687 771		94 470	
Manufacturing	19 558	13,38 %	162 926	23,69 %	20 246	21,43 %
Construction	17 557	12,01 %	86 418	12,56 %	10 500	11,11 %
Wholesale and retail	37 265	25,49 %	152 923	22,23 %	20 864	22,09 %

Source: Croatian Bureau of Statistics, DZS, www.dzs.hr

Table 1 shows the aggregate data on wholesale and retail trade, as they are managed together by the Croatian Bureau of Statistics. However, in this paper, wholesale and retail trade were observed separately in such a way that each company was observed separately and classified into one of the listed activities. The table shows that the manufacturing sector has the largest influence in the economy of small and medium enterprises, as it employs the most workers and has the highest added value when taking into account the individual values of wholesale and retail.

3.2. Data and variables

Following the example of other studies, the appropriate variables were selected that were used to measure the investment strategy, financing strategy and calculate the cash conversion cycle. The ratio of current assets to total assets is used to measure working capital investment strategy (Weinraub & Visscher, 1998). A lower ratio indicates a more aggressive investment strategy. The ratio of current liabilities to total assets is used as a measure of working capital financing strategy (Weinraub & Visscher, 1998). A higher ratio indicates a more aggressive financing strategy. To calculate the cash conversion cycle, the variables receivable collection days, inventory binding days and payables to suppliers are used. Companies with a shorter cash conversion cycle should have higher profitability.

4. Empirical analysis

At the beginning of the empirical analysis, a descriptive statistical analysis was made. For the observed variables, the arithmetic mean, standard deviation, minimum and maximum value and the number of observations of each variable are given. The operating cycle and cash conversion cycle were then calculated.

4.1. Descriptive statistics

Table 2 shows the working capital investment strategy by sector.

Table 2: Ratio of current assets in total assets, from 2010 to 2015

	Ratio of current assets in total assets	Individual ratio of current assets in total assets – Average (%)	Individual ratio of current assets in total assets – Standard deviation (%)	Individual ratio of current assets in total assets – Minimum value (%)	Individual ratio of current assets in total assets – Maximum value (%)
Construction	60,20 %	56,79 %	20,39 %	6,42 %	100,00 %
Manufacturing	47,87 %	52,89 %	20,70 %	10,87 %	100,00 %
Retail	54,77 %	61,01 %	23,39 %	8,12 %	100,00 %
Wholesale	68,55 %	74,86 %	20,15 %	7,20 %	100,00 %
All sectors	58,44 %	62,02 %	22,82 %	6,42 %	100,00 %

Source: part of author's PhD thesis research

Working capital management involves determining the amount and composition of current assets and their financing (Bellouma, 2011). The relationship between current assets and total assets will lead to the conclusion of what investment strategy is implemented by companies in the observed sectors. As stated earlier, a conservative investment strategy implies a higher level of investment in current assets, i.e. higher liquidity. An aggressive strategy implies a minimum level of investment in current assets or less liquidity. The above data show that companies in all four observed sectors implement a conservative policy because their share of current assets in total assets is over 50%. The most conservative investment policy is implemented by wholesale companies, which have the largest share of current assets in total assets, averaging 74.86%. The average deviation from the average is 20.15%. The least conservative policy is implemented by companies from the manufacturing sector with a share of current assets in total assets averaging 52.89%. The average deviation from the average is 20.70%. The conclusion is that Croatian small and medium enterprises use a more conservative investment strategy, which is characteristic of companies operating in countries with less developed economies and financial markets in which the business environment is uncertain. In such countries, future business is not easily predictable which often results in fluctuating cash flow. For such companies, the priority is liquidity and security as opposed to

profitability and high risk, as this is the only way they can survive in the market and respond to different market demands accordingly.

Table 3 shows the working capital financing strategy by sector.

Table 3: Ratio of current liabilities in total assets, from 2010 to 2015

	Ratio of current liabilities in total assets	**Individual ratio of current liabilities in total assets – Average (%)**	**Individual ratio of current liabilities in total assets – Standard deviation (%)**	**Individual ratio of current liabilities in total assets – Minimum value (%)**	**Individual ratio of current liabilities in total assets – Maximum value (%)**
Construction	41,86 %	36,19 %	19,04 %	5,88 %	96,08 %
Manufacturing	31,22 %	38,35 %	21,62 %	1,85 %	100,00 %
Retail	41,80 %	46,32 %	22,97 %	4,25 %	99,16 %
Wholesale	42,53 %	47,51 %	23,15 %	0,35 %	99,38 %
All sectors	39,38 %	42,28 %	22,35 %	0,35 %	100,00 %

Source: part of author's PhD thesis research

The relationship between current liabilities and total assets will lead to the conclusion of what kind of financing strategy is implemented by companies in the observed sectors. Table 3 shows that Croatian small and medium-sized enterprises in the observed sectors are implementing a conservative financing strategy because their share of current liabilities in total assets is below 50%. The most conservative financing policy is implemented by companies from the construction sector, which have the smallest share of current liabilities in total assets, on average 36.19%. This amount deviates from the average by an average of 19.04%. The least conservative policy is implemented by companies from the wholesale sector with a share of current liabilities in total assets of 47.51% on average. This amount deviates from the average by an average of 23.15%. The conclusion is that Croatian small and medium enterprises use a conservative strategy of working capital financing. Hassani & Tavosi (2014) like many other authors point out that firms will achieve a balance between risk and return if they combine a conservative investment strategy and an aggressive financing strategy or an aggressive investment strategy and a conservative financing strategy. Croatian companies in the sample use a conservative investment strategy and a conservative financing strategy, which will result in the creation of opportunity costs of unused funds on the one hand, and the use of more expensive long-term debts on the other. Both will result in lower profitability.

The authors calculated the net working capital of companies in the observed sectors, on the basis of which they drew conclusions about the working capital management strategy implemented by Croatian small and medium enterprises. Net working capital is the difference between current assets and current liabilities. Net working capital can take on both positive and negative values. A positive value indicates that part of the current assets are financed from long-term sources while a negative value indicates that part of the fixed assets are financed from current sources. Tables 2 and 3 show that Croatian small and medium-sized enterprises have a positive value of net working capital, i.e. their current assets are higher than their current liabilities, which indicates a conservative working capital management policy. In all sectors, the share of current assets in total assets is higher than the share of current liabilities in total assets. A negative working capital value would indicate an aggressive working capital management strategy.

4.2. Financial analysis techniques

The following is a descriptive statistical analysis of the variables needed to calculate the cash conversion cycle across the observed industries. Table 4 lists the arithmetic mean, standard deviation, minimum and maximum value for the observed variables. The operating cycle and cash conversion cycle were then calculated.

Table 4: Descriptive statistics – days of collecting receivables (DCR), days of inventories stocked (INV), days of payments to suppliers (DPS), in the observed industries

	Arithmetic mean	Standard deviation	Minimum value	Maximum value
Construction				
DCR	74,88	38,45	0,46	222,49
INV	60,50	110,75	0,64	840,56
DPS	87,73	48,72	6,91	283,93
Manufacturing				
DCR	66,90	41,93	0,33	211,97
INV	97,82	146,36	2,30	930,97
DPS	69,00	51,97	4,20	305,78
Retail				
DCR	26,75	22,92	0,27	110,71
INV	98,67	90,08	0,91	486,58
DPS	63,22	47,41	1,03	270,20
Wholesale				
DCR	79,67	61,79	2,78	342,05
INV	64,76	44,85	0,65	238,59
DPS	64,72	53,72	1,53	380,81

Source: Authors

Table 5 calculates and shows the operating cycle and cash conversion cycle for companies in the observed industries.

Table 5: Operating cycle and cash conversion cycle in the observed industries

	DCR	INV	DPS	Operating cycle	CCC
Construction	74,88	60,50	87,73	135,38	47,65
Manufacturing	66,90	97,82	69,00	164,72	95,72
Retail	26,75	98,67	63,22	125,42	62,20
Wholesale	79,67	64,76	64,72	144,43	79,71

Source: Authors

Retail companies will have the shortest collection days. It takes them 26.75 days to convert their trade receivables into cash. This was also to be expected as the retail process is the last step in the distribution of goods where retailers sell goods in small quantities to end consumers who mostly pay in cash. Wholesale receivables companies will have the longest collection days. It takes them 79.67 days to convert their trade receivables into cash. Wholesalers sell goods to other companies with which they most often have long-term business relationships. Precisely because of maintaining good business relations, wholesalers often give them good credit terms, while companies use deferred payment or trade credit as the most common source of financing.

The amount and types of inventories that a company owns are most influenced by the sector. The longest days of stock binding have companies from the manufacturing sector in the amount of 97.82 days and companies from the retail sector in the amount of 98.67 days, which was to be expected because they have the most types of stocks. When we talk about companies operating in less developed countries, then we can state that the most common motive for keeping high stocks is caution, i.e. keeping safety stocks, especially if companies import raw materials and merchandise. Companies in these sectors cannot afford the risk of uncertainty of the time between ordering and delivery of stock. In manufacturing sector companies there may be interruptions in the production process while in retail there may be lost current sales, but also future ones. High inventories imply high storage costs. Inventories are best managed by companies in the construction sector that have inventory binding days of 60.50 days and wholesale trade days of 64.76 days. Among the observed industries, companies of the construction sector have the shortest days of stock binding, since they most often hire subcontractors. Shorter days of stockpiling at wholesalers are also expected because they are distributors, resellers who usually work from offices where there are no goods or from warehouses where there is a small display of goods that are usually kept there briefly just to prepare for their customers. Most trade credit is used by companies in the construction sector, while companies in the other three sectors have approximately equal paydays to suppliers.

Following the latter, the construction sector will have the fastest cash conversion cycle. Although they are second in terms of the amount of the day of collection of receivables, they effectively use the trade credit of suppliers, and due to the specifics of the business, they do not have high stocks. Companies from the manufacturing sector have the longest cash conversion cycle because they are burdened with high inventories, while their payment obligations to suppliers are slightly higher than the collection of receivables from customers. Precisely because of the long days of tying stocks, companies should manage stocks more efficiently, i.e. increase the turnover of stocks. When we look at consumer credit and trade credit, companies in the construction sector, manufacturing sector and retail trade have longer payables to suppliers than the date of collection of receivables, while in wholesale trade the

situation is reversed. The conclusion is that wholesalers are import-oriented where the rules of crediting by suppliers are stricter.

5. Conclusion

The main goal of this paper is fulfilled. The working capital management strategies of small and medium enterprises through four industries were analysed. The analysis confirmed that companies in all four observed industries pursue a conservative investment strategy and a conservative working capital financing financing strategy, which is in line with expectations for companies in post-transition countries. This confirms the first basic hypothesis H1: Croatian small and medium-sized enterprises implement a conservative working capital management strategy. Also, it was found that there are differences in working capital management strategy among different industries. The most conservative investment strategy is implemented by wholesale companies that have the largest share of current assets in total assets, while the least conservative strategy is implemented by companies in the manufacturing sector. The most conservative financing strategy is implemented by companies in the construction sector, which have the smallest share of current liabilities in total assets, while the least conservative strategy is implemented by companies in the wholesale sector. The second basic hypothesis H2 was also tested: Companies operating in industries with a shorter cash conversion cycle pursue a more aggressive working capital management policy. The cash conversion cycle in enterprises of all observed industries was calculated and analysed. The shortest cash conversion cycle is in the construction sector of 47.65 days and in the retail sector of 62.20 days, while the least conservative investment strategy is implemented by companies in the manufacturing and construction sectors. The least conservative financing strategy is implemented by companies in the retail and wholesale sectors. This partially confirms the second basic hypothesis.

The focus of this paper is on small and medium enterprises, which are the most represented in the structure of total small and medium enterprises in the Republic of Croatia. Although there are no absolute measures on what can be considered an aggressive and conservative working capital management strategy, the above characteristics are useful in understanding how companies manage working capital. It is most expedient to determine the aggressiveness and conservatism of working capital management strategies by comparing companies within the same sector or by comparing individual companies with previous results. There are differences in the obtained mean values of working capital management strategies among the observed industries.

The scientific contribution is manifested in setting measures of aggressiveness and conservatism of investment and financial strategy in the observed industries that will serve managers to compare their companies given that little data is available on which specific strategies companies use through different industries. The scientific contribution is reflected in the information on inventory management, consumer loans and trade credits of suppliers and finally the cash conversion cycle, which will be very helpful to managers to compare their own efficiency and make possible proposals to shorten the cycle.

Further research should focus on comparing companies from different countries as well as companies of different sizes. For the risk-return ratio to be moderate, a conservative investment strategy should be combined with an aggressive financial strategy, and a conservative financial strategy with an aggressive investment strategy. Working capital management strategies will depend on the one hand on management decisions within the

company such as chosen inventory management methods and consumer loans, and on the other hand on factors outside the company such as trade credits of suppliers, bank loans especially in bank-centric markets where companies have narrowed funding choices.

The limitations of the study were most present in data collection. The intention of the research was to include as many companies as possible. Unfortunately, most small and medium-sized enterprises in Croatia were not subject to audit, so the audit reports, which contain all the data needed for analysis, were not available. For a large number of companies, only part of the required data was available so they were not suitable for analysis. Therefore, all companies that published all the necessary data for a continuous period of 6 years were included in the analysis. Given that small and medium-sized enterprises publish mostly abbreviated financial statements in which there is not all the necessary data for the subject analysis, the contribution to this topic is thus more significant.

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FUTURE AT STAKE: KEY PILLARS AGGRAVATING CROATIAN PATHWAY TO PROSPERITY

ABSTRACT

Prosperity is an omnipotent and ultimate development goal. Its multidimensionality broadens from the core simplicity of a pure economic myth of society hooked on growth towards augmented reality enriched by societal and environmental aspects. Although current mainstream research still predominantly narrows the aspect of growth onto its pure economic dimension, interdisciplinary of opened social sciences rooted in the sociology of economics and environmental economics promoted an inclusive vision of enriched future development pathways.

This paper primary goal is set to investigate the interrelation between two Legatum Prosperity Index (PI) pillars Enterprise Conditions and Social Capital in Croatia within the European Union frame. The paper also observes the relationship towards the other pillars of PI namely: Safety & Security, Personal Freedoms, Governance, Investment Environment, Market Access and Infrastructure, Economic Quality, Living Conditions, Health, Education, Natural Environment. Pillars themselves are categorised into three domains: Inclusive Societies, Open Economies and Empowered People aiming to ensure a holistic approach to the topic investigated.

The panel sample included EU-27 countries between 2007 and 2020. The overall number of observations is 378 and the analysis included two methods: bivariate correlation and hierarchical multiple linear regression (through three models).

The results gained show that Investment Environment, Market Access and Infrastructure, Education, Governance pillars positively affect Enterprise Conditions of EU-27 countries. Although Social Capital has a significant and positive effect on Enterprise Conditions but is not strong. Statistically significant but the weak negative link between Natural Environment and Safety & Security with Enterprise Conditions is also shown.

Finally, the conclusion, limitations and further research development in the topic frame are stated.

Keywords: *prosperity index, enterprise conditions, social capital.*

1. Introduction

In seems as the contemporary global civilisation fell into a trap of the Greek mythic story of King Midas, taking for granted that economic interest (wealth) brings all together with the omnipotent wellbeing for an individual as well as for the collective. The redundant, narrow economic perspective long prevailing in our greedy developmental frames has led towards different challenges contemporary societies are facing nowadays: climate change, environmental degradation, overconsumption, social inequality and strengthening authoritarianism topped up with the recent pandemic caused the crisis. Seems as thou the rise of the never-ending economic growth postulated in the Anthropocene has reached the dead end.

The holistic, "Beyond GDP initiative" approach on the other hand seeks a prosperous society opened towards new perspectives enriching and reshaping the ways we live in a contemporary world for a better and inclusive future for all. In terms of the empowerment quest, we present the term of prosperity as defined by the Legatum Prosperity Index (LPI): „Prosperity is far more than wealth; it is when all people have the opportunity and freedom to thrive. Prosperity is underpinned by an inclusive society, with a strong contract that protects the fundamental liberties and security of every individual. It is driven by an open economy that harnesses ideas and talent to create sustainable pathways out of poverty. And it is built by empowered people, who contribute and play their part in creating a society that promotes wellbeing." Therefore, prosperity is about creating an environment where everyone can reach their full potential.
The building blocks of prosperity, as defined by LPI are spread through three main domains: Inclusive Societies, Open economies and Empowered people. Inclusive societies domain encompasses four key pillars: Safety and Security, Personal Freedom, Governance and Social Capital. Open economies domain includes Investment Environment, Enterprise conditions, Market Access & Infrastructure and Economic Quality. The green dimension of Empowered people includes Living Conditions, Health, Education and Natural Environment. Each of the four pillars developed under a specific domain is subdivided further into elements (detailed scheme available under Appendix II).

Starting from the point on thinking globally, but acting locally we use the dataset presented in the LPI in a period from 2007 until 2020 in our endeavour toward the diagnoses of the key vectors endangering the Croatian path to prosperity.

2. Theoretical framework

The interrelation between positive social conditions and determinations for entrepreneurship development has been emphasised in early work on Tocqueville (2010) in a time 19ᵗʰ century. Tocqueville emphasised the benefits of citizens' participation in different organizational structures in regards to entrepreneurial potential activity closely connecting entrepreneurship with social capital. Nowadays, after almost two centuries, in regards to The Republic of Croatia LPI results, we witness the discrepancy between exactly these pillars (namely Enterprise Conditions and Social Capital) and all the other pillars in the Croatian overall PI index result.

Entrepreneurship is undoubtedly interrelated with social capital. It is deeply embedded in social network structures (Aldrich, 1987; Aldrich and Zimmer, 1986; Johannison, 1988), while building stronger entrepreneurial social networks consequently will improve the economic performance of a community (Carson & Della Giusta, 2007).

Althou Light & Dana (2013) cross-cultural research findings show social capital promotes entrepreneurship only when supportive cultural capital is in place, and while every culture does not value entrepreneurship, and as noted by Madhooshi & Samimi (2015), social capital will not ultimately transpose into entrepreneurship in communities where entrepreneurship is not valued.

Socially embedded entrepreneur contributes towards and advances the coordination of activities in a complex economic system, minding extra environmental and social costs contemporary intensive economical activities created during the period of the last century time. Beside social capital numerous other influences interfere with society's prosperity as understood in a global society cultural frame as one study after another has shown in recent years that the tie between more stuff and more happiness has broken down as GDP growth mantra has been the single most important policy goal across the world for most of the last century.

Prosperity has been considered the most desirable real outcome of all human efforts however usually measured through the gross domestic output of the economy that may not capable to comprehend it effectively (Khan & Ahmad, 2016). Therefore, in understanding ways, prosperity is to be reached as the concept of human interests we connect the economic, societal and environmental aspect of human beings. Economic interests are ultimately rooted in the needs of the human organism in its dependence on the environment as noted by Maslow's hierarchy of needs theory (1943) but are not singled out as the only one.

Enterprise Conditions as a dependent variable and a prosperity determinant for this research paper was chosen due to the advantages at the disposal of the nation and the local community as noted by Porter (2004) and Brakman et al. (2006). If the value of socio-economic performance can be directly related to the measured entrepreneurial environment and level of entrepreneurship, numerous studies are showing the effect of prosperity index variables on Enterprise Conditions. The results of Mervar study (1999, 22) showed that economic growth in the early 1960s to the late 1980s was stronger in countries with higher investment and lower public spending, with fewer price distortions, less premium on the "black" foreign exchange market, lower inflation rate, stronger involvement in international flows, higher human capital, stable socio-political conditions. According to Mervar (1999, 23), the same is confirmed by the analyzes of the International Monetary Fund conducted in 1993 and 1994 in developing countries. The subject of discussion is always which of the combinations of these instruments is the best, but in general, the above relations have not changed to date. Mervar (1999: 31) cites the distinction between the "tangible gap" of countries with a lack of capital or natural resources and the "gap of ideas" of countries suffering from a lack of knowledge needed to create value in a modern economy, as Romer wrote (1993).

Grootaert (1998, 13) states that at the macro level, social capital becomes the fourth category of capital in the production function along with physical, natural, and human capital. Sobel (2002) believes that the analysis of economic performance should also take into account social capital, which significantly determines the efficiency of the use of natural, financial and human capital. The research of Putnam et al. Fukuyama (2000), Radman-Funarić (2013), Borozan and Radman-Funarić (2016), Radman-Funarić (2018) showed that social capital or at least parts of it have a favourable effect on economic performance. The results of Peiró-Palomino and Forte Deltell (2013: 16-17) suggest that higher levels of trust and respect for social norms may lead to more intense economic growth, but they show little support for the view that higher levels of active participation in associations have a positive impact on economic growth. According to Radman-Funarić (2013), the perception of respect for the norms of Croatian citizens is

positively related to economic effects, but it has not been established for social trust. According to Hardin (1982) and Knack and Keefer (1997) where state institutions can curb arbitrary behaviour by state leaders, government policies, for example, are more likely to be more credible or reliable and if formal institutions enforce laws more effectively and protect private contracts, trust and adherence to civic norms among citizens can strengthen.

Klitgaard and Fedderke (1995) point out that ethnic conflict is one of the biggest causes of social disintegration; it destroys the economy, physical and human capital and leads to the disappearance of social capital.

3. Prosperity Index position of The Republic of Croatia in EU-27

Table 1 shows average values of total Prosperity Index (PI) in Croatia for a period from 2007 until 2020 for all belonging pillars, average ranks in the same period and Croatian rank in EU-27 and World for 2020. By 2020 PI Croatia ranked 25th in the EU and 43rd in the World frame.

**Table 1:** The PI placement for Croatia in EU-27 and World

PI pillars	Average value 2007-2020 Croatia in World	Average rank 2007-2020 Croatia in World	Rang 2020	
			EU-27	World
Overall Prosperity Index	65,2	43	25	43
Inclusive societies				
		66	22,5	67,8
Social Capital	43,0	137	26	142
Safety & Security	81,9	33	16	28
Personal Freedoms	65,5	46	24	54
Governance	57,9	48	24	47
Open economies				
		55,2	23,5	53,8
Enterprise Conditions	52,5	77	27	84
Investment Environment	60,6	49	25	51
Market Access and Infrastructure	66,0	40	18	32
Economic Quality	56,8	55	24	48
Empowered people				
		40,3	21,8	43,3
Living Conditions	87,3	35	24	39
Health	75,3	52	23	56
Education	71,8	46	25	47
Natural Environment	64,1	29	15	31

Source: authors according to The Legatum Prosperity Index (2020b)

In regards to Enterprise Conditions pillar Croatia ranks 84th world country but is placed last EU-27 country in 2020. The average Enterprise Conditions rank in a period from 2007 until 2020 is 77. In a period from 2007 until 2020 quantitative indicators of conditions of entrepreneurship survival and development have not increased in regards to the year 2007. Data also show how results for the year 2020 (54.1) still rank Croatia below the 2007 level (55.2). The same result is found in the Social Capital pillar ranked 46.3 in 2007 and 44.4 in 2020. The results presented show Social Capital value is decreasing.

Overlooking Croatian world ranks position does not cause concern, especially in regards to the overall number of 167 countries participating in the PI. Differently, placing Croatia's ranks in an EU-27 frame its position is at the bottom of the scale, aside from Safety and Security, Market Access and Infrastructure and Natural Environment although even these pillars are not placed in the first half group of the countries listed. Data shows the same result in comparison to Eastern European countries (38 countries in total). By these results, Croatia ranks second half and bottom of the scale, aside for Safety and Security, Market Access and Infrastructure and Natural Environment pillars.

Chart 1: Croatia average PI pillars rank 2007-2020 in World
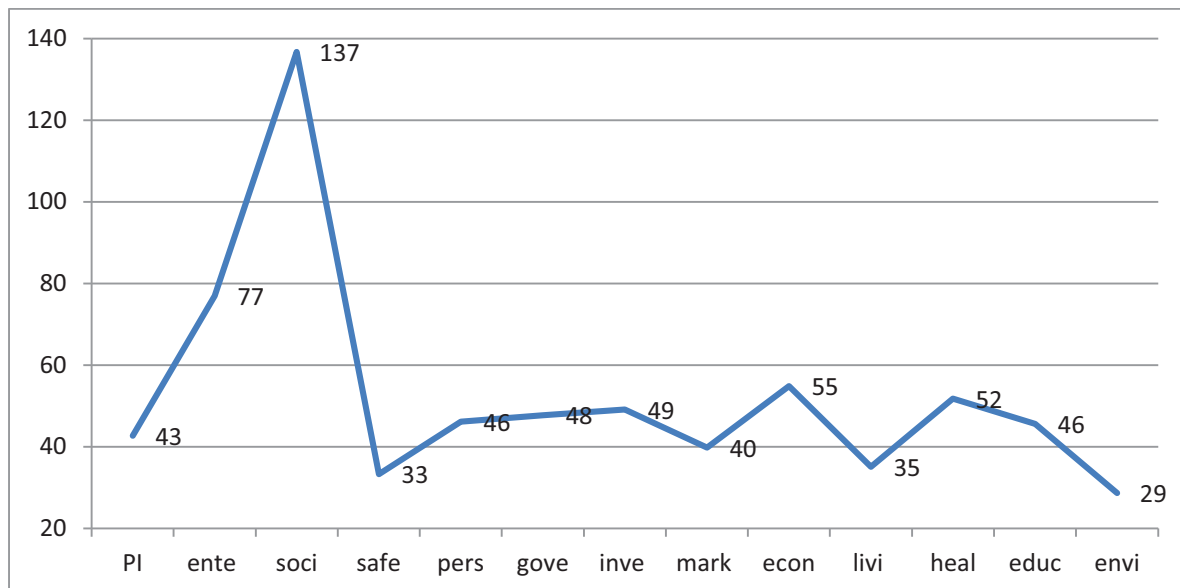
Source: authors according to The Legatum Institute (2020b)

Chart 1 data show average PI ranks for Croatia in the period 2007-2020 are at their worst performance in Enterprise conditions and Social Capital, where Social Capital is ranked almost at the end of the world ranking scale taking 137th out of 140 countries ranked. Enterprise conditions take the second-worst place in overall PI ranking 77th and placing this Croatia's result in the second half of the world scale.

Chart 2 shows the top-rated country in overall PI of EU-27 Denmark, lowest-ranked Bulgaria and Croatia. The significant difference is shown between Croatia and Denmark in all pillars but Safety and Security, Natural Environment and Market Access and Infrastructure. The same pillars differ between Croatia and Bulgaria, but unlike Croatia's distance from Denmark in other indicators, Croatia and Bulgaria are very close.

Chart 2: PI pillars rankings for Croatia, Denmark and Bulgaria
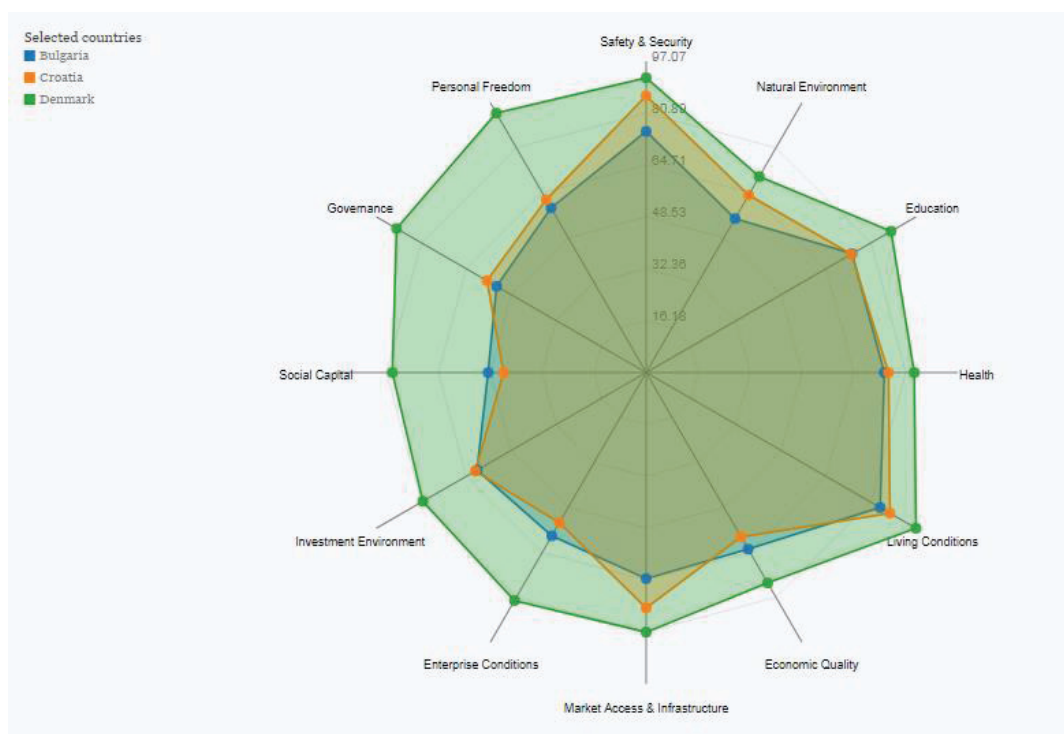
Source: authors according to The Legatum Institute (2020b)

Looking into the domains Croatia scores 2020 highest in Empowered People (average rank in EU-27 is 21,8 and World 43,3) in Inclusive Society (average rank in EU-27 is 22,5 and World 67,8) and lowest in Open Economies domain (average rank EU-27 is 23,5 and World 53,8). Within Inclusive Societies Croatia is top positioned in Safety & Security (16ᵗʰ in EU-27 and 28ᵗʰ in World), within Open Economies at Market Access and Infrastructure (18ᵗʰ in EU-27 and 32ⁿᵈ in World) and within Empowered People in Natural Environment (15ᵗʰ in EU-27 and 31ˢᵗ in World) Those variables of PI are the ones lifting Croatia's rank in the overall position. For example, Croatia's World rank in Social capital is 142ⁿᵈ and Safety & Security 28ᵗʰ lifting Croatia up the scale of Inclusive Societies domain (see: Table 1).

4. Research Methodology

4.1. Data and variables

The panel sample included EU-27 countries in the last 14 years for a period between 2007 and 2020. All data have been taken from The Legatum Prosperity Index (The Legatum Institute, 2020b). Table 2 shows 12 pillars and elements included in research showing quantitative value to the pillars. The data for each element is the result of several indicators. The value of the individual elements and indicators contained in the overall prosperity is the result of the data specified in (The Legatum Institute, 2020a).

Table 2: Variables used in the analysis

Abbreviation	Variables – PI components	Elements	Number of indicators*
ente	Enterprise Conditions	Domestic Market Contestability	3
		Environment for Business Creation	5
		Burden of Regulation	6
		Labour Market Flexibility	5
		Price Distortions	2
soci	Social Capital	Personal and Family Relationships	2
		Social Networks	3
		Interpersonal Trust	2
		Institutional Trust	6
		Civic and Social Participation	4
safe	Safety and Security	War and Civil Conflict	4
		Terrorism	4
		Politically Related Terror and Violence	6
		Violent Crime	4
		Property Crime	3
pers	Personal Freedom	Agency	8
		Freedom of Assembly and Association	3
		Freedom of Speech and Access to Information	6
		Absence of Legal Discrimination	7
		Social Tolerance	3
gove	Governance	Executive Constraints	5
		Political Accountability	4
		Rule of Law	4
		Government Integrity	6
		Government Effectiveness	7
		Regulatory Quality	4
inve	Investment Environment	Property Rights	6
		Investor Protection	5
		Contract Enforcement	4
		Financing Ecosystem	7
		Restrictions on International Investment	6
mark	Market Access and Infrastructure	Communications	4
		Resources	6
		Transport	7
		Border Administration	3
		Open Market Scale	4
		Import Tariff Barriers	3
		Market Distortions	3
econ	Economic Quality	Fiscal Sustainability	5
		Macroeconomic Stability	2
		Productivity and Competitiveness	4
		Dynamism	3
		Labour Force Engagement	5
livi	Living Conditions	Material Resources	7
		Nutrition	4
		Basic Services	5
		Shelter	4

Abbreviation	Variables – PI components	Elements	Number of indicators*
		Connectedness	6
		Protection from Harm	4
heal	Health	Behavioural Risk Factors	3
		Preventative Interventions	6
		Care Systems	7
		Mental Health	3
		Physical Health	5
		Longevity	5
educ	Education	Pre-Primary Education	1
		Primary Education	3
		Secondary Education	4
		Tertiary Education	5
		Adult Skills	5
envi	Natural Environment	Emissions	5
		Exposure to Air Pollution	3
		Forest, Land and Soil	3
		Freshwater	4
		Preservation Efforts	5
Note: *Individual value and rank see The Legatum Institute (2020b)			

Source: authors by The Legatum Institute (2020b)

In the frame of dependent variable Enterprise Conditions, the following pillars have been researched: Domestic Market Contestability, Environment for Business Creation, Burden of Regulation, Labour Market Flexibility and Price Distortions. The value of Social Capital was affected by the rankings of Personal and Family Relationships, Social Networks, Interpersonal Trust, Institutional Trust and Civic and Social Participation.

Table 3: Elements and indicators of Enterprise Conditions pillar

1	Domestic Market Contestability	Market-based competition
		Anti-monopoly policy
		Extent of market dominance
2	Environment for Business Creation	Private companies are protected and permitted
		Ease of starting a business
		State of cluster development
		Labour skill a business constraint
		Availability of skilled workers
3	Burden of Regulation	Burden of government regulation
		Time spent complying with regulations
		Number of tax payments
		Time spent filing taxes
		Burden of obtaining a building permit
		Building quality control index
4	Labour Market Flexibility	Cooperation in labour-employer relations
		Flexibility of hiring practices
		Redundancy costs

		Flexibility of employment contracts
		Flexibility of wage determination
5		Distortive effect of taxes and subsidies
	Price Distortions	Energy subsidies

Source: authors according to The Legatum Institute (2020b)

4.2. Methods

The primary goal of bivariate correlation analysis is to check how the set of independent variables correlates with the Enterprise Conditions. The aim is also to determine whether there is an interrelation between Enterprise Conditions and Social Capital pillar or other variables are more and/or significantly more interrelated to Enterprise Conditions pillar variable.

The relationship between independent and Enterprise Conditions are examined using multiple regression.

The formulas for the multiple regressions can be expressed as:

$$ente = a + \beta_1 soci + \beta_2 safe + \beta_3 pers + \beta_4 gove + \beta_5 inve + \beta_6 mark + \beta_7 econ + \beta_8 livi + \beta_9 heal + \beta_{10} educ + \beta_{11} envi + e$$

where Enterprise Conditions dependent variable, and others are independent variables, e is the error term involved in using the linear model to predict the value of Y, a is the intercept of the slope, and β is the coefficient of the independent variable (Kamki, 2016).

The first multiple regression model in Table 4 includes three independent variables: Economic Quality, Market Access and Infrastructure and Investment Environment, variables most commonly considered directly related to entrepreneurship in the frame of Open Economy domain. Sources and weights of each indicator are contained within The Legatum Institute, (2020a, 24-39). Model 2 in the table adds four new variables: Living Conditions, Health, Education and Natural Environment, compounding the Empowered People domain. Sources and weights of each indicator of the Empowered people domain are contained within The Legatum Institute, (2020a, 40-52). Model 3 adds additional four new variables: Safety and Security, Personal Freedom, Governance and Social Capital, seen as the societal, political and cultural surrounding. Sources and weights of each indicator of the Empowered people domain are contained within The Legatum Institute, (2020a, 11-23).

5. Results and discussion

EU countries are relatively homogenous, standard deviations of all variables are within the boundaries of expected. No one standard deviation is greater than the mean value.

The correlation matrix reveals that all the variables are significant at a 1% level. The correlation coefficient between some variables is greater than 0.8, which might be a sign of multi-collinearity between independent variables. Multi-collinearity is expected in the relation between overall PI and pillars due to individual PI results and is eliminated by investigating the relationship between the independent variables and the dependent variable Enterprise Conditions using multiple regressions. Enterprise Conditions are very strongly related to PI index ($r = 0.93$), Governance ($r = 0.92$), Market Access and Infrastructure ($r = 0.87$), Social

Capital ($r = 0.83$), Living Conditions ($r = 0.83$), Investment Environment ($r = 0.84$), Education ($r = 0.79$) and Economic Quality ($r = 0.64$).

Table 4 presents the result from the multiple regression on the three models outlined above. The overall fit of the models measured by the Adjusted R^2 is very high. It ranges between 0.82 and 0.90. In other words, it seems that the models explain much of the variance in the dependent variable.

Table 4: Results of hierarchical multiple linear regression

	Dependent variable:		
	`Enterprise Conditions`		
	(1)	(2)	(3)
Investment Environment	**0.492*****	**0.479*****	-0.019
	(0.060)	(0.060)	(0.061)
Market Access and Infrastructure	**0.706*****	**0.342*****	**0.431*****
	(0.047)	(0.074)	(0.060)
Economic Quality	0.019	0.012	0.036
	(0.040)	(0.039)	(0.034)
Living Conditions		0.164	-0.158
		(0.110)	(0.099)
Health		0.138	**0.165****
		(0.091)	(0.082)
Education		**0.440*****	**0.191*****
		(0.063)	(0.054)
Natural Environment		**-0.068****	**-0.049***
		(0.031)	(0.026)
Safety and Security			**-0.253*****
			(0.047)
Personal Freedom			-0.057
			(0.047)
Governance			**0.526*****
			(0.047)
Social Capital			**0.100*****
			(0.028)

	Dependent variable:		
	`Enterprise Conditions`		
Constant	-17.245***	-45.289***	8.668
	(2.129)	(5.080)	(6.057)
Observations	378	378	378
R^2	0.822	0.849	0.902
Adjusted R^2	**0.821**	**0.846**	**0.900**
Note:			*p<0.1, **p <0.05, ***p<0.01

Source: Authors

The results from the first model suggest that Market Access and Infrastructure, 0.706, strong and positively affect Enterprise Conditions (p < 0.01). This result is expected because market access and infrastructure is considered highly related to the Investments Environment. Investment Environment influence is statistically relevant (p < 0.01) with a slightly lower influence towards Enterprise Conditions 0.492. Both results are following Mervar (1999) survey results. Surprisingly, Economic Quality is insignificant and does not affect the Enterprise Conditions in the EU-27.

The results in Model 2, which includes Living Conditions, Health, Education and Natural Environment, show that the effect of independent variables from the first model is slightly smaller, and Economic Quality remains without statistical significance. Out of four newly added variables, only two are statistically significant (p<0,01), Natural Environment (-0.068) and Education (0.440). As expected the level of education significantly improves Enterprise Conditions, following Romer (1993) and Mervar (1999).

The third model is the strongest model in regard to Adjusted *R* squared. It comprises additional four new variables grouped under the Inclusive Societies domain. Out of newly added variables, Safety and Security, Governance and Social Capital are statistically significant (p<0,01). Interestingly, Safety and Security is negatively related (-0.253) to the Enterprise Conditions in accordance to Pinazo-Dallenbach, P., Roig-Tierno, N. & Mas-TurAre, A. (2015) Moreover, and Social Capital (0.100) is positively related to the Enterprise Conditions, partially in accordance to Putnam et al. (1993), Fukuyama (1995), Peiró-Palomino and Tortosa-Ausina (2012), Radman-Funarić (2013), Borozan and Radman-Funarić (2016), Radman-Funarić (2018), as the majority of research is based solely on social trust or the results differ in individual elements (variables) of social capital.

Governance are positively related to the Enterprise Conditions (0.526) in accordance Hardin (1982) and Knack & Keefer (1997) proving more reliable and efficient state institutions leads to greater mutual trust and respect for norms which creates a more favourable entrepreneurial environment.

Market Access and Infrastructure variable remains statistically significant and positively related (0.431) to the Enterprise Conditions. Adding a third group of independent variables Investment Environment loses its influence towards Enterprise Conditions taken over by the added variables showing how Governance contributes positively while Safety and Security contribute negatively towards Enterprise conditions. Suddenly, Health becomes statistically significant at 5% level and it is positively related to Enterprise Conditions, although this relation is not strong.

6. Conclusion

Prosperity goes beyond material pleasures and transcends material concerns. It resides in the quality of our lives and the health and happiness of our families. It is present in the strength of our relationships and our trust in the community. It is evidenced by our satisfaction at work and our sense of shared meaning and purpose. It hangs on our potential to participate fully in the life of society. Prosperity consists in our ability to flourish as human beings – within the ecological limits of our finite planet. The challenge for our society is to create the conditions under which this is possible. It is the most urgent task of our times and our generation.

The results of the study presented show Croatia scores lowest on Enterprise Conditions and Social Capital in LPI. Further analysis through three model approach has shown that Market Access and Infrastructure strong and positively affect Enterprise Conditions. Living Conditions, Health, Education and Natural Environment, show that the effect of independent variables from the first model is slightly smaller, and Economic Quality remains without statistical significance. Out of four newly added variables, only two are statistically significant Natural Environment and Education. The level of education significantly improves while Safety and Security are negatively related to the Enterprise Conditions. Social Capital and Governance, as well as Market Access and Infrastructure, are positively related while Safety and Security contribute negatively towards Enterprise Conditions.

Study limitations oblige us to declare how results show no interconnection between Enterprise conditions and Economic quality including GDP growth. Future research call upon research towards the relationship between Enterprise Conditions and all elements of Economic quality to discover which of the specific element is not interrelated to Enterprise conditions and which one has got the strongest connection. Furthermore, the analysis would improve due to the separate elements and indicator analysis in social capital towards Enterprise Conditions influence, a task for future research.

Since it is expected for all positive results to be closely bonded with conditions of entrepreneurship development it is necessary to select those variables that are not statistically relevant towards Enterprise conditions from the present analysis and closely check which of the variables included in the model disturb the results expected.

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Appendix 1: Correlation matrix
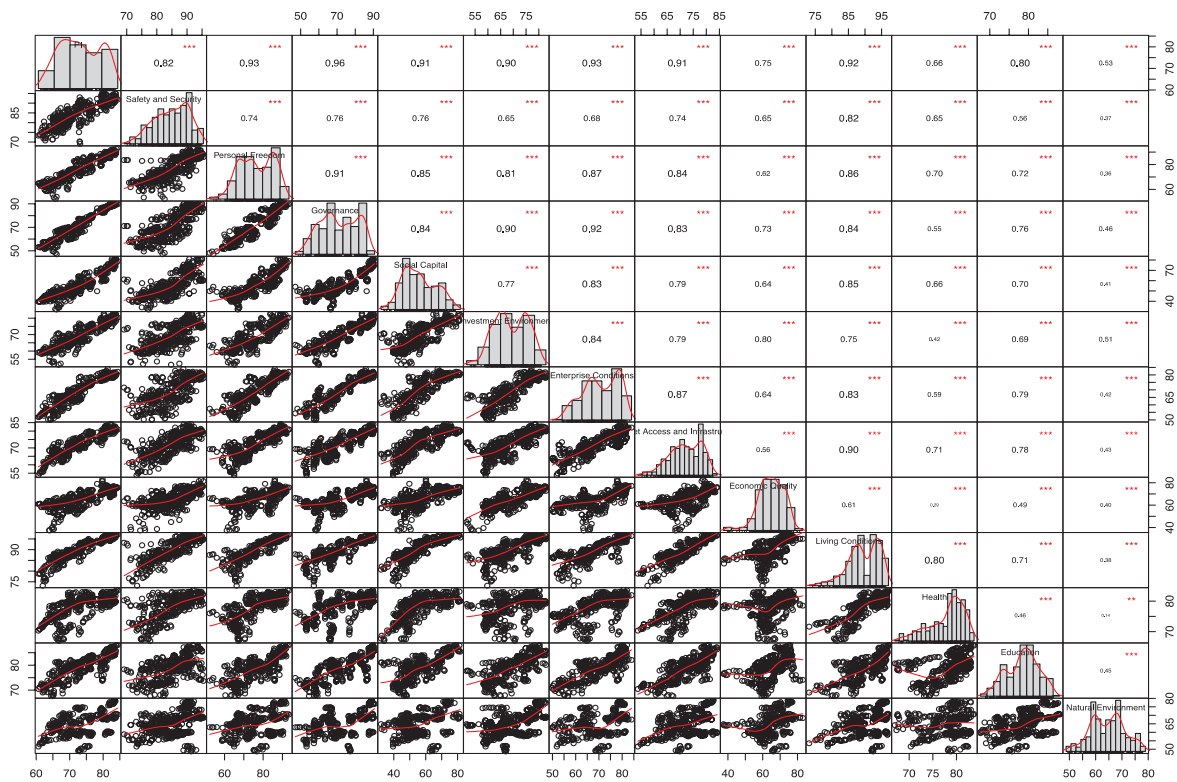
Appendix 2: The domains, pillars and elements of The Legatum Prosperity index
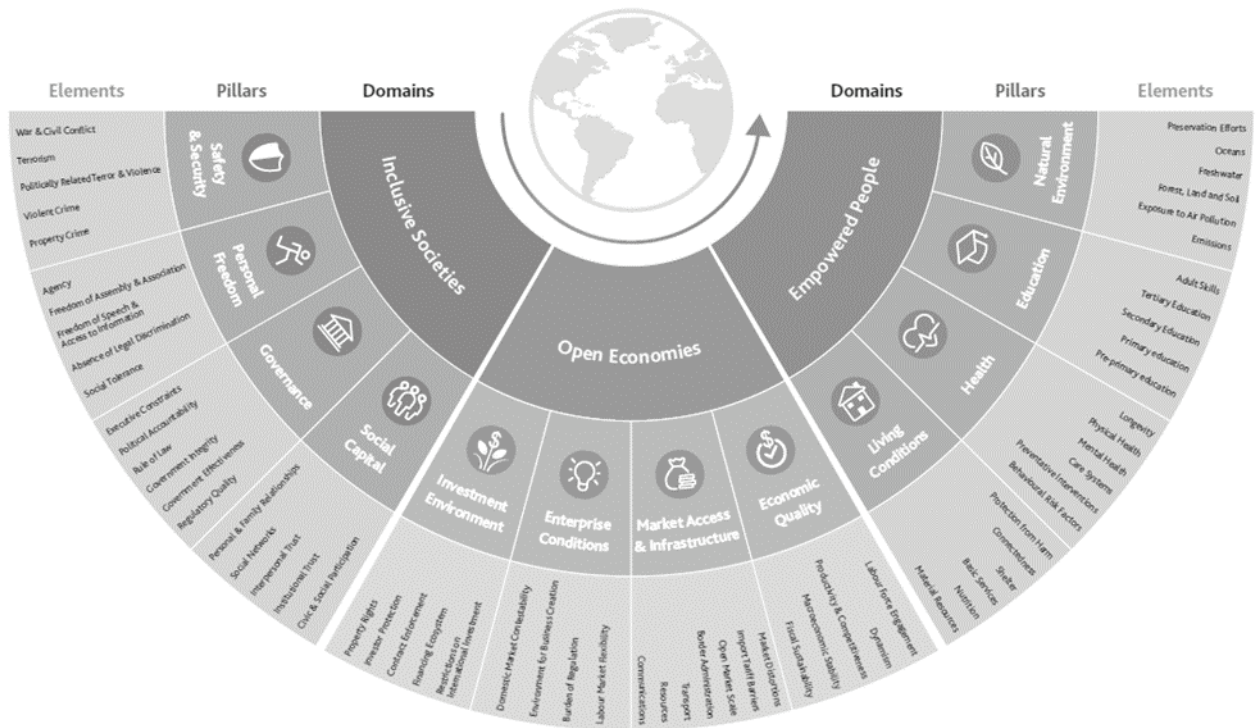
Source: The Legatum prosperity index (2020): **Measuring prosperity**, *pp. 4*
https://docs.prosperity.com/4116/0586/8547/Measuring_Prosperity.pdf (accessed 10 January 2021)

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ETHICS IN INTERNATIONAL MARKETING

ABSTRACT

Over the past 20 years, ethics as a discipline has become increasingly important for international business organisations. An increasing number of companies build their strategies on ethical principles and corporate social responsibility. Thus, ethics and corporate social responsibility are no longer purely business concepts; moreover, they represent a necessity for companies that need to implement them in policies and strategies if they want to go internationally. This paper emphasises the importance of ethics in companies marketing activities. This paper aims to show the international environment's ethical and unethical practices related to the international marketing mix. This article's scientific methods are the method of description, analysis, synthesis, induction, deduction, classification, and comparison. The paper presents positive and negative examples of ethical business practice. Ethical companies include the environmental issue and human health in their activities. Unethical companies caused material damage not only to their business activities but to human health overall. Ethical and moral values define good and bad behaviour in the business world. Business success and profit-making are in the very essence of any business, but such success can also be achieved through permeated business activities based on ethical values and principles. Ethical behaviour needs to be implemented through company culture and overall business practices.

Keywords: *International Marketing, Ethics, Corporate Social Responsibility.*

1. Introduction

Marketing plays a significant role in the business of any company. Marketing experts create communication and interaction with customers and all other stakeholders, thus creating the preconditions for successful product market placement. Ethics as a discipline is becoming increasingly recognised by the public, and during past decades its importance is growing in business organisations. An increasing number of companies build their business strategies on ethical chiefs and socially responsible business because this is what all stakeholders expect from them. On the other side, there are still business that are criticized because of their negative ethical lines according to product liability, personal selling tactics, false or misleading advertising, product dumping, price gouging, marketing to low-income consumers, foreign

child labour, green issues, and more other ethical areas (Dunfee, Smith, Ross, 1999.; Chonko, L. B., Wotruba, T.R., & Loe, T.W., 2002; Laczniak, 1999; Lund, 2000. in Nill and Schibrowsky, 2007). Although much progress has been made in marketing ethics, there are still many opportunities for improvement. Thus, ethical business will become the only correct and sustainable way of doing business.

2. The concept and significance of ethics

Ethics (Greek Ethos, custom) is the science of moral and morality. Sophists together with Socrates in the 4th st. B.C. began a period in ancient Greek philosophy where man and his morals are placed at the centre of events. Plato, a student of Socrates, made a great philosophical contribution to shaping ethics as a science. Furthermore, Aristotle, Plato's student, is considered the first and true founder of ethics as a philosophical discipline (Anić, Domović, Klaić, 2002). Ethics is a philosophy that studies and evaluates moral values: what is good or what is bad, what should be or what should not be (Kangrga, 2004). Ethics as a science is not focused on acquainting people and social communities with moral and ethical values. Its task is to occupy a certain attitude towards others' actions, and actions on the issue align with morality (Buble, 2006) or use a third party. To better understand the term ethics, it is necessary to compare it with the law and freedom of choice. Namely, certain behaviours are regulated by states, and people must behave by laws and regulations. Contrary to legally regulated areas, there is also an area where individuals and organisations have freedom of choice. There is ethics as a set of moral principles and values. For example, the selection of confidential information about a company's business (in the case of illegal actions) can be interpreted as an ethical action even though the business organisation is performed. Ethically acceptable action and the action should be acceptable to the wider community (Buble, 2006).

2.1. Business ethics

There are two perspectives in business ethics: ethical and business (economic). An ethical perspective starts from moral values such as honesty, justice, reliability, trust, rights, and duties. meaning everything is possible to indicate as "good" or "right" in a moral sense. However, from a business perspective, there are other basic categories: competitiveness, wages, profits, prices, efficiency, etc. A significant problem that arises in ethics is how to align ethical parameters with legal parameters. The law also attempts to incorporate what the community defines as good or bad, rules that must be followed or otherwise followed by sanctions. Ethics deals with responsibilities arising from the law, i.e., legally legal but unethical situations (Babić, 2002). Since the moral criterion is universal, any business activity may, under certain conditions, become morally suspicious or immoral. Business practice is articulated in the form of established practice as a set of actions and activities that are already largely established by forms and levels of expectations. Business ethics focuses on already established forms of business life. It is conceived as a theory that concentrates on those business places where offences usually occur and where an action's morality is expected to be tested for some reason (Miljević, 2010). Business ethics is closely related to marketing. It comes to the centre of every business strategy and becomes the subject of many discussions. In addition to its presence in business organisations, it also introudes other areas such as consumers and consumer rights, mass media and non-governmental organisations (Crane, Matten, Glozer, Spence, 2019). Although business ethics has become increasingly important in the last twenty years, it is still considered a relatively young discipline of ethics. As ethics is the science of morality, it is important to recognise how much morality is intertwined with economics, how much morality is present in everyday business today. Accordingly, we conclude that the history of morality in business is

as old as business itself. Interest in business success and wealth acquisition has always been incorporated in people with strong will and desire, ready to invest effort, capital, time, and decision-making. It could become a justification for certain actions that they would not justify in ordinary life (Babić, 2002).

3. International marketing

Doing business internationally has changed significantly in recent years. International marketing is a combination of business activities related to the flow of goods and services to end-users in more than one country. Marketing concepts, processes and principles are largely universally applicable. The goal of the business is to make a profit with a combination of marketing mix activities, i.e., promotion, distribution, pricing and sales of products or services (Cateora, Ghauri, 2009). A group of elements such as competition, legal restrictions, government controls, weather conditions and consumer changing habits belong to a group of non controllable elements. As such, they can influence the marketing plans outcome. The implications of international marketing activities have a great impact on our lives and offer a wide range of new opportunities and challenges (Horská and Berčík, 2014). The marketing team cannot control or influence on those activities.

3.1. Ethics and socially responsible business in international marketing

The fact is that marketing ethics, like legal and medical ethics, are present in our everyday life. Marketing decisions address some specific issues such as selling cigarettes to teens, selling products with a theme of violence, advertising that manipulates consumers, etc. Behaviour and business governed by ethical principles include all employees of the marketing sector: management, sales, distribution, customer service, advertising, and public relations. Ethical problems occur in small and medium enterprises, non - governmental organisations, non - profit organisations, as well as in multinational companies conducting international marketing (Murphy, Laczniak, Harris, 2017.) International business puts a challange for business ethics for two reasons: first, in international business, there is no complete regulation of business, and laws between countries. The second reason relates to the complexity of determining an action immoral. Moral requirements in internal business are smaller and clearer (Babić, 2002). Business entities are expected to behave in business relations that will be assessed as good in the business world. The Ethic Code adopted in Croatia in 2011 still sets only "general definitions" which represent only guidelines and simplified framework (Učur, 2014). Never the less, the corporate social responsibility is not a new term, especially in marketing and management. With increasing competition in the global economy and international management, the socially responsible business has gained more importance than before (Altinbasak-Farina, Burnaz, 2019). Corporate social responsibility (CSR) is an awareness of the new position and importance that companies have in modern, global society and the responsibility which arises from it. It is, in fact, a process in which companies align their relationships with a wide variety of social stakeholders who may, although they do not have to influence their business. CSR practice covers the whole sphere of influence and scope of activities of a company: what it produces, how it buys and sells, whether it complies with the law, how it employs and influences human resources development, how much it invests in the local community and respect for human and labour rights; how it contributes to the preservation of the environment (Atanacković, 2011). Awareness of the need for socially responsible and ethical behaviour is increasingly becoming an integral part of many companies' policies and strategies. Nevertheless, different stakeholders are placing increasing demands, and purposeful social interaction standards which are constantly rising (Albaum, G., Duerr, E. 2011).

Companies that have embraced business ethics understand that they need to manage their effects on society and the environment just as they manage their economic or financial performance, because, doing so, they can reap many benefits such as increasing reputation, increasing market share, better risk management, increasing employee satisfaction, increased innovation, easier access to capital and better financial results (Babić, 2014).

4. Methodology

The authors conducted qualitative research. Data on marketing activities of the observed companies were collected using available websites. Through available internet sources, the authors collected data analyzed, compared, synthesized, and interpreted. Secondary data sources consist of both scientific and professional literature in the field of international marketing. To better understand the role of ethics in marketing, especially from individual companies' managerial perspective, the following positive and negative examples of ethical business in international marketing are presented. Some of the most common ethical issues in international business include working standards and conditions, outsourcing, workplace diversity and equal opportunity, trust and integrity, child labour, supervisory oversight, human rights, the political arena, religion, the environment, bribery, and corruption. The research sought to answer key questions (Murphy, Laczniak, Harris, 2017) such as: what general factors should managers consider when challenged by questions about ethical behaviour in international business? Are their marketing practices perceived as "good" or "bad" for society? How can marketing managers assess whether their products are being sold morally and fairly? Which policies and actions of a marketing organisation that wants to operate at the highest ethical level should be implemented in their companies?

4.1. Positive examples of ethical business in international marketing

Consumer expectations are continuously changing, and companies are aware that quality and affordability are not the only product characteristics that customers consider. Companies' social and environmental practices represent a category that consumers are increasingly considering. Brands need to adjust to their stakeholders' expectations through finding their collective purpose and communicating it well (Gonçalves, 2019). Therefore, companies are nowadays judged by how they treat workers, customers, communities, shareholders, and the environment. In this section, examples of positive ethical business will be presented. These are companies that take care of the environment and human health in their activities.

4.1.1. Levis

The fashion industry is one of the biggest polluters in the world. Today's mass production of clothing and footwear requires many natural resources, especially water, which is the source of life on earth. Industry, with high consumption of scarce resources, produces 92 million tons of waste per year. The so-called "fast fashion" endangers the health of the planet because it involves the constant purchase of new footwear collections or clothing. There is an irrational waste of scarce resources and environmental pollution. The key raw material used in the manufacture of clothing not listed on the label is water. Levi Strauss & Co. is one of the world's largest clothing companies and a global leader in jeans' production. With their innovative design and production method, Levi's WaterLess products reduce water use in the finishing process by up to 96%. The appearance, feel, and quality of the product remains the same. Since launching the WaterLess program in 2011, Levi's has saved more than 1 billion litres of water in the production of Levi's Strauss & Co. products, including saving more than 30 million gallons of

freshwater through reuse and recycling. Furthermore, the company follows ways to reduce its carbon footprint by switching to less intensive ways of moving products from factory to store, including rail and container ships. They have also reduced energy consumption in shops and distribution centres through more efficient lighting and air conditioning. We analyzed whether these actions influenced Levis branding position. The Reputation Institute declared how companies that experienced increased scores in the last few years mostly did so by enhancing the perception of their corporate social responsibility. We used the Global RepTrak™ 100 that looks after company reputation, which is based on a global survey with more than 100,000 participants. The Global RepTrak™ 100, an annual study conducted by Reputation Institute, surveys how stakeholders perceive companies and how those perceptions affect purchasing behaviour (CSR). The Reputation Institute[1] states that companies that experienced increased scores in last few years largely did so by enhancing the perception of their corporate social responsibility (CSR). This shows shows that reputation is impacted more by what you stand for than what you sell.

Table 1: The comparison of Levis rankings on last five years.

Year.	Global RepTrak 100 By Reputation Institute
2020	6
2019	13
2018	14
2017	14
2016	20
2015	21

Source: http://levistrauss.com/wp-content/uploads/2014/01/Levi-Strauss-Annual-Report-2016-1.pdf

Table 1. shows perception of the apparel retailer and brand's citizenship rose significantly, aligned with active support of social and environmental issues.

4.1.2. Amazon.com, Inc.

Amazon.com, Inc. (Amazon) is the world's largest Internet store, founded in 1994 by Jeff Bezos. Amazon was originally known for selling books through its website (later they introduce a digital versions). Amazon has shown that its organisation respects competition rules and does not tolerate behaviours that are not in line with ethical principles. This was manifested through the Covid 19 pandemic and the case of the price of face masks and other hygiene supplies. Amazon has restricted vendors selling health and sanitation products such as face masks, disinfectants, and the like through the Amazon platform. The reason for such restrictions is Amazon's fight against price escalations of these products and the deceptive marketing associated with the ongoing Covid 19 pandemic. The company removed millions of products that spread false claims about the coronavirus and removed hundreds of thousands of ads and offers inflated prices. There were also bans on vendors raising prices on health products such as the masks and disinfectants. So, they tried to prevent rapid capitalisation and profit by greedy traders who wanted to make as much money as possible on vulnerable consumers who were in fear of a pandemic.

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[1] https://risnews.com/most-reputable-companies-2020-list-sprinkled-retailers

4.1.3. Dalsey Hillblom Lynn International GmbH

Dalsey Hillblom Lynn (DHL) is a German company offering logistics services. It is one of the leading logistics companies in the world. Their strategy for 2020 is based on corporate responsibility. They call it a "responsible life." They want to contribute to creating economic, social, and environmental values for stakeholders and the planet. Green logistics is logistics that performs its tasks efficiently while paying great attention to the increasingly current issue of the environment. It seeks to ensure sustainability so that today's decisions will not negatively impact future generations. Green Supply Chain seeks to reduce the negative impact of distribution system management and return logistics to eliminate any inefficiencies, unnecessary relocation of goods and packaging disposal. The goal of green logistics is to minimise the negative impact of logistics on the environment. DHL is one of the pioneers of green logistics. Their GoGreen environmental program is very interesting since it is also an expression of a strong sense of responsibility towards stakeholders and the environment. The program's main goal is to reduce and/or avoid greenhouse gas emissions and air pollutants. By 2050, all logistics-related activities will not pollute the environment, and greenhouse gas emission will be zero. The GoGreenas environmental program has accomplished so much since its beginning. Starting from the optimisation of transport routes, electric vehicles, environmentally friendly climates, smart lighting in their centres, logistics solutions that enable a circular economy, i.e., recycling, and reusing resources. DHL has joined the fight to preserve the planet and reduce greenhouse gas emissions through its environmental program. The GoGreen program resulted in a 30% reduction in greenhouse gas emissions compared to 2007.

4.1.4. Worldwide Fund for Nature (hereinafter WWF)

The Worldwide Fund for Nature (WWF) is an international non-governmental organisation founded in 1961. The international headquarters of the organisation is in Gland. They operate in more than a hundred countries working for a future in which people will live in harmony with nature. They want to secure a positive future: for the living world, rivers, forests, and seas, by working to reduce carbon emissions, avoid catastrophic climate change, and push for measures to help people live sustainably within the confines of a planet. The work of WWF is based on science, and they bring international experience to local communities. The organisation cooperates with various non-governmental organisations, local authorities, local population. It also works with the World Conservation Community and has formed a partnership with the United Nations, the World Bank, and the European Union. WWF's mission is to halt the degradation of the planet's natural environment and build a future for people to live in harmony with nature by conservation of world biodiversity, sustainable renewable natural resources, and the promotion of pollution reduction wasteful consumption.

At the end of this article three are three images presented with pictures 1., 2. and 3. demonstrating how organisation designs its promotional campaigns. These are advertising messages that point to our planet's state and seek to raise everyone's awareness about their own behaviour and impact on the environment. Marketers who are not truthfully oriented in ethical behaviour might look for legal loopholes. In practice, it is possible to find numerous situations where the law and self-interest are too inconsistent with marketers' instructions. The role of non-governmental organisations that could provide competent advice and examples of exemplary marketing ethics practices is of utmost importance.

4.2. Negative examples of ethical business in international marketing

In this section, we will analyse the negative examples of ethical business. These are companies that have caused material damage to their activities but also endangered human health. Those examples can serve as indicators of undesirable business practices condemned by the public and relevant institutions.

4.2.1. Takata Corporation

Takata is a Japanese corporation engaged in the production of automobile parts. Namely, this company is involved in one of the largest cars recalls in the industry's history. Takata has officially admitted to hiding evidence of a potential fault in their airbag inflating system. As it is one of the world's largest manufacturers, whose cushions are installed by many manufacturers worldwide, the number of potentially affected vehicles is significant. At the heart of the problem is an airbag inflator or a metal insert full of drive plates. Due to its strong explosive force, in some cases, it caught fire but also explode. Metal debris would pierce the airbag and seriously injure passengers. This error was associated with 16 deaths and 180 injuries. So, the device that allegedly serves to save lives endangers him even more (Burrows, 2018). The U.S. Highway Traffic Safety Agency expected the recall of 49.5 million inflators in the U.S. and over 100 million globally. It is estimated that the recall and repair of any vehicle with a faulty airbag will take until 2023. Takata estimated the recall cost at $ 24 billion in 2016, but that number continues to rise. The company went bankrupt in 2017. and was acquired by Key Saftey Systems (Burrows, 2018). This critical evidence of customer safety and its pro foundation is when it comes to safety-critical components. The question is whether it exists something much more safety-critical than an airbag. The conclusion leads to the importance of health-related and safety concerns in marketing. Picture 4. at the end of this article is presenting an airbag rupture.

4.2.2. Wanadoo

Predator is a dominant company that sets prices so low that competitors must leave the market after a while, and others do not want to enter a particular sector. For a predatory strategy to be rational, there must be an expectation that these current losses (or lost profits) will be recouped by future gains. This, in turn, implies that the company has some reasonable expectations about gaining market power after the predatory and that the profits of that later period will be large. Predatory pricing is illegal in many parts of the world, but the problem is proving predatory behaviour because it is difficult to distinguish it from competitive pricing. However, some prosecutions have proved successful (Baker, 2009). Wanadoo, an Internet service provider majority-owned by the French company Télècom, charged below-cost retail prices between March 2001 and October 2002. In this way, they wanted to take a large share of the market based on the offer of high-speed internet. The company was operating by a loss, but its market share increased from 46% to 72%, and at least one of the competitors left the market. The European Commission considered serious violations of competition and imposed a fine of 10.3 million euros. The predatory pricing strategy is risky due to the possibility of incurring large losses if competitors prove more resilient than expected. It is also an abuse of a dominant position and is not in line with legal regulations. Gaski (1999) researched marketing ethics literature according to the category of „obeying the law" and „acting in your interest". he concluded that marketers tend to end up acting ethically as long as they look after the law and proceed in their self-interest. Despite the prevailing perception that companies will act in the

best of intentions and adhere to ethical principles, this study demonstrates the importance of enacting rolling legislation.

4.2.3. World chocolate industry

In recent years, the world public has become increasingly preoccupied with protecting the environment on which human life quality depends. A significant place is occupied by protecting the environment, which has the task of preserving natural communities, reducing the risk to human life and health, and rational using natural resources and energy. There is no doubt that the degradation of Earth's ecosystems is an unstoppable process, and the result is the extinction or even complete extinction of many groups of plant and animal species. The global chocolate industry is to blame for the catastrophic destruction of rainforests in West Africa, where forests are being cleared for cocoa production. Traders (re) sell illegally produced cocoa in Ivory Coast protected areas, where rainforest areas have been reduced by more than 80% since 1960. Illegal cocoa in the supply chain is mixed with legally sourced cocoa, meaning that some of the most famous chocolates contain more than 40 per cent of the cocoa that comes from the Ivory Coast. Ivory Coast and Ghana are the world's two largest cocoa producers and the biggest victims of deforestation. Ivory Coast is losing forest areas the fastest among African countries. Currently, less than 4% of the country is covered by rainforest, while rainforests occupy 25% of the country's land area. Growing demand for chocolate in the world means that if nothing is done by 2030 more, there will be no forests on the Ivory Coast, according to the environmental organisation Mighty Earth, which published an investigation into the deforestation due to chocolate. Large companies said they were aware of deforestation problems for cocoa production and said they were committed to solving the problem. A Mars spokesman said the company wanted to "find the best ways to end deforestation and deforestation in the global cocoa supply chain but added that sustainable cocoa was too much of a challenge for each company individually, which is why Mars is teaming up with others in the industry. It would help solving the problem. Nestle stated that it "opposes the destruction of rainforests worldwide because it believes that this is one of the biggest environmental challenges that the world is facing. A representative of Mondelez, which, among other things, produces chocolates of the famous Milka brand, said that the company is actively working on preventing deforestation. The chocolate industry largely depends on the natural resource of cocoa. The production of the mentioned resource requires the destruction of forests, which destroys the ecosystem. Causally, in the future, the price of chocolate and cocoa-based products will be higher.

4.2.4. Sony Ericsson, Shell

Covert marketing is the conduct of product marketing activities without providing any information about the product or brand. In 2002, passers-by were stopped by actors (advertisers) hired by the advertising agency (Fathom Communications) for Sony Ericsson. The actors stopped passers-by, pretending to be tourists, asking for help with taking photos with their mobile device, which they claimed was recently purchased (Baker, 2009). Sony Ericsson spent $5 million on this campaign to encourage people to talk about their mobile device. The campaign lasted 60 days and involved 60 actors. It took place in 10 different cities, and the company was pleased with the results (Baker, 2009). Wall Street Journal discovered the fraud, and Sony Ericsson's marketing director defended such practices, saying such interactions are normal. (Baker, 2009). Covert marketing has now shifted to the digital platform. For example, companies hire retailers for e-commerce to positively evaluate and review their products. Thus, influencing product purchase decisions (Chaudhary, 2020.) Another example is Shell company Ltd. Oil giant Shell received a significant number of complaints about an advertisement

showing flower petals coming out of one of the refineries' chimney. Along with that photo, there was a claim: we use our CO2 waste to grow flowers (Baker, 2009). Association Friends of the Earth has also had complaints about such advertising. They felt that Shell was thus misrepresenting the impact of its own activities on the environment. Allegations such as the use of carbon dioxide to grow flowers and the use of sulfur to produce strong concrete have also been disputed. The Advertising standards authority (ASA) said that due to the lack of qualifications, most readers misinterpreted the statement: "We use our CO2 waste to grow flowers." This means that Shell uses all, or at least most, of their CO2 waste to grow flowers, while the actual amount was very small, relative to Shell's global activities (Tryhorn, 2007). This example has become one of the most famous examples of the green image abuse (Baker, 2009). In the picture 5. at the end of this article is the commercial of the Shell company with chimneys going fowers through.

5. Survey results

Table 2. summarizes information on each company's activities regarding an environmental issue and human health and whether these activities are ethical or unethical. Companies that operate ethically include environmental and human rights issues in their business activities. On the contrary, unethical companies cause material damage to their business activities and endanger people's health.

Table 2: Company's activities regarding an environmental issue and human health and whether these activities are ethical or unethical

Company	Environmental Issue	Human Health	Ethical Activities	Unethical Activities
Levis	x		x	
Amazon.com, Inc.		x	x	
Dalsey Hillblom Lynn International GmbH	x		x	
Worldwide Fund for Nature	x	x	x	
Takata Corporation		x		x
Wanadoo		x		x
World chocolate industry	x			x
Sony Ericsson	x	x		x
Shell	x	x		x

Source: Authors

6. Conclusion

Ethical and moral values define right or wrong behaviour in the business world. Today, many companies are striving to increase their sales volume, market share and profit overall. Sometimes this kind of greed leads to an unethical behaviour like applying aggressive sales methods, hiding information about the product or information about business activities. As presented in analysed case studies, the way managers operate their business affects long-term survival at international markets. When a company is transparent in its business and acts ethically, it creates a positive picture in the public's eyes. Thus, companies and organisations should care about the population and the environment in which they operate. In the essence of every business is profit and market share, but such could also be achieved through business activities that are permeated and based on ethical values and principles. The marketing mix
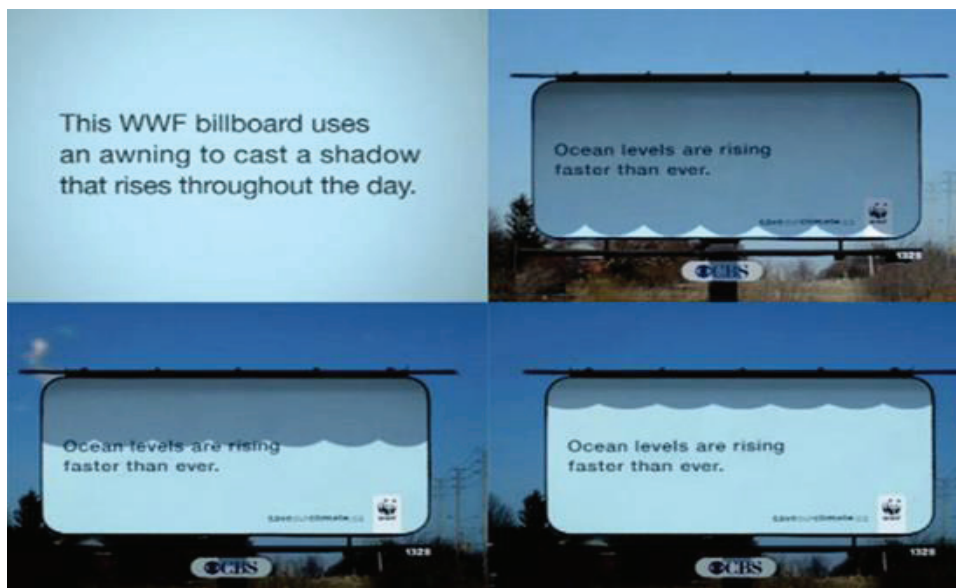
represents the basic framework for the development of further companies marketing strategies. Advertising and pricing policies implementation are the most common areas in which unethical practices take place. A section on ethical issues needs to be added to the marketing mix for its activities and processes to align with ethical principles. Ethical behaviour needs to be implemented through company culture and overall business practices. For organisations to act socially responsible and ethically, they must accept ethics as a significant marketing component. Companies that have embraced business ethics in their overall business understand the need to constantly evaluete their effects on whole society and the entire environment just as same as they manage their economic or financial performance because they can achieve the numerous benefits.

Picture 1: WWF – an advertisement presenting defosteration consequences

Source: https://ethicalmarketingnews.com/favourite-ethical-ads (accedded 14.07.2020)

Picture 2: WWF – an advertisement shows the consequences of ocean levels rising

Source: https://ethicalmarketingnews.com/favourite-ethical-ads (accedded 14.07.2020)

Picture 3: WWF – an advertisement appealing to people not to buy animal souvenirs

Source: https://ethicalmarketingnews.com/favourite-ethical-ads (accedded 14.07.2020)

Picture 4: Airbag rupture
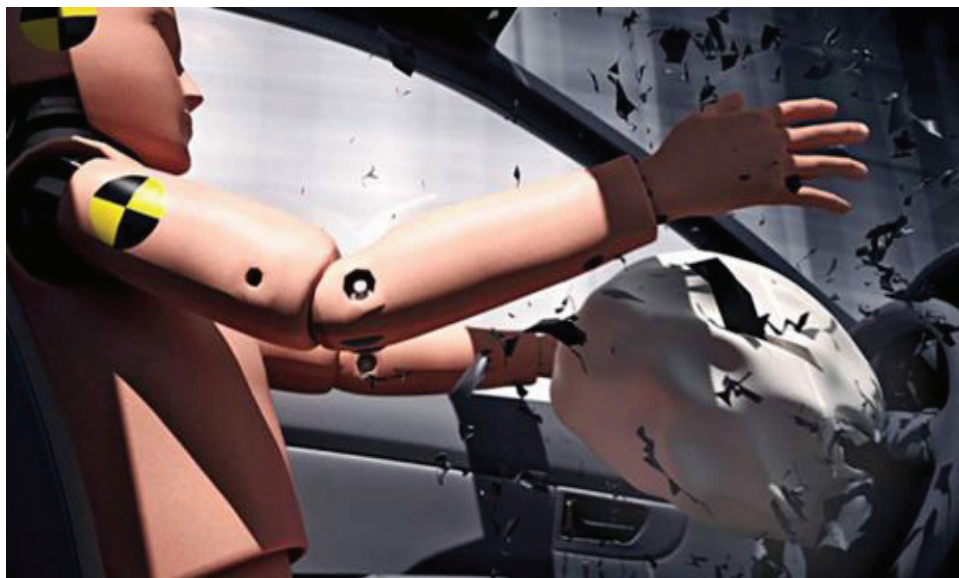
Source: http://www.kojiauto.hr/priprema-se-najveci-opoziv-automobila-u-povijesti/ (accedded 14.07.2020)

Picture 5: Shell company and the chimneys with the flowers coming out of it

Source: Tryhorn, C. (2007) No bouquets for Shell press ad. Available at: https://www.theguardian.com/media/2007/nov/07/asa.advertising (accedded 4.07.2020)

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INSTITUTIONS AND PRODUCT MARKET EFFICIENCY IN THE EUROPEAN UNION WITH EMPHASIS ON CROATIA

ABSTRACT

The positive relationship between product market efficiency (PME) and productivity has been established in the existing literature. The recent literature also suggests that at the root of the low PME lies a weak institutional framework. The analysis of the Global Competitiveness Index (GCI) indicators shows that Croatia has poor institutional quality and low PME. To test the hypothesis that there is a positive impact of the quality of institutions on the PME, this paper uses panel analysis on a sample of European Union (EU) countries and yearly data from 2008 to 2018, with a special focus on Croatia. We additionally test the hypothesis that countries that share common characteristics with Croatia, such as size, historical and cultural background, exhibit difficulties translating the quality of institutions to greater PME. We also investigate the joint effect of the quality of institutions and the tax burden, expecting that countries with better institutions have less detrimental impact of taxes on the PME. The results of the econometric analysis show a positive relationship between the quality of institutions and PME. The results also suggest that small countries might see less beneficial impacts of better institutional quality on PME than large countries, but this result is not robust. The same also appears to be true for Mediterranean countries compared to the rest of the EU member states. The socialist historical legacy does not appear to play a role in a relationship between institutional quality and consequent PME. The role of institutional quality in the relationship between taxation and PME appears to be negligible. Therefore, to improve the PME, a prerequisite for greater productivity and consequently economic growth, it is necessary to change the institutional framework. However, the efforts to achieve greater PME in Croatia through institutional change may in part be hindered by its size and its Mediterranean cultural and geographical characteristics.

Keywords: *quality of institutions, product market efficiency, global competitiveness index.*

1. Introduction

Over the last thirty years, the Croatian economy faced various challenges. The 1990s were a period of change in the political and economic system accompanied by the homeland war and a decline in the gross domestic product (GDP) of about 36%. The strongest increase in GDP was between 1999 and 2008 (about 45%), followed by the large crisis (2008-2014) when the economy fell about 12% (Eurostat). After 2014, economic activity resumed with 9% cumulative growth (by 2017), but in 2018 GDP still did not exceed 2008 levels. In line with the relatively moderate growth rates of GDP (1995 - 2008 and 2014 - 2017) and the strong recession (2008 - 2014), the Croatian economy is one of the poorest in post-socialist EU countries.

From the growth theory, it is known that relative downturn may be explained by the low accumulation of production factors and/or low productivity, with empirical studies suggesting that variations in productivity explain slightly less than half of the variation in income (Weil, 2009). The available amount of resources, their efficient use, and technological progress are imposed as important income determinants. A series of theoretical and empirical papers have recently confirmed that low product market efficiency is associated with poor economic performance and that reforms in this market could yield positive results. And the "root" of low efficiency and even slower technological progress according to recent research (Acemoğlu, Johnson & Robinson, 2001, 2005; Rodrik, Subramanian & Trebbi, 2004) is a weak institutional framework.

This paper focuses on Croatia when aiming to determine the role of the quality of institutions in the level of product market efficiency, a prerequisite of economic growth. To do so, we first analyze the data on the institutional quality and product market efficiency in Croatia using the Global Competitiveness Index (GCI) data. Afterwards, we use the static panel data analysis on a sample of 28 countries that were the EU member states from 2008 to 2018 to test the hypothesis that there is relationship between poor quality of institutions and low product market efficiency. We then broaden our analysis by acknowledging the possibility that certain country characteristics in terms of its size, its historical heritage and its geographical peculiarities may change the relationship between institutions and product market efficiency. Since the focus of our paper is on Croatia, we hence analyze if this relationship between institutions and product market efficiency is significantly different in the former socialist countries, Mediterranean countries, and small countries (small in terms of the total population) of the EU. We test the hypothesis that countries that share common characteristics with Croatia, such as size, historical and cultural background, exhibit difficulties translating the quality of institutions to greater PME. And finally, we analyze the joint effect of the quality of institutions and the tax burden, expecting that countries with better institutions have less detrimental impact of taxes on the PME. In this way, this paper approaches the issue of the relationship between institutions and product market efficiency in Croatia from many angles, thereby filling the existing literature gap on this topic, which is wide both in domestic and in foreign literature.

The structure of the paper is the following. Part 2 presents the literature review. Section 3 analyzes selected components of the Global Competitiveness Index for Croatia. Section 4 presents methodology and data used in the empirical estimation and Section 5 provides econometric results. Section 6 concludes.

2. Literature review

Problems related to economic activity and the dynamics of the product market are a matter of extensive research and economic interest. The consequence of this is a multitude of theoretical and empirical papers that analyze the macroeconomic effects of product market reforms that aim higher product market efficiency. The theoretical analysis of product market reforms suggests that product market deregulation reduces prices, increases real wages and if it facilitates the entry of new companies it also reduces the unemployment (Blanchard & Giavazzi, 2003), it increases competition and reduces mark-ups (Arnone & Scalise, 2005), reduces inefficiencies and makes the price stability policy more desirable (Cacciatore, Fiori & Ghironi, 2015). However, the theory suggests that short-term and long-term effects of these policies differ depending on how and when the policy is implemented. Deregulation reforms can be recessive in the short term and expansive in the long run. Most of the conclusions of the empirical literature, however, speak of the benefits that product market deregulation ensures to an economy. For example, the positive impact of competitiveness on productivity (Arnold, Nicoletti & Scarpetta, 2011; Bourlés et al., 2013; Correa-López & Doménech, 2014), economic growth (Allegra, Forni, Grillo, & Magnani, 2004) and decrease in the relative prices (Bouis, Duval & Eugster, 2016); as well as a positive effect of deregulation on investments (Ardagna, Nicoletti & Schiantarelli, 2005) in the OECD and EU countries, using different samples. The empirical literature finds no negative effects in the short term even in the unfavorable macroeconomic conditions. Since low productivity is predominantly linked to low product market efficiency, in this paper we focus on the product market efficiency.

This paper hence analyzes the determinants of the product market efficiency with a special focus on the quality of the institutional framework. Weil (2009) states that low product market efficiency is largely explained by the lack of relative productivity compared to technological progress. And the reasons for this gap can be found in the existing institutions, policies, and other factors, of which an unfavorable institutional framework appears to be the most prominent (Weil, 2009). Out of those determinants of (low) product market efficiency, Schwab (2015) explicitly focuses on three of them. One is the competitiveness, where opening a market forces the least productive companies out of the market and rewards the most productive ones, increasing the efficiency in the market. The second one are the fiscal policies which are believed to reduce product market efficiency through their distortionary effects (e.g. taxes). Only if they are adequately addressing the existing market failure in the market can they have a positive effect on product market efficiency. And finally the third determinant of efficiency, according to Schwab (2015) is the legal and regulatory environment which can directly impact the entry and exit of firms. Those are the institutions that we focus on in our paper. North (1990) defines institutions as the rules of the game in a society, or as limits set by humans in order to shape human interactions. For economic relations important economic institutions are those such as property rights, functioning markets, contracts and exchange mechanisms. The institutions may enhance market efficiency by addressing the market failures, ensuring an availability of information and thus enabling the prices to be the correct signals coming from the markets (Gilson & Kraakman, 2003).

The empirical research on the impacts of the quality of institutions on the market efficiency are relatively scarce. Adkins, Moomaw & Savvides (2002) analyze the market inefficiency as a distance from the production frontier and show that institutions that promote more freedom in the market reduce inefficiencies. They also show that one of the mechanisms through which economic freedom operates is increased efficiency rather than advances in knowledge.

Moroney and Lovell (1997) also find that planned economies operate farther from the production frontier.

Mostly, however, the empirical literature skips the question of market efficiency and analyzes directly the impact of institutions on economic productivity and economic activity (which, as the available research shows, is positively related to product market efficiency). Chanda & Dalgaard (2008) state that as much as 85% of the international variation in aggregate total factor productivity (TFP) can be attributed to variation in relative efficiency across sectors of the economy. Estimation results show that recent findings highlighting the importance of better quality of institutions (among other things) for the level of TFP, can be explained by its impact on relative efficiency. Among the papers that highlighted the particular importance of institutions quality for economic activity Rodrik et al. (2004) stand out. They state that the quality of institutions is more significant growth factor than for example geography or trade. Empirically, however, Égert (2016) states that there is surprisingly little empirical research of the impact of institutions at the macroeconomic, aggregate level. His empirical research shows that better institutional quality can amplify positive effects of certain policies on the aggregate productivity (TFP). At the micro level, Gouveia, Santos & Gonçalves (2017) find that improvements in the quality of institutions bring about positive impacts on firm productivity both in the short and long run in Portugal. This result is supported by the conclusions made by Rodríguez-Pose et al. (2020) who confirm that high-quality regional institutions foster productivity in the European firms. Pattnaik & Choe (2007), on the other hand, find that performance of subsidiaries is not impacted by the quality of institutions of the country they are located in. This finding corresponds to the one by Chacar, Newburry & Vissa (2010) who find on a sample of 33 countries over a 10-year period that institutional quality impacts only domestic firms. Likewise, Agostino et al. (2020) find that better local institutions help small and medium-sized companies of the EU become more productive (in terms of their TFP).

The efforts of these and other authors have yielded a multitude of papers, most of which confirm the positive impact of better institutions on productivity, implicitly or explicitly assumed through more efficient markets. Additionally, however, we must consider that there are also potential special characteristics of small countries, Mediterranean countries, and former socialist countries that shape institutional framework, and hence its impact on product market efficiency and consequently economic activity in a specific way. For example, smaller countries appear to be more prone to clientelism by eliminating the need for brokers and enhancing the power of clients versus patrons which degrades the institutional quality (Veenendaal, 2019). Additionally, by defining small countries as those with a population of a 5 milion or less, Bräutigam & Woolcock (2001) find that institutions of small countries develop differently from those of large countries due to greater aid and trade dependence, greater vulnerability to external shocks. However, although they do not find that there is a significant difference in the quality of institutions between small and big countries, they do find that precisely because small countries are more vulnerable, the quality of their institutions matters even more than it does in large countries (Bräutigam & Woolcock, 2001). As far as the affiliation to the Mediterranean group of countries is concerned, these countries share geographical and many cultural pecularities, which stand in contrast with other countries of the EU. These range in the literature from simple differences such as the different understandings of honour (Mosquera, Manstead & Fischer, 2002) to "an internal cohesiveness in moral-cognitive terms" of the Mediterranean basin (Gilmore, 1987). And although many antropologists disagree with a notion of a "Mediterranean cultural unity" (de Pina-Cabral, 1989), we believe that the existing similarities of this group of countries might have had a specific way of impacting institutional development and consequently economic activity. Finally, it is expcted that the post-socialist group of

countries, by sharing a common history, also display some common institutional characteristics. This is because institutions are not formed overnight, and their creation has historical conditions (North, 1990).

Finally, the findings of the empirical literature in this review, as well as the above mentioned considerations of specific characteristics that might play a role in the functioning of institutions of different countries, make us suspect that the poor quality of institutions is one of the main explanations for Croatia's low product market efficiency (and consequently poor economic performance), and that it might be rooted, even if only in part, in its size, geographical location, culture and history.

The quality of Croatian institutions is low, as will be demonstrated in the following section, and the research on the economic consequences of this historically poor quality of institutions in Croatia are rare, but several papers can be distinguished: Franičević & Bićanić (2007), Ivanković (2017) and Kotarski & Petak (2019). All of these selected papers emphasize the negative consequences of poor institutional quality in Croatia, focusing mainly on clientelism, and show its disastrous effects on economic growth. We broaden the existing empirical analyses with the intent to determine the impact that institutions have on product market efficiency in Croatia. We analyze all of the EU countries but focus specially on the specific groups of countries that share some geographical and cultural characteristics, size and the common historical circumstances of their development as Croatia: small countries, Mediterranean countries and post-socialist countries of the EU. Since the analysis of this subject has not yet been performed, this paper contributes significantly to the economic literature, both domestic and foreign.

3. Selected components of the Global Competitiveness Index for Croatia

The Global Competitiveness Index (GCI) is one of the most commonly used competitiveness indicators. It covers a multitude of factors grouped into 12 pillars as shown in Table 1 (more in: Schwab(ed.), 2017). GCI for 2017-2018 covers 137 countries and they are ranked based on its values. The higher the value of the indicator, the better the rank, with one being the best rank. However, the rank score is arbitrary. The ranking position is influenced by domestic, but also by the reforms of other observed countries. The greater the rank, the worse the result is. The latest calculation of the 2018 index (GCI 4.0) has slightly changed the classification of the competitiveness pillars compared to the previous years, which is why in our empirical analysis we use only the data on the GCI before this change in methodology.

Table 1: The competitiveness pillars according to the Global Competitiveness Index (former methodology – 2006/7 – 2017/8)

Global competitiveness index (GCI index)		
Basic requirements	Efficiency factors	Innovation and sophistication factors
• Institutions • Infrastructure • Macroeconomic environment • Health and primary education	• High education and training • Product market efficiency • Labor market efficiency • Financial market development • Technological readiness • Market size	• Business sophistication • Innovations
Key for economies driven by *production factors* (GDPpc less than 2000$).	Key for economies driven by *efficiency* (GDPpc between 3000 and 8999 $)	Key for economies driven by *innovations* (GDPpc higher than 17000 $)

*Source: Made by authors according to (Schwab, 2017).*

All presented figures 1 - 3 show the position of Croatia according to the GCI 2017-18 methodology. Figures clearly show that Croatia does not achieve good results neither in the groups of *basic requirements* nor in the *factors to stimulate efficiency*. This particularly applies to the segments of the GCI called Institution and the Product Market Efficiency that are discussed in this paper (Figure 1). From figures 1-3 it is noticeable that with a rank around 100 Croatia scores poorly in Institutions (102), Efficiency of the Product Market (99) and Labor Market (107), Financial Market Development (95) and Innovation (107). The analysis of the Institutions in Figure 2, shows that Croatia, in almost 60% of the components, has a ranking of 100 and upwards. This highlights the bad results (even in the global context)[1].

Figure 1: Ranks of Croatia according to the GCI pillars (2017-18)
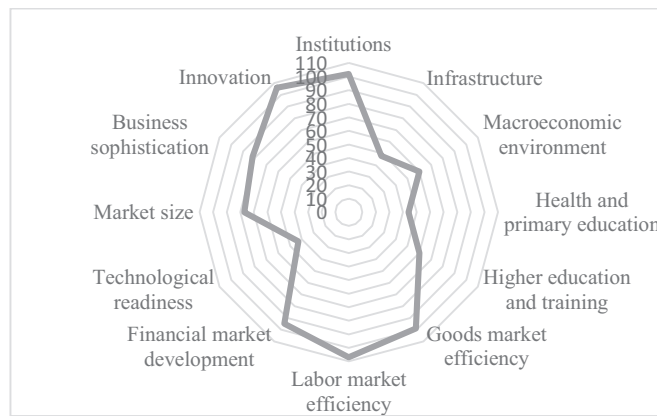
Source: World Economic Forum. The Global Competitiveness Index Dataset 2007-2017
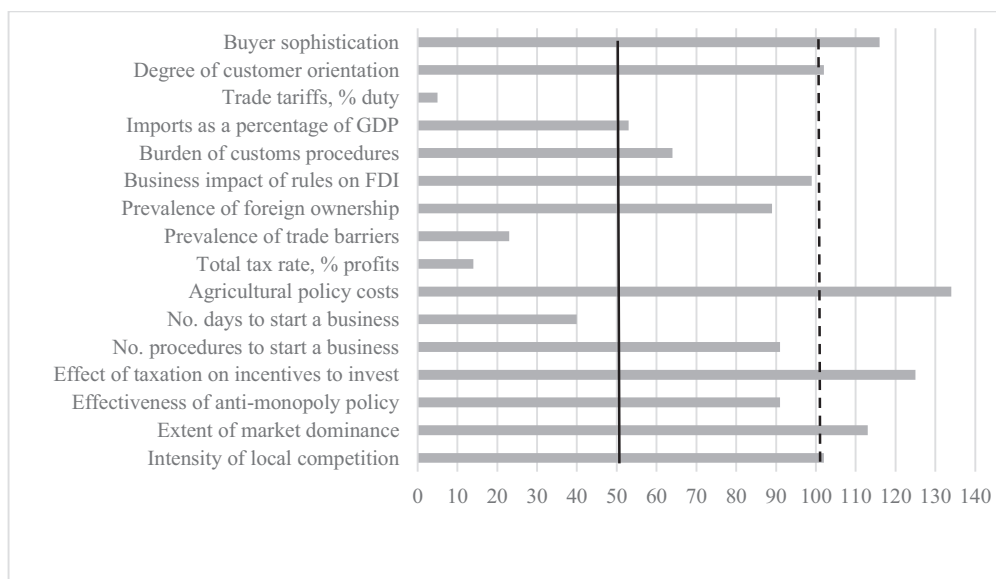
Figure 2: Ranks of subcomponents in the pillar Institutions for Croatia (GCI 2017-18)
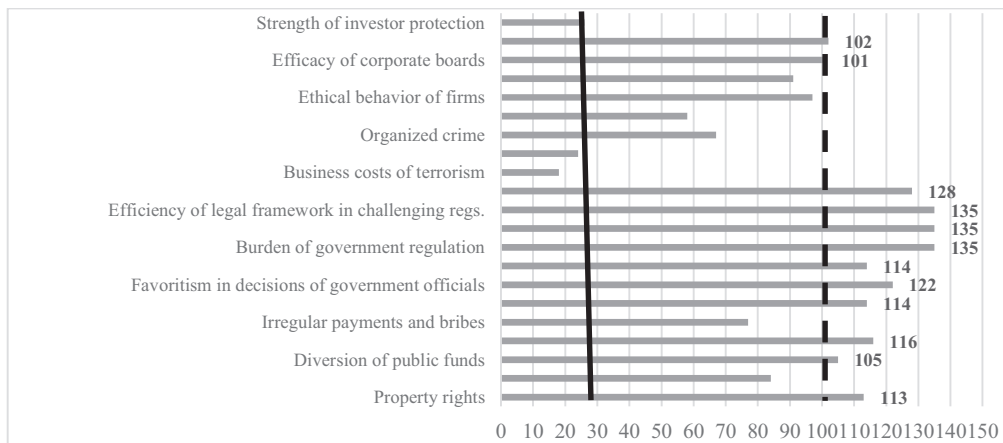
Source: World Economic Forum. The Global Competitiveness Index Dataset 2007-2017

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[1] Ranks are in the brackets.

Figure 3: Ranks of subcomponents in the pillar Product market efficiency for Croatia (GCI 2017-18)

Source: World Economic Forum. The Global Competitiveness Index Dataset 2007-2017

4. Methodology and data

In our paper, we analyze the impact of the quality of institutions on the efficiency of the product market. We use annual data for all of the EU countries from 2008 until 2018. This data period is constrained by the availability of the appropriate data. Since our analysis covers a short period of only 11 years, our model specification is limited with a number of explanatory variables. Table 2 provides the data description and sources of all of the variables used in the analysis.

Table 2: Data description and sources

Variable	Label	Measure	Source	The expected sign
Product market efficiency	*PME*	Index, [1:7]. Greater index indicates more efficient product markets. Weighted average of current and previous year.	WEF database	Dependent variable
Institutions	*INST*	Index, [1:7]. Greater index indicates higher quality of institutions. Weighted average of current and previous year.	WEF database	+
Exports	*EXP*	Exports as a percentage of GDP (Constant, 2010)	WDI database	+
Control of corruption	*CORRUPT*	Index, [-2.5:2.5]. Greater index indicates greater control of corruption. Weighted average of current and previous year.	WDI database, from Kaufman, Kraay & Mastruzzi (2010)	+
Tax burden	*TAX*	Tax revenue as a percentage of GDP	WDI database	-
Small countries dummy	*DSC*	1 = Countries with population of 5 million or less (following Bräutigam & Woolcock, 2001): Cyprus, Croatia, Estonia, Ireland, Latvia, Lithuania, Malta, Slovenia; 0 = otherwise	Authors	Not applicable

Variable	Label	Measure	Source	The expected sign
Mediterranean countries dummy	*DMC*	1 = Cyprus, Croatia, France, Greece, Italy, Malta, Portugal, Slovenia, Spain; 0 = otherwise	Authors	Not applicable
Post-socialist countries dummy	*DPSC*	1 = Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia; 0 = otherwise	Authors	Not applicable
Croatia country dummy	*DCRO*	1 = Croatia; 0 = otherwise	Authors	Not applicable

Note: (i) WDI, World Development Indicators; World Bank (ii) WEF, Global Competitiveness Report - World Economic Forum
Source: Authors

Due to the relatively small length of annual data we preferred to focus on the static panel model. The choice between the two basic estimates of this model (random vs. fixed effects) depends on the existence of a correlation between individual heterogeneities and regressor variables. The third possibility (i.e. pooled model) was ruled out by Chow (1960) and Breusch & Pagan (1980) LM tests, but their results are not shown to save space. The Hausman (1978) test found no differences between RE and FE estimators which is often taken in favor of RE estimator since it is more efficient (smaller variance). Nevertheless, fixed effects were used for regression diagnostic according to Wursten (2018). Wursten (2018) presented several commands in Stata for autocorrelation testing and a first-order autocorrelation test that is robust to heteroskedasticity (applications of the Born & Breitung (2016) tests). He also introduced a cross-country dependency testing command that applied the Pesaran test (published version Pesaran (2021). Since all these tests indicated poor model diagnostics, it was justified to correct the standard errors of parameters according to Driscoll & Kraay (1998). Hoechle (2007) created an algorithm to execute this in Stata and it is applied in this paper. It allows the calculation of standard errors that are robust to autocorrelation, heteroskedasticity and cross-country dependence, while keeping the regression coefficients unchanged[2].

The static fixed effects and random effects panel data analysis were employed to analyze the following basic relationship (1).

$$PME_{i,t} = \beta_0 + \beta_1 INST_{i,t} + \beta_2 EXP_{i,t} + \beta_3 CORRUPT_{i,t} + \beta_4 TAX_{i,t} + \varepsilon_t \qquad (1)$$

Our focus is on the variable *INST* which represents the first pillar of Global Competitiveness Report and includes different important components such as property rights, judicial independence, public trust in politicians, favoritism in decisions of government officials and others. Variable *INST* is expected to yield a positive impact on the product market efficiency. Namely, better quality of institutions is expected to lead to better product market efficiency. In addition, control variables were included in the analysis. The variable EXP is expected to result in positive sign because the share of exports in GDP can be seen as a proxy for a higher degree of competitiveness and therefore is expected to be related to the more efficient product markets. The variable *CORRUPT* measures the extent to which politicians are involved in corruption and nepotism, but also captures the percentage of sales that is unofficial. This variable shows the amount of public power that is used for private gain, as well as "captivity" of the state by the elites and private interests (WB, various years). Here we expect positive sign as well because better control of corruption is expected to allow better allocation of resources through market

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[2] The summary statistics and model diagnostics are available upon request.

(price) mechanisms, and to lead to higher product market efficiency[3]. Finally, the variable TAX represents a tax burden and it is expected that the greater burden that the product markets bear, the less efficient they are going to be.

As the second step of the analysis, we estimate if there is a significantly different impact of the quality of institutions on product market efficiency depending on the specific set of common characteristics of different countries. We do this by expanding the equation (1) with a term that multiplies the dummy variables (D) from Table 3 (i.e. for small countries (DSC), Mediterranean countries (DMC), post-socialist countries (DPSC) and finally just for Croatia (DCRO)) with an INST variable, as shown in the equation (2) below:

$$PME_{i,t} = \beta_0 + \beta_1 INST_{i,t} + \beta_2 (INST*D)_{i,t} + \beta_3 EXP_{i,t} + \beta_4 CORRUPT_{i,t} + \beta_5 TAX_{i,t} + \varepsilon_t \qquad (2)$$

We expect to see a significantly different impact of the quality of institutions on the product market efficiency in these different sets of countries, as explained in the literature review section. Additionally, we analyze if the quality of institutions play a role in the effect of taxation on product market efficiency by using another interactive variable TAX*INST, speculating that better institutions might decrease the negative effect of taxation on product market efficiency.

$$PME_{i,t} = \beta_0 + \beta_1 INST_{i,t} + \beta_2 (TAX*INST)_{i,t} + \beta_3 EXP_{i,t} + \beta_4 CORRUPT_{i,t} + \beta_5 TAX_{i,t} + \varepsilon_t$$
$$(3)$$

Finally, for additional robustness check purposes only, we run a simple OLS time series regression on Croatian data with institutions, corruption and exports as explanatory variables.

5. Results and discussion

The common result of both estimations (OLS and GLS) is that the variable INST is positively related to PME (Table 3). Accepting this variable by both methods can be interpreted as a confirmation of robustness. The variable EXP is statistically significant by the GLS method (RE model), but the coefficient is very close to zero. Recalling that the Hausman test in all cases accepted the null hypothesis, this means that it does not matter whether we use OLS or GLS, although the GLS is generally taken. But such a low and significant coefficient usually implies a link from PME to EXP. This needs to be tested, but is not the subject of this paper. The variable TAXINST is negatively related with PME in both models. This could mean that excessive taxes can diminish the positive impact of better institutions on product market efficiency. However, this conclusion should be taken with caution since the variable TAX, in addition to being insignificant in all regressions, has a parameter close to zero from the first to the fourth equation, and increases only with the insertion of slope dummy in the fifth equation. Although the within estimator is less efficient, the negative and significant variable INSTDSC indicates a less positive (i.e. weaker) relationship between institutions and product market efficiency in small countries but this has not been confirmed with the RE estimator, which makes this result not robust and warrants further analysis. For Mediterranean countries (INSTDMC), the positive impact of institution is somewhat weaker than in the rest of the sample $(0.44 - 0.13 = 0.31)$. Although only one of the slope dummies is significant (equation 6) and one conditional (equation 2 in the FE model), the conclusion for Croatia is clear – poor efficiency of the product market is associated with a weak institutional framework.

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[3] Lower value of these indices shows better product market efficiency, better quality of institutions and better control of corruption. And vice and versa.

Table 3: Estimates of models with random and fixed effect with Driscoll & Kraay (1998) standard errors

	Random effects model						Fixed effects model					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
INST	0.42**	0.42**	0.42**	0.41**	0.56***	0.44***	0.40***	0.43***	0.42***	0.40***	0.64**	0.48***
	(0.15)	(0.16)	(0.16)	(0.15)	(0.13)	(0.14)	(0.11)	(0.10)	(0.11)	(0.11)	(0.21)	(0.10)
EXP	0.00**	0.00**	0.00*	0.00*	0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
CORRUPT	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.04	0.01	0.01	0.00	0.02
	(0.09)	(0.10)	(0.09)	(0.09)	(0.08)	(0.08)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
TAX	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.05	0.00
	(0.00)	(0.00)	(0.01)	(0.00)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.03)	(0.01)
DSC		0.18						0.00				
		(0.36)						(0.00)				
INSTDSC		-0.05						-0.21**				
		(0.07)						(0.07)				
DPSC			0.14						0.00			
			(0.22)						(0.00)			
INSTDPSC			-0.03						-0.05			
			(0.06)						(0.07)			
DCRO				-0.56						0.00		
				(0.62)						(0.00)		
INSTDCRO				0.08						0.08		
				(0.16)						(0.16)		
TAXINST					-0.01*						-0.01*	
					(0.00)						(0.01)	
DMC						0.43						0.00
						(0.30)						(0.00)
INSTDMC						-0.13*						-0.23***
						(0.06)						(0.04)
Constant	2.57***	2.54***	2.52***	2.62***	1.94***	2.55***	2.59***	2.66***	2.60***	2.58***	1.55*	2.60***
	(0.41)	(0.37)	(0.45)	(0.39)	(0.49)	(0.33)	(0.23)	(0.25)	(0.24)	(0.24)	(0.78)	(0.23)
Observations	308	308	308	308	308	308	308	308	308	308	308	308
Number of groups	28	28	28	28	28	28	28	28	28	28	28	28
degrees of freedom	4	5	5	5	5	5	4	5	5	5	5	5
Coef. of determ.	0.835	0.830	0.835	0.849	0.830	0.845	0.305	0.319	0.306	0.305	0.314	0.328
Joint hypothesis test	2836	2614	2769	4803	2926	3994	104.6	226.6	410.0	117.5	113.1	836.2
p-value	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: For the RE model the coefficient of determination is the „overall R2", but in the FE model it is „within R2". Similarly, the joint hypothesis with the corresponding p-value in the RE model is the Wald test, and in the FE model is the F-test. The FE model completely excludes all intercept dummies. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0. *Source: Authors*

6. Conclusion

The aim of this paper was to test if there is a positive impact of the quality of institutions on the product market efficiency in the EU, with a special focus on Croatia. We broadened the analysis to test the hypothesis that countries that share common characteristics with Croatia, such as size, historical and cultural background, exhibit difficulties translating the quality of institutions to greater product market efficiency. Additionally, we investigated the joint effect of the quality of institutions and the tax burden, expecting that countries with better institutions have less detrimental impact of taxes on the PME. We used the static panel data analysis on a sample of 28 EU countries and yearly data from 2008 to 2018.

The descriptive analysis of GCI showed that both the quality of institutions and the product market efficiency in Croatia is low. The results of our empirical analysis highlight that the root of the low product market efficiency should be sought in the low quality of the institutions since there is a positive relationship between the quality of institutions and the product market efficiency in the EU. Furthermore, our results also suggested that small countries might see less beneficial impacts of better institutional quality on the product market efficiency than large countries, but this result is not robust. The same also appeared to be true for Mediterranean countries compared to the rest of the EU member states. The socialist historical legacy did not appear to play a role in a relationship between institutional quality and consequent product market efficiency. The role of institutional quality in the relationship between the taxation and the product market efficiency appeared to be negligible. These results suggest that in order to improve the product market efficiency, a prerequisite for greater productivity and consequently economic growth, it is necessary to change the institutional framework. However, the efforts to achieve greater product market efficiency in Croatia through institutional change may in part be hindered by its size and its Mediterranean cultural and geographical characteristics.

However, one issue remains unresolved. If the PME takes value from 0 to 7, we can assume that over time the efficiency of the product market improves (or at least does not deteriorate) which would also mean that PME depends on past values. Also, the possibility of feedback from poor product market efficiency to higher corruption and poorer quality of institution cannot be completely ruled out. In such circumstances the presented estimates would not be appropriate, so a dynamic panel analysis should be made. Although preliminary estimates of the dynamic panel model (corrected LSDV model – not shown in this paper) do not necessarily disprove the presented results, a comprehensive answer to the research question will be given by future studies.

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CHALLENGES IN ORGANIZING A FOOD DONATION SYSTEM: REQUIREMENTS AND BARRIERS FOR THE FOOD BUSINESS OPERATORS

ABSTRACT

The largest waste and food losses occur in the most developed countries of the world. In Europe, around 20% of edible food is thrown away and EU countries are struggling to develop and employ more efficient food waste prevention policies. Croatia also participates in debates and policy creation at the EU level. Like in many other EU countries, Croatia reports on simultaneously increasing food wastage and, at the same time, inhabitants' deprivation. Nearly 400,000 t of wasted food is reported annually, along with the estimation of 20% of the population being at risk of poverty. Considering all the aforementioned, this paper explores what factors affect corporate donors' decision to donate and whether there are bottlenecks in the system, which cause obstacles to the food donations and reducing overall food losses and food waste. To assess the current situation, we designed a pilot study aiming at exploring food donating patterns in Croatian firms dealing with food. A questionnaire was sent to over 2,000 firms but we received only 41 feedback, out of which 34 were suitable for further analysis. Low responsiveness was also indicative of low awareness of the given topic, so we considered important to analyze and present the results, even though we are aware of issues related with small sample size. Main findings are related to inadequate design and regulation of the national food donation business model, which imposes barriers to corporate donors and results in a weak donation culture in Croatian firms. Instead of donating food, complexity of the regulatory and administrative system, low visibility and accessibility of charitable organizations, logistic issues and scarce information on the existing donating procedures, drive food business firms to choose food waste disposal as a common waste management policy.

***Keywords*:** *food donation system, food bank, legal and operational barriers, business model, central organization.*

1. Introduction

Food waste has vast impact on economies, environment and society. In 2015, almost 25% of the EU population (119.1 million people) was at risk of poverty or social exclusion, out of which 42.5 million people were not able to afford a quality meal every second day (Eurostat, 2017). According to estimations, at the same time around 88 million tons of food waste are generated per year with associated costs amounting to 143 billion EUR, placing the EU amongst the highest food waste producers in the world ('Estimates of European food waste levels', FUSIONS, March 2016).

The processes of producing, processing, and distributing food generate food losses and food waste. There are many facets to food waste: non-reusable products, by-products, unsellable (damaged) products, excess inventory, etc. Food waste generates throughout the entire food supply chain, and a substantial proportion of it contains food still suitable for human consumption. It arises at any stage as a side effect of production process in agriculture, in artisan or industrial setting, as well as in distribution channels (including wholesale and retail) due to a variety of reasons such as demand uncertainty, over-ordering and/or cancelled orders, not meeting manufacturer and/or customer specifications, production and labelling errors, handling damage, issues related to date marking (such as insufficient product life remaining on delivery or national rules preventing the redistribution of foods past the 'best before' date), etc.

For a firm, waste is always economically undesirable since it puts financial and operational burden on firms. Requirements regarding waste management, including food donation and food waste disposal are regulated by the national law. There are at least two ways of fulfilling regulatory requirements for (food) waste management: discarding food waste on landfills or recovering food waste through donations. On the organizational level, waste management policies are often designed according to the perception of the greatest benefit for the firm, given that the greatest benefit is not always limited to financial factors. In some cases, perceived firm benefits exceed solely food waste disposal; since food donation also incorporate voluntary social, humanitarian and environmental concerns, firms are willing to consider it even at higher costs and integrate it in their social responsibility policies.

In this paper, we examine the motives for food donation in Croatian firms. We analyze perception of managers on food waste management in 34 Croatian firms and identify major obstacles for increasing food donations. According to the survey, factors encouraging or impeding better food waste management in Croatian firms are classified in three categories: the importance of the organized network of food donation organizations at the national level; the importance of the formalized organizational processes at the firm level; and the importance of unambiguous and transparent legislation.

The paper is structured as follows: in the first part we are offering an insight into the importance of responsible food waste management for the higher purpose of decreasing hunger and deprivation of people, and at the same time for the enhancing economies of organizations by decreasing inefficiencies in the food supply chains. We are proceeding with the overview of food donation system business model, its elements and challenges, followed by our analysis and discussion of major barriers for food donation in Croatian firms.

2. Global importance of food waste management

The Sustainable development goals 2030, adopted by United Nations, place great emphasis on issues related to poverty, inequality, and food waste. Few of them are related to the prevention of hunger and poverty: no poverty, zero hunger, reduced inequalities and responsible consumption and production (United Nations, 2021a). Today, 10% of the total population lives in extreme poverty, and even people who have jobs are facing the risk of extreme poverty

(United Nations, 2021b). When it comes to zero hunger, the number of people who suffer from hunger started to grow in the last six years, coming to the number of 690 million people. Furthermore, according to the prediction, the number of hungry people could increase to over 840 million people by 2030 (United Nations, 2021c). On the other hand, according to the Food and Agricultural Organization (2011), almost one third of the total produced food has been wasted annually, equivalent to 1.3 billion tons worth around $1 trillion (United Nations, 2021e). Even though there was some improvement in the reduction of inequalities, the situation with COVID-19 increased existing inequalities and once again hit the poorest and most vulnerable communities (United Nations, 2021d).

The European Union has committed itself to halving food waste per capita and reducing food losses in production and distribution. According to the European Commission (2021a), there is a considerable potential for improving waste management policies, both in business as well as in final consumption segment. Reducing food losses and food waste is an integral part of the strategy's action plan. The European Commission will propose binding targets for the reduction of food waste by 2023, and a revision of the meaning of expiration dates will be carried out ('use by' and 'best before') by 2022 (European Commission, 2021b). According to data from 2016, around 20% of total food produced in EU countries is lost or wasted (Figure 1).

Figure 1: Total food waste by country in 2016 (kg/cap)
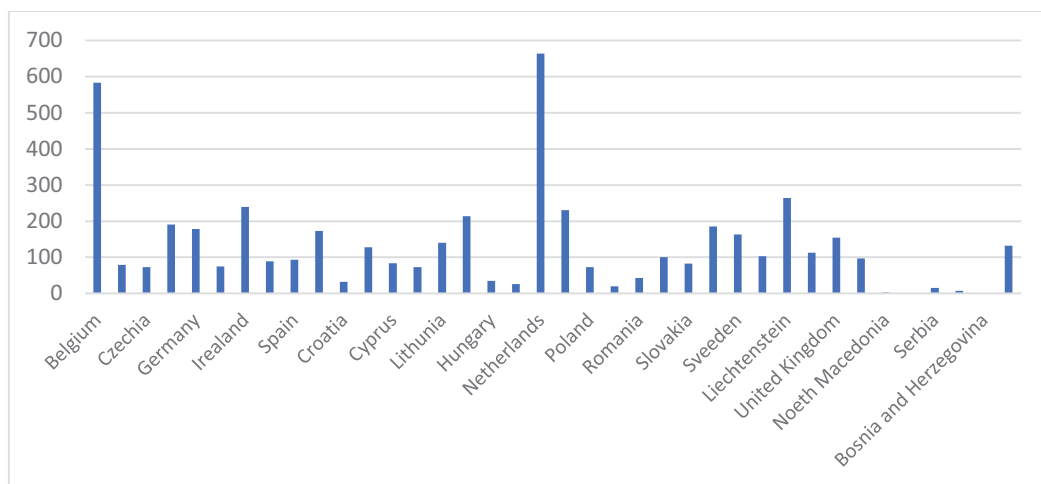
Source: Eurostat 2021

In general, economically developed countries of the European Union (e.g., Belgium and the Netherlands) have higher amounts of food waste per capita. They are constantly investing in more efficient donating systems and trying to remove obstacles to increase food donations and reduce food waste (for example, the Dutch study recognized the need for reducing 20% of food waste -Waarts et al., 2015, pp. 7).

Figure 2: Population enable to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day (2018, %)
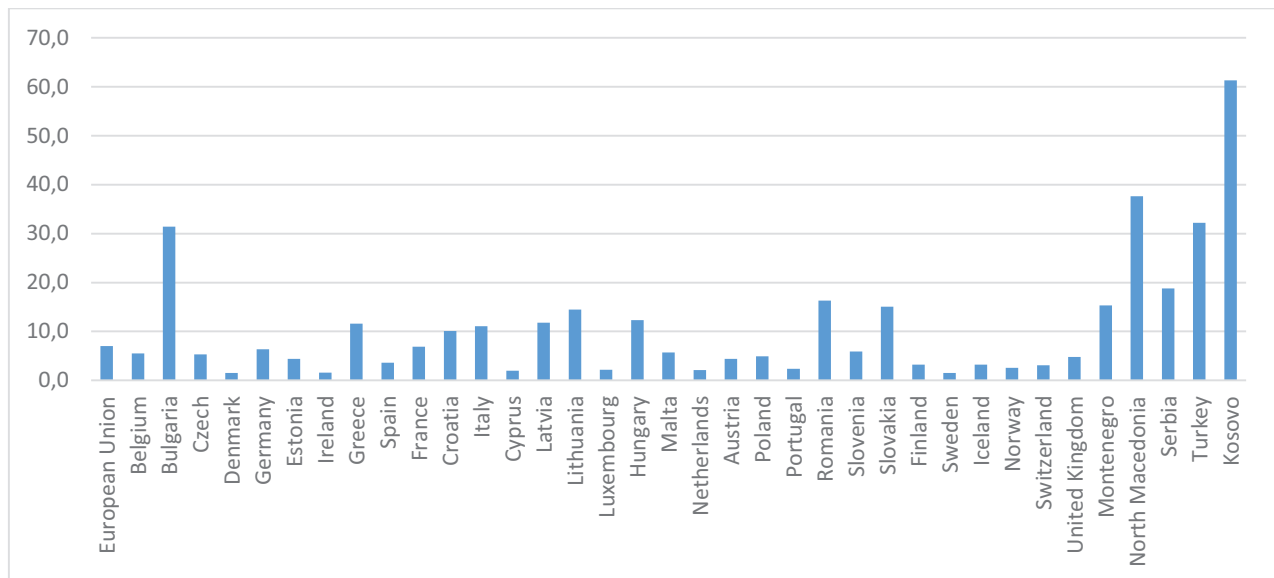
Source: Eurostat 2021

Food surplus is created in food supply chain; if the chain is shorter, losses are lower, but that does not immediately mean that the system is more efficient. Thus, countries that report lower amount of food waste per capita are generally producing lesser quantity of food (e.g., Malta, Portugal, Serbia and Turkey) and have higher level of food import in their overall food consumption. Also, the share of people who cannot afford quality meal every single day is greater in the less developed countries (Figure 2).

3. Food donation market: its elements, actors, organization and challenges

The food waste hierarchy considers the three dimensions of sustainability (environmental, economic, and social), offering a more holistic approach in addressing the food waste issue (Papargyropoulou et al., 2014, pp. 114). The primary focus of food waste management should be to act at the source by preventing the generation of surplus food at each stage in the food supply chain (Ferranti, 2019). Due to business logic of firms involved in the process, full avoidance of excess goods is not the most probable scenario. Therefore, it is expected that food surplus will continue to occur in the processing, production and distribution of food. When surplus occurs, it is of the utmost importance to ensure its recovery and redistribution for human consumption through efficient donation system to achieve the highest efficiency of food supply chain and the greatest good for the humanity (Baglioni et al., 2016, pp. 2034).

Therefore, food donation supports the fight against poverty and hunger in the world as well as fight against pollution (by reducing waste generation and its disposal). However, even though food redistribution is a growing phenomenon and food producers and distributors are willing to donate their surplus to charitable organizations, the amount of food redistributed still represents a small fraction of the overall surplus food available in the EU. For instance, in 2016, members of the European Federation of Food Banks (FEBA) distributed 535,000 tons of food to 6.1

million people[1], which represents only a small fraction of the estimated volume of food waste generated annually in the EU (EU guidelines on food donation, 2017/C 361/01).

Food surplus often happens when firms are not able to place products on the market on time or in specific condition (Busetti, 2019). The alternative for food donation is food waste disposal. Thus, after food supply chain optimization, food donation is the most preferable option for overall food waste reduction. Both food donation and food disposal imply costs and benefits for a firm operating with food waste (Eisenhandler & Tzur, 2018). Food disposal service is organized according to business principles, and therefore easily accessible to firms at pre-determined price. Service for collecting food donations often depends on NGOs and their networks which are less reachable or less recognizable/familiar to the business sector. Therefore, to offer the same level playing field, food donation should be structured as system (Buisman et al., 2018, pp. 324), with resources dedicated to match donors (food surplus) and charitable organizations (representing population in need).

Food donation in the context of circular economy (food losses and food waste prevention) encompasses recovery and redistribution of food, by food business operators. Redistribution of surplus food occurs at the end of the food value chain, but food business operators may carry out food donation activities at any stage of the food supply chain. Food business operators are all actors involved in the food supply chain, including donors and charitable organizations. The whole process usually starts with firms (e.g., farmers, food manufacturers and retailers) that donate surplus food through redistribution organizations (charitable organizations and their networks).

Charitable organizations redistribute recovered and collected surplus food that might otherwise be discarded or wasted. They provide it to those in need, either directly or indirectly through other charitable organizations. Thus, charitable organizations, also called receivers of donated food or redistributors, are intermediaries between business sector and deprived people. Most commonly, they are registered as civil sector organizations (NGOs), entities engaging in not-for-profit food redistribution activities, whose main purpose is collection of food donations provided by the donor mostly free of charge and/or processing, producing and redistributing collected food to the end beneficiaries. They can be classified either as 'front-' or 'back-line' organizations, with some fulfilling both functions ('Every Meal Matters', June 2016, p. 16.). 'Back-line' organizations recover donated food from food producers and retailers, transport, store and redistribute recovered food to a network of other charitable organizations. They operate on the 'warehouse' model, supplying food to intermediaries including charities, social restaurants, diverse social enterprises, food pantries, soup kitchens and other front-line organizations. 'Front-line' organizations receive donated food from 'back-line' organizations and/or directly from donors. Organizations operating according to front line model are giving out food directly to their beneficiaries in various forms (e.g., food parcels, soup kitchens, meals served in social restaurants/cafés, etc.); some may also sell food products to people in need at a subsidized price (EU guidelines on food donation, 2017/C 361/01).

Many countries are supporting a food bank approach to designing food donation business model. Food bank as a central organization serves as a focal point for both donors and charitable organizations, the source of information and means to establish stable donation system. Food banks are non-for-profit organizations. They are usually organized as 'back-line' organizations, with primary activity of collecting, storing and transporting large quantities of food and redistributing it to other charitable organizations (Eisenhandler & Tzur, 2018). In some EU countries such as Estonia, Germany and the Netherlands, food banks have in place a hybrid business model: they redistribute food not only to other organizations but also provide food

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[1] European Federation of Food Banks (FEBA): http://www.eurofoodbank.eu/ In addition, the Tafel (German 'food banks' which are not members of FEBA) distributes some 220 000 T of food annually to approximately 1.5 million people

directly to end beneficiaries. Food banks do not limit their activities to receiving and distributing food donations. They coordinate a broader range of programs and activities to serve their target populations and to ensure continuous supplies for deprived people. For that reason, food banks have additional budgets (financed from different sources) they are using for purchasing food. When they are buying food from local producers, food bank agencies play a vital role in supporting and sustaining vibrant local food systems and can leverage their purchasing volumes to support regional food security and regional economies (Bucknum & Bentzel, 2019). It can be inferred that food banks have distributional effects in local/regional markets and thus by influencing the preferences of different interest groups they trigger political action (Swinnen, Vandeveldea, 2019). Furthermore, the interlinkage between efficiency (economics) and equity (politics) issues is crucial to understand the political economy of social and business-related policies of developing and developed countries affecting food waste prevention and circular economy.

Even though food donation often relies on intrinsic philanthropic motives, if there is an aspiration to raise the share of food donation on an EU or national level, food donation system (structure, regulation, transparency, accessibility, etc.) should offer at least the same benefits to firms as food disposal market. Thus, service of collecting food donations should be considered as a market too and should be designed as appealing to food business operators. When deciding on food donation, food business operators often consider the ease of donating and donation incentives compared to cost of food disposal. If the food donation market consists of small, unreliable and rather invisible NGOs, accompanied with poor regulations and inadequate incentives, process of food donation becomes costly and unpredictable for businesses, and share of donations in total food waste maintains insignificant. EU countries have identified legal and operational barriers to the redistribution of safe edible food, both for donors and receivers.

Regulations and legislation can act as an incentive or as an obstacle to food donation. Two measures that have a central place in the international debate on food waste policy: the possibility of donating food beyond the best-before date (BBD) and the simplification of the bureaucracy of donations. These two measures have a simple and straightforward causal logic. Fewer bureaucratic burdens associated with food donation should remove barriers for potential donors, whereas making food past the BBD eligible for donation should encourage donations rather than disposal or recycling (Busetti, 2019). Food laws (especially regarding food safety and food hygiene), as well as waste and tax legislation have been identified as dominant areas affecting the scale of donation. Food donation is often discouraged by the lack of knowledge of national laws dealing with food. Food donors often do not have enough information on food suitable for donation. Another obstacle is related to legal liability (corporate, civil or criminal) that might arise from donations for any harm caused by donated food. Regulations and legislation regarding potential food business operators' liability may impose a barrier that restricts them from engaging in food redistribution activities. Moreover, concerns regarding potential damage to corporate/brand reputation in the event of a food safety incident linked to food redistribution can also represent an obstacle to food donation (EU guidelines on food donation, 2017/C 361/01). Regulations regarding financial incentives or other legislation designed to prevent food losses and reduce food waste in a way that oblige food business operators to redistribute food surplus is designed with an intent to motivate food manufacturers and retailers to recover and donate food surplus. Value added tax (VAT) can have implications for the food surplus donation (it is often considered that the value of the donated food close to its 'best before/use by' date is small or zero). Most EU countries do not impose VAT on food donated to charitable organizations (Belgium, Croatia, Denmark, France, Germany, Greece, Hungary, Italy, Poland, Portugal, Spain, Sweden and UK), but in some countries, VAT is calculated based on the commercial price of the donated food. Such policy has negative consequences for food donation ('Review of EU legislation and policies with implications on

food waste', 2015). Other fiscal instruments (such as tax deductions, tax credits and corporate tax breaks) can provide economic incentives for food donation and thereby support the transfer of food surplus from donors to food banks and other charity organizations. In addition to that, there are some quite progressive examples of regulations. France is the first country in the world to create laws in 2016 that ban grocery stores and supermarkets from destroying edible food approaching their best-before date and to require from them signing contracts with food banks and charities.

Food donation faces other challenges beyond legislation. Operational barriers are often related to a logistical framework in place to facilitate large-scale donation, both on donor and receiver side. Food recovery and redistribution entities do not often have the logistical capacity for retrieval, storage, and/or (fast) processing. Efficient transportation and logistics may represent the major problem for the donation system (Ghoniem, Scherrer and Solak, 2012; Davis et al., 2014), as well as fairness and effectiveness of the redistribution network (Orgut et al., 2015). EU states report on lack of funds for the organization of logistics (especially storage and transportation) as one of the most limiting factors in food redistribution. Moreover, inadequate coordination or visibility of charities and their networks cause additional food losses ('Comparative study on EU Member States' legislation and practices on food donations', 2014; 'Counting the Cost of Food Waste: EU food waste prevention', 2014; 'Food redistribution in the Nordic Region', 2016). The introduction of economic incentives to promote sustainable consumption or taxes and fees for waste treatment, consumer education and support of alternative marketing channels call for the action of national governments (Priefer et al., 2016, pp. 164).

4. Organization of Croatian food donation system

European Commission introduced Directive on waste in 2018 in which required development of the necessary waste management infrastructure and improvement and transformation of waste management into sustainable material management for all member states by the beginning of July 2020 (Directive 2008/98/EC on waste, 2018). Thus, it was one of the key triggers that affected increasing awareness of food donation importance in Croatia. Accordingly, in 2019 Croatian Ministry of Agriculture implemented Regulation on the donation of food and animal feed (NN 91/2019), while Croatian government decided on establishing Croatian food bank by the end of 2022. For such a purpose Feasibility study has been conducted (Sokolic et al., 2019). According to the Feasibility study, there are around hundred charities in Croatia; most of them are branches of Red Cross and Caritas, which are two dominant charitable organizations in Croatia collecting and redistributing, inter alia, food surpluses. Charitable organizations are concentrated around major cities (Zagreb, Osijek, Split), where the largest amount of surplus food is generated, and where the highest number of deprived people is registered. There is no food bank or similar large capacity storage and redistribution intermediary set up in Croatia. On the state of the food donating system in Croatia study revealed that some charities do not even have contact numbers listed on their official sites, large number of them are not adequately equipped or do not have capacities to store food donations, especially when a timeline for the use of food is short, they do not have logistic (transport and storage) capacities to make continuous cooperation with donors, etc. (Sokolic et al., 2019, pp. 52-74).

These findings prove previous findings on food surpluses in Croatia: they mostly end up on the landfills. Restrictiveness and complexity of Croatian laws, and lack of overall trust of Croatian (food) business firms in the transparency and good intentions of legal framework can put additional barriers on food donation. Furthermore, responsibility for donated food, food regulations, lack of information (how to get started, which food can be donated, etc.), lack of

infrastructure (food storage and transportation) and the inability to identify non-profit organizations that may be the recipients of food donation, have been emphasized as the major problems (Izvješće Ministarstva poljoprivrede o rezultatima istraživanja o doniranju hrane u Republici Hrvatskoj, Croatian Ministry of Agriculture, 2017). Our research focuses further on donator`s issues related to food donation in Croatia and investigates which specific domains are contributing the most to the status quo of surplus food redistribution in Croatia: macro level - organized national network and/or transparent legislation; and/or micro level – institutionalized organizational processes.

5. Data collection and methodology

Our research on food donating patterns was conducted through an online questionnaire that was sent by an e-mail to firms operating in Croatia according to following criteria. The first criterion was related to classification of economic activities in the European Community (NACE Rev. 2; European Commission, 2008), thereby targeted firms had to be involved in some of the following: production and retail sale of meat and poultry meat products; operation of dairies and cheese making; wholesale of dairy products, eggs and edible oils and fats; manufacture, wholesale and retail of bread, fresh pastry, cakes, cocoa, chocolate, flour and sugar confectionery; retail sale of fruit and vegetables; manufacture of prepared meals and dishes; processing of tea and coffee; non-specialized wholesale and retail of food, beverages and tobacco. The second criterion was annual operating revenue i.e., the revenue that firm generates from its primary business activities, which had to exceed 100,000 HRK. According to Amadeus database, 2,000 firms in Croatia satisfy both criteria, thus the questionnaire was sent to their managers whose contacts were found by the Internet search. 5 months of data collection (from January until June 2019) resulted in total of 45 responses. After excluding the missing answers according to the listwise deletion method, the final number of valid responses was 34.

The questionnaire consisted of 3 parts. The first part included general information about firm's size, location and business activities. Most firms are classified as small-sized (less than 50 employees - 76%), followed by mid-sized (50-250 employees - 12%) and large firms (more than 250 employees - 18%). Their locations were grouped around the four largest Croatian cities: 32% are located in Zagreb region, 26% are in Split region, followed by regions of Rijeka (15%) and Osijek (12%). 71% of respondents are engaged in food and beverages production and processing, while only 29% of them are involved in wholesaling and retailing activities.

The second part of the questionnaire focused on the food donating processes in the firms. Respondents were asked how often they donate food (0 – never, 1 - few times a year, 2 - once a month, 3 - once a week), who approves donations (1 – owner/board of directors, 2 – store manager, 3 – department manager, 4 – unknown), are they familiar with VAT exemption on donated goods (0 – no, 1 – yes) what motivates them (multiple choice) and what donating procedures do they have in place (multiple choice).

The third part of the questionnaire examined perceived donating obstacles/barriers and necessary conditions for regular food donating activities. The existing studies in the field mostly emphasize the role of central organization in the food donating process, as well as the importance of identifying the donating partners' network, building mutual trust, employees' engagement, financial incentives and clarity of information about the food appropriate for donation. According to these factors, the main part of the questionnaire was comprised of 22 questions and statements dealing with respondents' perceptions of the existing barriers in the food donating process, as well as the necessary conditions for its normal functioning. Responds were given on five points Likert scale where 1 was indicating strong disagreement, while 5 was pointing to strong agreement with the statement.

Categorical variable describing how often firms donate food was used as a dependent variable. Furthermore, the IBM SPSS software was used for applying several methods of data analysis. Pearson's chi-square test was used to examine relationship between dependent variable (i.e., firms' donating frequencies) and other categorial variables. Exploratory factor analysis (EFA) and maximum-likelihood (ML) method have been applied to create additional variables describing respondents' perceptions of the main barriers in the food donating process and conditions that should be met for its normal functioning. Hence, they were added to the model predicting food donating frequencies which was tested by the linear regression analysis.

6. Results and discussion

The Pearson's chi-square test is based on the simple idea of comparing the frequencies that are observed in certain categories to the frequencies that might be expected in those categories by chance (Field, 2009, 688). Accordingly, we have tested relationship between firms' donating frequencies and other categorial variables such as firm's size, location, business activities, information on VAT exemption, existing donating procedures and motivating factors. We acquired significant results indicating that there is an association between respondents' donating frequency and:
- variable describing who approves donations within the firm
- variable describing motivating factors underlying the food donation process
- variable describing the existing donating procedures.
In other words, there is a statistically significant difference in respondents' donating frequency based on who approves food donations within the firm ($X^2=19.02$; df=9; p<0.05). Donations are more frequent, especially on monthly basis, in firms where the store manager approves these donations than in those where owner/board of directors or department manager makes such decisions. The result is shown in the Table 1.

Table 1: Crosstabulation - donating frequency and responsibility for food donation approvals

			Responsibility for food donation approvals				
			Owner/Board of directors	Store manager	Department manager	Unknown	Total
Donating frequency	never	Count	4	0	5	2	11
		Expected Count	4.9	.6	4.5	1.0	11.0
		Adjusted Residual	−.6	−1.0	.4	1.3	
	few times a year	Count	9	1	7	1	18
		Expected Count	7.9	1.1	7.4	1.6	18.0
		Adjusted Residual	.7	−.1	−.3	−.7	
	once a month	Count	0	1	0	0	1
		Expected Count	.4	.1	.4	.1	1.0
		Adjusted Residual	−.9	4.1	−.8	−.3	
	once a week	Count	2	0	2	0	4
		Expected Count	1.8	.2	1.6	.4	4.0
		Adjusted Residual	.3	−.5	.4	−.7	
Total		Count	15	2	14	3	34
		Expected Count	15.0	2.0	14.0	3.0	34.0

Source: authors' calculations

Of all the motivating factors that have been examined in the food donating process (such as prevention of food waste, reduction of environmental pollution, increase of firm value, routine/habit, individual altruism, recognition/award winning and corporate social responsibility), statistically significant difference in respondents' donating frequency was only found related to routine/habit (X^2=15.61; df=3; p<0.05). Firms that have implemented food donating routine as a part of their organizational culture donate more often on weekly and monthly basis which might be seen from Table 2.

Table 2: Crosstabulation - donating frequency and motivating factor

			Routine/Habit		
			0	1	Total
Donating frequency	never	Count	10	1	11
		Expected Count	9.7	1.3	11.0
		Adjusted Residual	.3	−.3	
	few times a year	Count	18	0	18
		Expected Count	15.9	2.1	18.0
		Adjusted Residual	2.3	−2.3	
	once a month	Count	0	1	1
		Expected Count	.9	.1	1.0
		Adjusted Residual	−2.8	2.8	
	once a week	Count	2	2	4
		Expected Count	3.5	.5	4.0
		Adjusted Residual	−2.5	2.5	
Total		Count	30	4	34
		Expected Count	30.0	4.0	34.0

Source: authors' calculations

Furthermore, the relationship between respondents' donating frequency and different donating procedures was also tested. Some firms' policies do not anticipate donating procedures, while in some of them donating process activates only when authorized person approves it or when some of the mediating partners show interest. However, a significant difference in respondents'

donating frequency was found related to donating procedure that requests too much paperwork (X^2=8.12; df=3; p<0.05). Although it was expected that such procedure would negatively affect donation frequency, monthly basis does not prove so as they were mildly increasing. However, on more often weekly basis such administrative work decreases donations. These results might be seen from the following Table 3.

Table 3: Crosstabulation - donating frequency and donating procedure

			Too much paperwork		Total
			0	1	Total
Donating frequency	never	Count	10	1	11
		Expected Count	9.7	1.3	11.0
		Adjusted Residual	.3	−.3	
	few times a year	Count	16	2	18
		Expected Count	15.9	2.1	18.0
		Adjusted Residual	.1	−.1	
	once a month	Count	0	1	1
		Expected Count	.9	.1	1.0
		Adjusted Residual	−2.8	2.8	
	once a week	Count	4	0	4
		Expected Count	3.5	.5	4.0
		Adjusted Residual	.8	−.8	
Total		Count	30	4	34
		Expected Count	30.0	4.0	34.0

Source: authors' calculations

Once relationships between donating frequency and other categorial variables were examined, we were tackling the measures of respondents' perceptions of what are the existing obstacles in the food donating process and what conditions should be met for its normal functioning. The intention was to explore our data and to find common underlying dimensions within (Field, 2009, 637), that would help us in building additional variables and explaining donating frequencies. Therefore, the exploratory factor analysis (EFA) as a technique for dimension reduction has been applied and the maximum-likelihood (ML) method of extraction and orthogonal rotation were used as a procedure of data screening. EFA generally tries to estimate and eliminate error or random variance, i.e., the variance that is specific to one measure but not reliably so as the unique variance (Field, 2009, 637). ML method serves to find the most optimal ways of combining factors into smaller number of so-called subsets. In other words, by using ML the set of possibly correlated factors was converted into the new set of values that was afterwards representing one of the variables in the linear regression.

After ML has been applied on all 22 items, Cattell's scree plot pointed toward solution between three and four factors, thus the whole procedure has been repeated. This time it has been fixed to three factors with the orthogonal rotation of the same factors whose correlation was expected. Kaiser-Meyer-Olkin (KMO) measure of adequacy generally indicates whether factor analysis yields distinct and reliable factors due to their patterns of correlations that have to be relatively compact. The ideal value is between 0.8 and 1. However, values above 0.6 show that EFA can be used (Hair et al., 2019, 499). KMO value in our case was 0.67, while Bartlett's test of correlation matrix was highly significant (p<0.001) which shows that correlation matrix is different from the identity matrix (i.e., the one that has 1 on its diagonal and 0 on the sides) and thus the factor analysis is appropriate for our data.

Values from the communalities table are expected to be as high as possible, as they show amount of each variable's variance that can be explained by maintained items. In other words, higher values indicate that the variables are well explained in the common factor space. Some

authors (Larose & Larose, 2015, 104) state that communalities below 0.5 are unacceptable as these items share less than 50% of their variability with others. Such measure is quite rigid, thereby we have excluded only items with extremely low communalities (below 0.2) which resulted in 11 items in total. Three factors were extracted from these items as may be seen from Table 4 and they explained 74.71% of variability in the given data before the rotation. Since we have allowed factors to correlate, some of them shared the variability in the data they explained, thus the variability decreased to 66.13% after orthogonal rotation that simply assumes uncorrelated factors. Finally, these factors were interpreted as: the importance of the organized network of food donation organizations at the national level; the importance of the formalized organizational processes at the firm level; and the importance of unambiguous and transparent legislation.

Table 4: Factor analysis results of the scale measuring perceived donating obstacles/barriers and necessary conditions (rotated factor matrix)

	The importance of the organized network at the national level	The importance of the organizational processes at the firm level	The importance of unambiguous and transparent legislation	h2
Having a central warehouse organization would ease the food donating process	**0.93**			0.86
Donations agreed in advance would foster more food donating activities	**0.84**	0.18	0.15	0.75
Having the information about donating partners' network would increase our food donating activities	**0.76**	0.12		0.59
Proactivity of charity superstores would ease the food donating process	**0.70**	-0.36	-0.17	0.65
Central organization for collecting and storing food is necessary	**0.63**	0.29	0.31	0.57
There is no mutual trust between food donating' partners		**0.79**		0.62
If there would be an organized transport from our location, we would increase our food donating activities	0.45	**0.69**	0.12	0.69
It is difficult to identify food donating partners' network	0.35	**0.64**		0.53
Food donating process requires financial resources	-0.16	**0.57**	0.19	0.39
Absence of legislative barriers is necessary			**0.96**	0.92
Firm's limited responsibility for donated food is necessary		0.17	**0.81**	0.69
Eigen value	7.07	7.05	4.34	

Source: authors' calculations

Cronbach's alpha coefficients of reliability for the given variables ranged between 0.76 (formalized organizational process in the firm) and 0.87 (organized network at the national level and legislation), which proved our confidence of having a reliable measure. Data were also

tested for the normality. Normal distribution ranges between -2 and 2 and according to the skewness value that ranged between -1.3 and 1.5 in our case, we might state our data was normally distributed. Furthermore, we used variance inflation index (VIF) that measures how much variance of an estimated regression coefficient is increased due to collinearity, as well as the correlation coefficients, to determine the multicollinearity in our example. Values were between 1.02 and 1.17, which was good according to the literature (Hair et al., 1995, pp. 224) that proposes VIF shouldn't be above 10.

Once the additional variables have been created by the EFA, the model predicting food donating frequencies (dependent variable) could have been built. All independent variables that entered the model were based on some past research as well as the theoretical knowledge. Thus, besides the three variables measuring respondents' perception of the existing barriers and necessary conditions in the food donating process, firm's size and donating decision maker have also been included as the independent variables. It was expected that the larger firms, as well as those that delegate donating decisions to their store managers will donate more often. Table 5 presents descriptive statistics of all the used variables in the model.

Table 5: Descriptive statistics of the variables used in the model

	Mean	Std. Deviation	N
Donating frequency	.94	.919	34
Company size	1.41	.783	34
Responsibility for food donation approvals	2.15	1.105	34
Organized network at the national level	21.0000	4.80530	34
Formalized organizational processes at the company level	14.3824	3.82982	34
Unambiguous and transparent legislation	7.2647	2.24700	34

Source: authors' calculations

Accordingly, the linear regression analysis has been applied to the given model. All correlations were significant at 1% level and their range was between -0.29 and 0.25 which could be described as slight correlation (Table 6).

Table 6: Correlation coefficients of variables used in linear regression

		Company size	Donating frequency	Responsibility for food donation approvals	Organized network at the national level	Formalized organizational processes at the company level	Unambiguous and transparent legislation
Company size	Pearson Correlation	1	.245	−.072	−.193	−.286	.005
	Sig. (2−tailed)		.162	.685	.273	.100	.977
	N	34	34	34	34	34	34
Donating frequency	Pearson Correlation	.245	1	−.140	−.480**	−.321	−.183
	Sig. (2−tailed)	.162		.428	.004	.065	.300
	N	34	34	34	34	34	34
Responsibility for food donation approvals	Pearson Correlation	−.072	−.140	1	.000	.130	−.065
	Sig. (2−tailed)	.685	.428		1.000	.465	.715
	N	34	34	34	34	34	34
Organized network at the national level	Pearson Correlation	−.193	−.480**	.000	1	.221	.101
	Sig. (2−tailed)	.273	.004	1.000		.210	.570
	N	34	34	34	34	34	34
Formalized organizational processes at the company level	Pearson Correlation	−.286	−.321	.130	.221	1	.167
	Sig. (2−tailed)	.100	.065	.465	.210		.344
	N	34	34	34	34	34	34
Unambiguous and transparent legislation	Pearson Correlation	.005	−.183	−.065	.101	.167	1
	Sig. (2−tailed)	.977	.300	.715	.570	.344	
	N	34	34	34	34	34	34

**. Correlation is significant at the 0.01 level (2−tailed).

Source: authors' calculations

Finally, regression results showed this model significantly explained 31.6% variance of the dependent variable (donating frequency: $R=56.2$; $R^2=31.6$; $F_{5,28}=2.58$; $p<0.05$).

Despite of the initial expectations, results of the regression analysis showed that neither firm's size, nor donating decision maker were significant variables in the model, meaning they don't have any effect on the donating frequency. Also, only one of the three newly introduced variables showed as significant. It was the one measuring perceived importance of the organized network of food donation organizations at the national level and it had negative relationship with donating frequency ($\beta=-0.079$; Confidence interval - $CI = \pm1.46$ – Table 7).

Table 7: Linear regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.543	1.008		3.514	.002
	Company size	.131	.194	.111	.674	.506
	Responsibility for food donation approvals	−.099	.132	−.119	−.754	.457
	Organized network at the national level	−.079	.031	−.411	−2.528	.017
	Formalized organizational processes at the company level	−.039	.041	−.162	−.956	.347
	Unambiguous and transparent legislation	−.050	.065	−.123	−.767	.449

a. Dependent Variable: Donating frequency

Source: authors' calculations

This negative relationship can be explained in terms that those firms that perceive great importance of the nationally or centrally organized food donating network, currently donate rarely or do not donate at all. Furthermore, it proves the key role that organized network of food donation organizations at the national level has, by also implying that such central system would resolve many existing obstacles and consequently encourage firms to increase their donating activities while decreasing food surpluses.

7. Conclusion

In every industry or organization attention should be directed towards gaining efficiencies. Still, when analyzing food supply chains, it is probable to expect food waste in the process of production, processing and distribution, part of it being edible food. Even though economic instruments and measures should be applied to prevent food losses at the first place, the alternative system should be designed to encourage redistribution of surplus food through food donations in order to avoid food disposal.

Donating food is noble and politically encouraged, but not always easy. Food redistribution encompasses a diverse range of actors, networks and activities, and thus the food donation market should be structured according to economic principles. Organization of food donation network is an important incentive for donators to engage in food donation activities, but there are also other factors (especially operational and legal) that encourage or impede donating food surplus. The most common solution is the centrally organized system with a food bank as a focal organization for donors and charitable organizations, as it proves to be a pillar to a stable and well-organized food donation business model. Food banks are non-profit organizations that collect large quantities of food from donors and act as food storage and distribution depots (warehouses) for smaller front-line agencies (shelters, food pantries, social restaurants, etc.). They usually do not themselves give out food directly to end beneficiaries.

We analyze firms' behavior regarding food waste and food surplus donation in Croatian food business firms and their perception on barriers impeding food donation. Findings indicate a significant relationship between respondents' donating frequency and a role (authority to approve donations) within the firm (when the authority is delegated to a store manager instead to an owner/director the donating frequency increases), motivating factors underlying the food donation process (donating routines implemented through organizational culture being the most important) and implementation of donating procedures. Above all, factor analysis distinguished between 3 groups of factors (the importance of the organized network of food donation organizations at the national level; the importance of the formalized organizational processes at the firm level; and the importance of unambiguous and transparent legislation), and the organized network at the national level arises as a solution Croatian firms find encouraging to engage more in donating activities. Research indicates an absence of an organized central system with adequate logistic capacity and stable connections with the donors as the main reasons for having a weak donation culture in Croatian firms and thus a very narrow surplus food redistribution activity in the Republic of Croatia.

Limitations of this research are related to a low responsiveness rate of Croatian food business operators, leading to a small sample size not suitable for decisive conclusions. Further research could be directed towards comprehensive overview of all the determinants affecting food donation.

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ASYMMETRIC SPILLOVERS ON EUROPEAN STOCK MARKETS: "GOOD" AND "BAD" VOLATILITY APPROACH

ABSTRACT

Given the increased interconnection between political and economic uncertainty and financial markets, this research observes the asymmetric shock spillovers in the economic policy uncertainty (EPU) index, stock return, and stock market realized volatility on the French, German and the UK stock markets. However, the asymmetric effects of shock spillovers between variables of interest are not much explored. That is why we divide the stock market risk into "good" and "bad" volatility in observing the spillovers between the EPU series, stock return, and risk series. The contribution to the existing literature and analysis is threefold. First, the asymmetric spillover effect between EPU and the stock market is analyzed by decomposing realized volatility into "good" and "bad" volatility. Second, from a methodology point of view, most research uses GARCH models, while in this paper; a rolling vector autoregression (VAR) model is used. And last, by applying a dynamic estimation approach and analyzing spillovers for the tested variables, the results are more credible as opposed to the static analysis. We focus on France, Germany, and the UK markets. Results indicate that some asymmetry in the spillovers is present, which varies over time, visible in the spillover asymmetry measure. The results are robust, due to the inclusion of control variables via interest rates, inflation rate, and the global European stock market return.

Keywords: *Economic Policy Uncertainty, "Good" and "Bad" Volatility, Asymmetry Spillover, Dynamic Analysis.*

1. Introduction

The debate on the asymmetric risk-return relationship is not a new one, as many GARCH (generalized autoregressive conditional heteroskedasticity) models exist in which such analysis is the focus (e.g. GJR model in Glosten et al., 1993; M-GARCH (multivariate GARCH) in Chen et al., 2013). Empirical applications of such models have been extensively used over the last

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[1] The author states that the views presented in this paper are those of the authors and not necessarily representing the institution she work at.

couple of decades (see Chen et al., 2019). Furthermore, the traditional asset-pricing models (see Fama and French, 1992, 1993, 1995; Pástor and Stambaugh, 2003; or Carhart, 1997) do not recognize the rising political and economic uncertainty which is provedto be an significant variable in describing the risk and return series (Sum, 2012a, b, 2019; Ko and Lee, 2015; Li et al., 2016). Moreover, the EPU (economic policy uncertainty) has been found to be a significant variable in explaining many macro-economic and financial phenomena (Baker et al., 2016). Some papers demonstrated significant effects of EPU on the unemployment rate, real loan growth, real output, and similar macro-economic variables (Cheng, 2017; Bordo et al., 2016; Caggiano et al., 2017). The EPU variable is found to be related to the economic state of a country, i.e. asymmetries exist in modeling with respect to business cycles (see Bernal et al., 2016; Caggiano et al., 2017; Demir and Ersan, 2017; Phan et al., 2018; Istiak and Serletis, 2018). When observing financial markets, there is a wide range of literature that focuses on the effects of EPU on stock market volatility and stock market return mostly through a symmetric approach (see the literature review section). Less attention is given to asymmetry of stock market reactions; especially much less attention is given to the asymmetric effects of shock spillovers between EPU, stock return, and stock volatility. Following the work of Barndorff-Nielsen and Shephard (2002), and Barndorff-Nielsen et al. (2008), researchers started to focus on the asymmetry of stock market reactions to shocks. Foerster (2014), and Jones and Enders (2016) found the asymmetric effects of uncertainty on macroeconomic activity, whereas Liang et al. (2019) found asymmetric effects of uncertainty on stock prices. Since investors react more to bad rather than good news, they adjust their expectations based on this news so from this point of view the asymmetric spillovers are of great importance to maintain stability in markets (He et al., 2020). Baruník et al. (2016) computed volatility spillover indices observing individuallynegative changes in returns and positive changes. Also, fluctuations in positive and negative macroeconomic uncertainty have a significant impact on economic growth and asset valuations. . With negative uncertainty, stockprices recede and rise with positive uncertainty (Segal et al., 2015). The question remains if this is true for stock markets as well. For all these important aspects of asymmetric spillovers, this paper aims to examine the spillover between the EPU series, stock return, and risk series dividing the stock market risk into "good" and "bad" volatility.

The contributions of this work can be seen through several aspects. Firstly, we allow for the shock spillovers to be in all directions, i.e. all variables are endogenous in the model. Secondly, the spillovers are estimated via a rolling-window approach. This allows for a dynamic analysis over time. Furthermore, as the realized volatility is divided into negative and positive realized volatility, the asymmetry can be tested and observed over time. Previous research observes spillover between the risk, return, and uncertainty variables via symmetric approach. However, by dividing the realized volatility into the "good" and "bad", greater information is obtained between the variable interactions. In that way, interested potential investors can tailor their investment strategies in a better manner. If asymmetry is found and can be interpreted in a meaningful way, it could be possibly predicted based on new information which arises during the continuous analysis of the issue. Thus, the results provided in this research are important for international investors in the aforementioned ways. The rest of the paper is structured as follows. The second section gives a critical overview of the related literature. Afterward, the third section describes the methodology used in the fourth, empirical part of the paper. The final, fifth, section comments on implications and recommendations for investors, as well as it gives comments for future research.

2. Literature review

Economic uncertainty became very important when explaining movements in financial markets. The connection between uncertainty and stock markets is important to market participants and when designing the trading strategy, it is important to consider economic uncertainty. Because of that, many researchers study the connection between uncertainty, stock prices, stock returns, and stock volatility. The following literature is dived into two main parts. The first part includes researches that examine the impact of the EPU index, which represents general uncertainty, on stock markets. The other part of the literature distinguishes positive and negative shocks in uncertainty because these shocks can affect stock markets differently. Therefore, the focus in that other part of the literature is the asymmetry of stock market reactions. Research by Ko and Lee (2015) relies on the EPU index and employs monthly data for market indices for the following economies: the UK, Japan, Germany, Canada, France, China, India, Russia, Italy, Spain, , and the US. Using the coherency wavelet approach they found a mostly negative connection between the stock price and EPU index. A similar analysis was performed by Pirgaip (2017) for 14 OECD (the Organization for Economic Cooperation and Development, hereinafter OECD) countries. To explore the relationship between uncertainty and stock markets, a bootstrap panel Granger causality approach is applied to monthly data for the EPU index and stock price indices. First, it is proved that there is a statistically significant negative relationship between the observed variables for most of the sample. The results for Canada, Germany, Sweden, and the UK results have shown that the connection between observed variables is positive. The same method was applied by Wu et al. (2016) for France, Italy, UK, Canada, Spain, the USA China, India and Germany. The authors found that EPU affects stock prices only in the UK, while in India, Italy, and Spain stock prices affect EPU. In the remaining countries, the authors found no link between uncertainty and stock prices. Candelon et al. (2018) focused on the relationship of uncertainty and stock prices at the international level for the US, the UK, 7 European countries (the Netherlands, France, Germany, Portugal, Italy, Spain, and Greece), and 4 emerging ones (China, Brazil, Russia, and India). By estimating linear coefficients using the VAR (vector autoregression, hereinafter VAR) model, the authors identified the US and the UK as net givers, China, and Germany as neutral while other countries as net receivers.

Many earlier studies showed a negative relationship between EPU and stock market returns. For example, Christou et al. (2017), Arouri et al. (2016), and Sum (2012a) found a negative impact of EPU shocks on stock returns for the US and European markets. Sum (2012b) came to the same conclusion for most of the European countries except Lithuania, Bulgaria, Latvia, Estonia, Malta, Slovenia, and Slovakia. Vikstrom (2020) also found a negative effect of EPU on the Swedish stock market returns. De Carvalho (2017) investigated the impact of EPU on the stock and bond market returns for G7 countries (Germany, Canada, Japan, France, Italy, the United Kingdom and the United States. The sample consists of monthly EPU data and monthly prices of stock indexes. Results showed that EPU and stock returns are negatively correlated for Germany, Japan, France, the United Kingdom and the United States. For Canada and Italy there is no relationship between the EPU and stock returns. Results obtained by the GARCH model showed that EPU significantly impacts the US, UK, Canada, Germany, and Japan but there is no such evidence for France and Italy. For the same country sample, Ma et al. (2020) used the VAR model to analyze spillovers of EPU and stock market risk. They found a relationship between EPU and stock market risk, where realized volatility is used as a proxy for stock market risk. Research of economic uncertainty and the stock market for the UK is made by Gao et al. (2019). The authors employed UK, US, and EU EPU data to examine the impact of the domestic and international uncertainty on UK stock returns. Regression results showed

that only domestic uncertainty (UK EPU) has a relevant role in explaining UK stock returns. Phan et al. (2018) tested the relationship between EPU and stock returns for a large number of countries (China, India, the United States, Germany, Russia, South Korea, Australia, Italy, Brazil, Ireland, Canada, France, Spain, Japan, the Netherlands, and the United Kingdom. Using regression analysis, the overall results showed that EPU has an influence on stock returns and can predict future stock returns in most of the sample. Since Wu et al. (2016) and Sum (2012b) found no link between uncertainty and stock markets in some countries; and the results by Bekiors et al. (2016) indicate a nonlinear relationship between EPU and stock returns; there is a possibility that these two variables are connected nonlinearly and asymmetrically. Phan et al. (2018) showed that asymmetric EPU shocks can predict stock returns. Based on that, this paper includes the asymmetric effect between EPU and the stock market.

In several studies, it has been recorded that good and bad news have different impacts on stock market volatility and that asymmetric responses are produced. Earlier research of Veronesi (1999) showed that bad news in good times have great impact on stock prices and significantly smaller impact of good news in bad times on stock prices. In addition, this research revealed the greater volatility of returns in bad times than in good times and the peak is reached during periods of highest uncertainty. The work of Barndorff-Nielsen and Shephard (2002) and Barndorff-Nielsen et al. (2008) opened a new window for the greater interest of researchers for the asymmetry of stock market reactions. They separated the realized volatility (RV) into positive realized semivariance (RS^+) and negative realized semivariance (RS^-). Barndorff-Nielsen et al. (2008) devised a new measure of variation that is downside realized semivariance, which is only defined by high-frequency downward movements of asset prices. By applying the GARCH model, the authors showed that descending movements are potentially connected with the rise in future volatility. Segal et al. (2015) presented a wider picture through examination uncertainty in the macroeconomic framework and asset valuation for the period from 1930 until 2012. This research followed the approach of Barndorff-Nielsen et al. (2008) in the aspect of splitting the realized variance into two components that are going to take into account positive and negative volatility, i.e. the "good" and "bad" volatility in the underlying variable, respectively. Segal et al. (2015) showed that stock prices fall with "bad" uncertainty and rise with "good" uncertainty which means that changes in "good" and "bad" macroeconomic uncertainty have a significant and reverse impact on future growth and asset valuations. Feunou et al. (2012) and Patton and Sheppard (2015) provided similar research with a focus on the changes of stock returns. Among various research results, the authors showed that relative downside risk exists in stock markets and that it is an independent and complementary determinant of the stock risk premium. Patton and Sheppard (2015) results showed that negative realized semivariance has a greater impact on future volatility than positive realized semivariance. Also, dividing the effects of these positive and negative realized semivariance upgrades the forecasts of future volatility. The research also found that an important factor for predicting future volatility is the jump variation – volatility which is associated with negative jumps produce significantly higher future volatility and vice versa.

In recent years, the investors' attention has been occupied by the research of asymmetry in volatility spillovers. Baruník et al. (2016) introduced the volatility spillover index (of Diebold and Yilmaz, 2012) dividing negative and positive changes in returns by realized semivariances (Barndorff-Nielsen et al., 2008). This research calculated volatility spillover indices robust to the variable ordering in VAR that captures asymmetries in volatility spillovers. Instead of testing the intensity of spillovers during a specific period, the authors described asymmetry in spillovers as a result of different changes in asset prices ("bad" and "good" volatility). Results showed the asymmetric connectedness of markets at the disaggregated sectoral level, while

symmetric volatility transmission mechanism is found at the aggregate level. Asymmetric risk transmission was studied in Finta et al. (2017), who analyzed the contemporaneous volatility spillover effects focusing on the US and UK stock markets. The authors showed that an increase in US stock market volatility has a greater impact on UK stock market volatility when markets trade simultaneously rather than vice versa. The research also showed that's important to consider the contemporaneous relations because it has influence concerning the magnitude and direction of volatility spillovers between the two stock markets. As opposed to Baruník et al. (2016) and Finta et al. (2017) who computed positive and negative realized semivariances using high-frequency data, BenSaïda (2019) derived "good" and "bad" volatility from a conditional heteroskedasticity model. Furthermore, the VAR model was applied to the volatility to create the "good" and "bad" spillover indices. The research covered G7 stock market indices from January 2000, to August 2017. Significant differences are not identified by "good" and "bad" spillover single measures. When markets are in pessimistic phase, like during the global financial crisis and the European sovereign debt crisis, on average they transmit more "bad" volatility than "good" volatility. To conclude, the related research on asymmetric relationships became very popular in the last couple of years. However, the approach used in this study is lacking. Thus, the rest of the paper explores these issues.

3. Methodology description

3.1. Vector autoregression and spillover indices

The Diebold and Yilmaz (2009, 2012) spillover indices are based on the VAR models (Lütkepohl 2006, 2010; Urbina 2013). A stabile VAR(p) model is observed $y_t = v + A_1 y_{t-1} + A_2 y_{t-2} + ... + A_p y_{t-p} + \varepsilon_t$, y_t denotes the N-component vector of endogenous variables, A_i are $N \cdot N$ coefficient matrices, $i \in \{1, 2, ..., p\}$, v is the intercept vector, and ε_t being the vector innovation processes. The assumptions are such that $E(\varepsilon_t)=\mathbf{0}$, $E(\varepsilon_t \varepsilon_t')=\Sigma_\varepsilon < \infty$ and for $t \neq s$ it holds $E(\varepsilon_t \varepsilon_s')=0$. Every VAR($p$) model has a compact VAR(1) from $Y_t = v + A Y_{t-1} + \varepsilon_t$, in which

$$\mathbf{v} = \begin{bmatrix} v & \mathbf{0} & \cdots & \mathbf{0} \end{bmatrix}', \qquad A = \begin{bmatrix} A_1 & A_2 & \cdots & A_{p-1} & A_p \\ I_N & 0 & \cdots & 0 & 0 \\ 0 & I_N & & \vdots & \vdots \\ \vdots & & \ddots & \vdots & \vdots \\ 0 & 0 & \cdots & I_N & 0 \end{bmatrix}, \qquad Y_t = \begin{bmatrix} y_t & y_{t-1} & \cdots & y_{t-p} \end{bmatrix}', \qquad \text{and}$$

$\varepsilon_t = \begin{bmatrix} \varepsilon_t & \mathbf{0} & \cdots & \mathbf{0} \end{bmatrix}'$ Every stabile VAR model has a MA(∞) representation, in order to construct the impulse response functions (IRFs) and the forecast error variance decompositions (FEVDs). The MA(∞) form is:

$$Y_t = \mu + \sum_{i=1}^{\infty} A^i \varepsilon_{t-i}, \tag{1}$$

in which $\mu \equiv (I_{Np} - A)^{-1} \mathbf{v}$, i.e.:

$$Y_t = \Phi(L)\varepsilon_t, \tag{2}$$

in which $\Phi(L)$ is the polynomial of the lag operator L. Values in $\Phi(L)$, i.e. $\phi_{jk,i}$ are interpreted as the usual impulse responses. The approach we utilize for the IRFs is the generalized IRFs and GFEVDs (generalized FEVDs) (see Pesaran and Shin, 1998). This is due to this approach not depending on the ordering of the variables in the model, which is relevant for the, e.g. Cholesky decomposition of the variance-covariance matrix or the error terms. The h-step ahead forecast of all variables are estimated as the following difference: $Y_{t+h} - E(Y_{t+h}) = \sum_{i=0}^{h-1} \Phi_i \varepsilon_{t+h-i}$,

of which the mean squared error is estimated as: $E\left[Y_{t+h} - E(Y_{t+h})\right]^2 = \sum_{k=1}^{N} (\phi_{jk,0}^2 + ... + \phi_{jk,h-1}^2)$. Finally,

the variance decomposition of every variable in vector Y_t, $\omega_{jk,h}$, is estimated as the following ratio:

$$\omega_{jk,h} = \sigma_j^{-1} \sum_{i=0}^{h-1} \left(e_j' \Phi_i \sum_{\varepsilon} e_k \right)^2 / e_j' \Phi_i \sum_{\varepsilon} \Phi_i ' e_j, \tag{3}$$

in which the shocks-contribution of variables k to the j-th variable forecast error are in the numerator, and the denominator is the j-th variable MSE (mean squared error) forecast of . e_j and e_k are columns j and k in matrix I_{Np}. Now, the total spillover index of Diebold and Yilmaz (2009, 2012) is estimated as the following ratio:

$$S = \sum_{\substack{j,k=1 \\ j \neq k}}^{N} \omega_{jk,h} / \sum_{i=0}^{h-1} \sum_{j,k=1}^{N} \omega_{jk,h} 100\%, \tag{6}$$

and is interpreted as the percentage of the total error forecast variance in the h-step ahead forecast of all variable due to shocks in all other variables in the model. To construct the full spillover table, the directional indices are calculated via formulas:

$$S_{j\square,h} = \frac{1}{N} \sum_{\substack{k=1 \\ j \neq k}}^{N} \omega_{jk,h} 100\%, \quad S_{\square j,h} = \frac{1}{N} \sum_{\substack{k=1 \\ j \neq k}}^{N} \omega_{k\ j,h} 100\% \tag{7}$$

in which $S_{j\square,h}$ is called the "to" directional index, as it measures how much of the mean squared error forecast of other variables is explained due to shocks in variable j, and $S_{\square j,h}$ is called the "from", due to it measuring how much of the mean squared error forecast of variable j is explained due to shocks in other variables in the model. "Pair-wise" indices are calculated as well; so that a pair of two variables in the model can be examined in which variable is the net receiver of shocks, and which one is the emitter. This is important for portfolio construction purposes. As the next section includes the dynamic analysis as well, all of the above estimations and calculations will be made on a rolling-window basis. This is true for the asymmetric spillover indices described in the next subsection as well.

3.2. Asymmetric spillover indices

Baruník et al. (2016, 2017) and Bevilacqua (2018) defined the asymmetric spillover indices, to observe whether good or bad news/market conditions/economic conditions end with different results in the interaction between the relevant variables. Firstly, the research of Andersen et al. (2001) and Barndorff-Nielsen (2002) defined the realized variance RV on day t as:

$$RV_t = \sum_{i=1}^{n} r_i^2, \tag{8}$$

where r_i is the i-th intraday return. Barndorff-Nielsen et al. (2010) proved that RV can be decomposed into positive RV_t^+ and negative semivariance RV_t^-, i.e. $RV_t = RV_t^+ + RV_t^-$, where:

$$RV_t^+ = \sum_{i=1}^{n} r_i^2 I_{r_i > 0}, \quad RV_t^- = \sum_{i=1}^{n} r_i^2 I_{r_i \leq 0} \tag{9}$$

in which $I_{r_i > 0}$ and $I_{r_i \leq 0}$ denote indicator functions. The first function takes values of 1 when returns are positive, and the second function takes the value of 1 for non-positive returns. Thus, in the VAR modeling and estimating the aforementioned spillover indices, we divide the total RV into positive and negative ones, i.e. into "good" and "bad" volatility. Denote with S^+ the

total spillover index, defined in (6), but for the VAR model with RV_t^+, and S^- the total spillover index for the VAR model when RV_t^- is used. The spillover asymmetry measure (SAM onwards), is a simple difference between the values of S^+ and S^-: $SAM = S^+ - S^-$; and the interpretation is straightforward. The greater the asymmetry of spillover exists, the values of the *SAM* measure will be greater (regardless of the sign of the values).

## 4. Empirical results

4.1. Data description

For the empirical analysis of this paper, we have collected daily data on the price series of DAX, FTSE, and CAC (German, UK, and French) indices, as well as realized volatility (RV) and negative realized semi-variances (RV⁻) from the website Oxford-Man Institute of Quantitative Finance (2021). Daily data ranges from 1 August 2004 until 21 December 2020. This is the chosen range, as August 2004 is the earliest available data regarding MSCI values (see below in text). As Barndorff-Nielsen et al. (2010) proved that RV is the sum of RV⁻ and RV⁺, the positive realized semi-variances, RV⁺, were calculated as the difference between series RV and RV⁻. The daily return series were calculated via formula $r_t = \ln(p_t / p_{t-1})$, where r_t is the return series and p_t is the daily index value of every index on day t. Average monthly returns, RV- and RV⁺ series were calculated. Furthermore, daily values of the MSCI Europe stock market index were collected from Investing (2021), and the return series was calculated as previous ones, averaging into monthly ones. Monthly values of the short-term interest rate (3 months, Government bonds) for every country were collected from Investing (2021) as well. The inflation rate data (based on HICP index, 2015 = 100) is used from Eurostat (2021), and the EPU index values for every country were collected from the EPU website (2021). Monthly data also ranges from August 2014 until the end of 2020. Table 1 gives a brief description of the abbreviations used in the rest of the section. As the VAR models will be focusing on the return series of each stock market index, the positive or negative RVs, and EPUs of corresponding countries, we omit the abbreviations for other control variables in every model.

Table 1: Data description and abbreviations

Variables / Country:	Germany	UK	France
Return	r_{DAX}	r_{FTSE}	r_{CAC}
RV⁻	RV⁻$_{DAX}$	RV⁻$_{FTSE}$	RV⁻$_{CAC}$
RV⁺	RV⁺$_{DAX}$	RV⁺$_{FTSE}$	RV⁺$_{CAC}$
EPU	EPU$_{DAX}$	EPU$_{FTSE}$	EPU$_{CAC}$

Source: Authors

An example of the shares of RV⁻ and RV⁺ of the German total realized volatility is shown in Figure 1, where it is seen there is a mild advantage in the share of negative realized volatility over the entire period (almost 55%). Moreover, Figure 2 shows that increases of the EPU are for the majority part of the observed period in line with increases of RV. The corresponding figures for UK and France are available upon request. The next subsection analyses the difference between the spillovers of shocks when taken into consideration if the volatility is classified as "good" or "bad".

Figure 1: Shares of RV⁻$_{DAX}$ and RV⁺$_{DAX}$ in total realized volatility, Germany
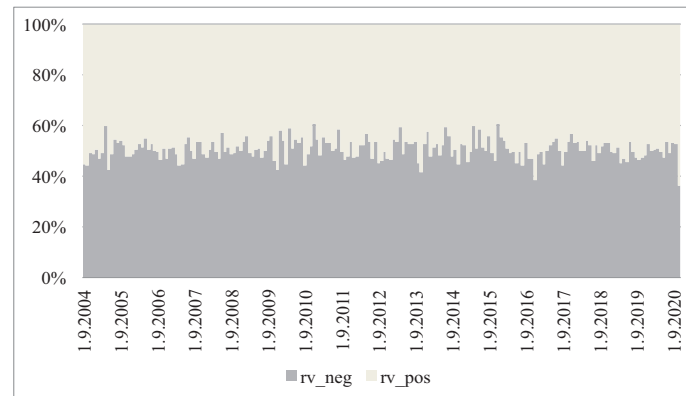
Source: authors' calculation

Figure 2: German EPU$_{DAX}$ (right axis) and the total realized volatility (left axis)
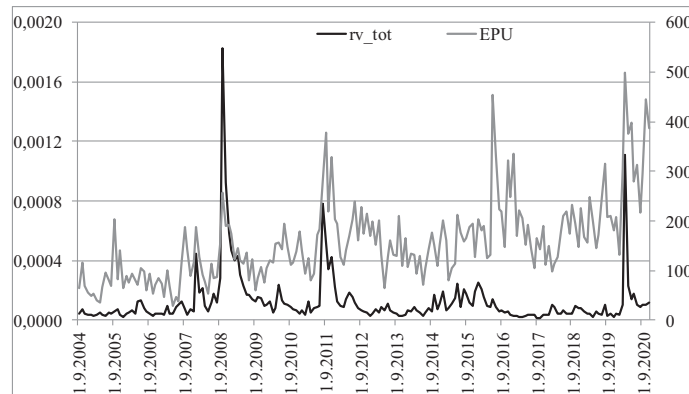
Source: authors' calculation

4.2. Static analysis

All variables in the study were tested via ADF unit root tests and those that needed to be converted to stationary, were converted via differencing (stationary series were the return series, and the RV variables, detailed results are available upon request). Then, for every country, we estimated a VAR model, based on the information criteria, and checking for multivariate autocorrelation and heteroskedasticity of residuals of the model. Table 2 shows the results of chosen p length of the VAR model for every country, based on information criteria, and the final length in which the residuals of each model were found to be white noise. For German data, we chose $p = 2$ both for RV⁻ and RV⁺, as here the null hypotheses of autocorrelation and heteroskedasticity tests (up to lag length 12) could not be rejected on 5%, whereas the problems existed for $p = 1$. The same result was found for the UK data. Similar findings are for France data as well, with the only exception of the RV⁻ model, in which $p = 3$ was chosen so that the results are reliable. Thus, we estimate 6 VAR models in total, between the return series, RV series, and the EPU series, in which RV⁻ is observed in one variant, and RV⁺ in another.

The 6 VAR models for the entire sample were estimated, and based on the results, the spillover tables have been calculated, and are shown in Tables 3 and 4. Table 3 depicts results for the RV⁺ series, whereas Table 4 shows the results of the RV⁻ variant of each model. Let us briefly interpret the results in the first row of Table 3, for German data, due to other interpretations being similar so that economic conclusions can be made. The shocks in return series of DAX

explain in total 95.58% of the variance of the same variable in the observed period, whereas shocks in the RV^+ series and shocks of changes in EPU explain 1.11% and 3.31% of the return variance respectively. Values in column "FROM" are average spillover percentages of shocks in other variables to the variable in each row we are focusing on, whereas values in the row "TO" are average percentages of every variable shock explaining the variances of other variables in the system. E.g., the value in the first row 1.47, is the average percentage of return shocks explained via other variables (i.e. RV^+ and changes in EPU). On the other hand, value 3.35 is the average percentage of variances of RV^+ and changes in EPU series explained due to shocks in return series.

Table 2: Lag length in VAR(p) model

Country	RV	AIC	HQC	SIC	FPE	Chosen
Germany	-	1	1	1	1	2
	+	1	1	1	1	2
UK	-	2	1	1	2	2
	+	2	1	1	2	2
France	-	2	1	1	2	3
	+	2	1	1	2	2

Source: authors' calculation

Table 3: Static results of spillover tables, RV^+ (left panel) and RV^- (right panel), $h = 12$

Germany	r_{DAX}	RV^+_{DAX}	EPU_{DAX}	FROM		Germany	r_{DAX}	RV^-_{DAX}	EPU_{DAX}	FROM
r_{DAX}	95.58	1.11	3.31	1.47		r_{DAX}	92.92	3.88	3.19	2.36
RV^+_{DAX}	5.48	82.03	12.49	5.99		RV^-_{DAX}	7.91	81.12	10.97	6.29
EPU_{DAX}	4.57	6.64	88.78	3.74		EPU_{DAX}	4.49	6.24	89.27	3.58
TO	3.35	2.58	5.27	11.20		TO	4.13	3.38	4.72	12.23

UK	r_{FTSE}	RV^+_{FTSE}	EPU_{FTSE}	FROM		UK	r_{FTSE}	RV^-_{FTSE}	EPU_{FTSE}	FROM
r_{FTSE}	96.68	1.21	2.12	1.11		r_{FTSE}	97.39	0.54	2.06	0.87
RV^+_{FTSE}	10.90	85.83	3.27	4.72		RV^-_{FTSE}	8.33	87.53	4.14	4.16
EPU_{FTSE}	0.58	1.68	97.74	0.75		EPU_{FTSE}	0.67	1.91	97.42	0.86
TO	3.83	0.96	1.80	6.58		TO	3.00	0.82	2.07	5.89

| France	r_{CAC}	RV^+_{CAC}	EPU_{CAC}	FROM		France	r_{CAC}	RV^-_{CAC}	EPU_{CAC}	FROM
r_{CAC}	94.43	4.13	1.44	1.86		r_{CAC}	89.53	8.89	1.57	3.49
RV^+_{CAC}	4.99	91.00	4.01	3.00		RV^-_{CAC}	5.92	89.95	4.13	3.35
EPU_{CAC}	0.53	3.18	96.29	1.24		EPU_{CAC}	0.55	3.04	96.40	1.20
TO	1.84	2.44	1.82	6.09		TO	2.16	3.98	1.90	8.04

Source: authors' calculation

Finally, the overall spillover index is equal to 11.20%, which indicates mild spillovers between all of the series. Now, we can see that regarding German data, the shocks in changes of EPU spill over to other variables in a greater manner, and changes in the RV^+ are the ones receiving most of the shocks from other variables. Next, by focusing on the UK data, we can see that shocks in return series are those that spill over the most to other variables, and the shocks in dEPU are much smaller than in the German case. The French data indicate that the least amount of the variance of each variable is explained by shocks in other variables, i.e. the spillovers of shocks are far less prominent on the French market. A strong impact of shocks in German EPU on volatility is also found in Ma et al. (2020), while for the case of the UK and France the impact on volatility is less intensive. Next, by focusing on the results of the negative realized volatility VAR models in right panel of Table 3, the conclusions for all three markets are very similar. This indicates that on a monthly level, there aren't many differences in the shock

spillovers between all three series, when we differentiate negative and positive realized volatility. This is in line with results in BenSaïda (2019); and Huang and Liu (2021) regarding EPU and return series for Germany.

4.3. Dynamic analysis

By moving on to the dynamic analysis, all 6 VAR models have been estimated on a rolling window basis, with the length of the window being 36 months (3 years), so that enough data is available for the degrees of freedom. This is in line with previous research using shorter window length for financial markets, and longer for business cycles (see Škrinjarić, 2021; Škrinjarić and Orlović, 2020; Škrinjarić et al. 2020; Antonakakis et al., 2016). In some previous research, it is proved that financial crisis increases EPU spillover (Ma et al., 2020; Gao et al., 2020), which is in line with results in this paper. During the financial crisis, uncertainty was high in 2008 and most of the European countries share a similar uncertainty cycle (Rossi and Sekhposyan, 2016). Because of that, the results show an increased and similar level of spillovers in Germany, the UK, and France.

**Figure 3:** Rolling total spillover index
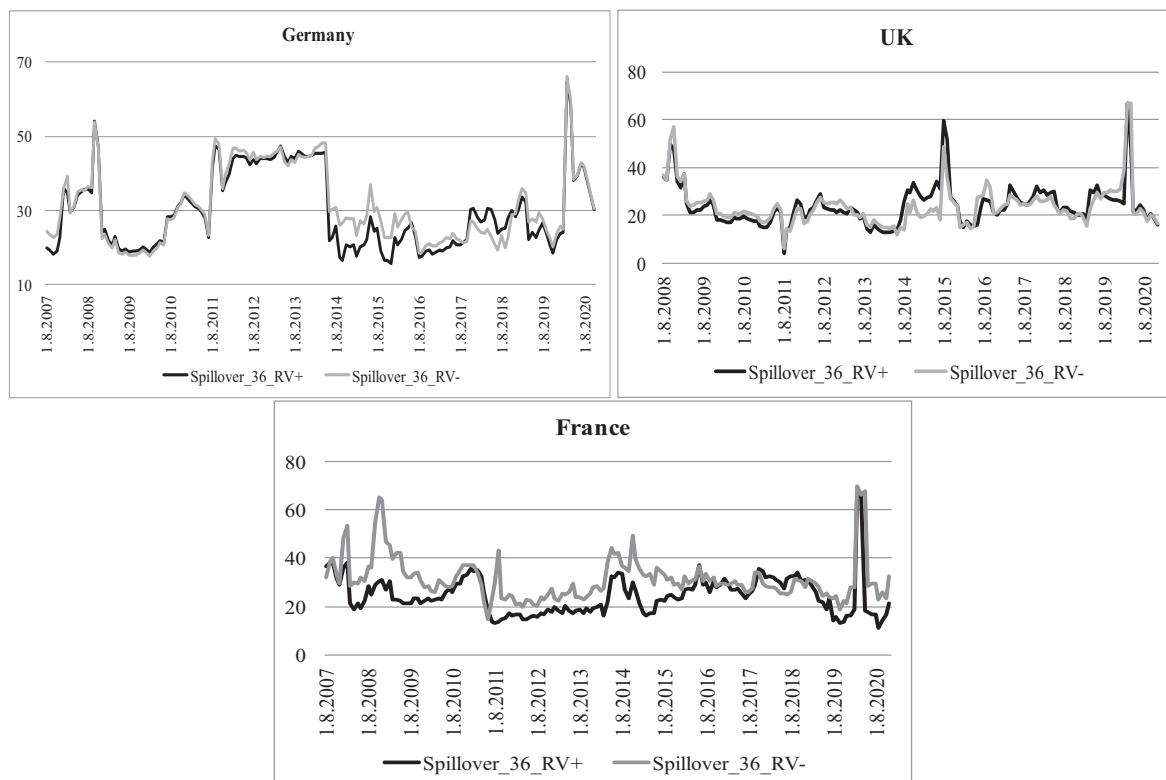
Source: authors' calculation

As depicted in Figure 3, in the case of Germany, spikes are visible during 2011-2012 extending further until 2014, which could be explained by the European sovereign debt crisis. Starting in 2009, with problems in Greece and escalating into the potential for sovereign debt defaults from other EU members, France and Germany aimed to support these members. Besides several measures that were proposed, as a solution to tackle the Eurozone debt crisis, a new method of financing has become available – the Eurobond. Countries facing problems could borrow new funds at favorable conditions as the rating of the non-crisis countries supports them. In the case

of the UK, a spike is evident in 2015, which could be connected with the beginning of Brexit, since Brexit was on the ballot paper in 2015.

Unlike in the case of Germany and the UK, where positive and negative volatilities are overlapping almost during the whole observed period, this is not the case for France. Negative spillovers dominate positive spillovers during the global financial crisis and the European sovereign debt crisis, which confirms that the markets transmit, on average, more "bad" volatility than "good" volatility which is in line with BenSaïda research (2019). The spikes of spillovers during the recent COVID-19 pandemic crisis are prominent in all Figures, as the stock markets reacted heavily to this crisis, but the spikes are short-lived, as previous literature finds short-term stock market reactions to the announcements and problems regarding this pandemic (Baek et al., 2020; Bouri et al., 2020; Liu et al., 2020; Huo and Qiu, 2020; Haroon and Rizvi, 2020; Chaudhary et al. 2020; Li et al., 2020). Additionally, in the same period, the UK officially left the European Union (February 1, 2020) and it affected a significant increase in EPU level in all observed countries.

Figure 4: Spillover asymmetry measure
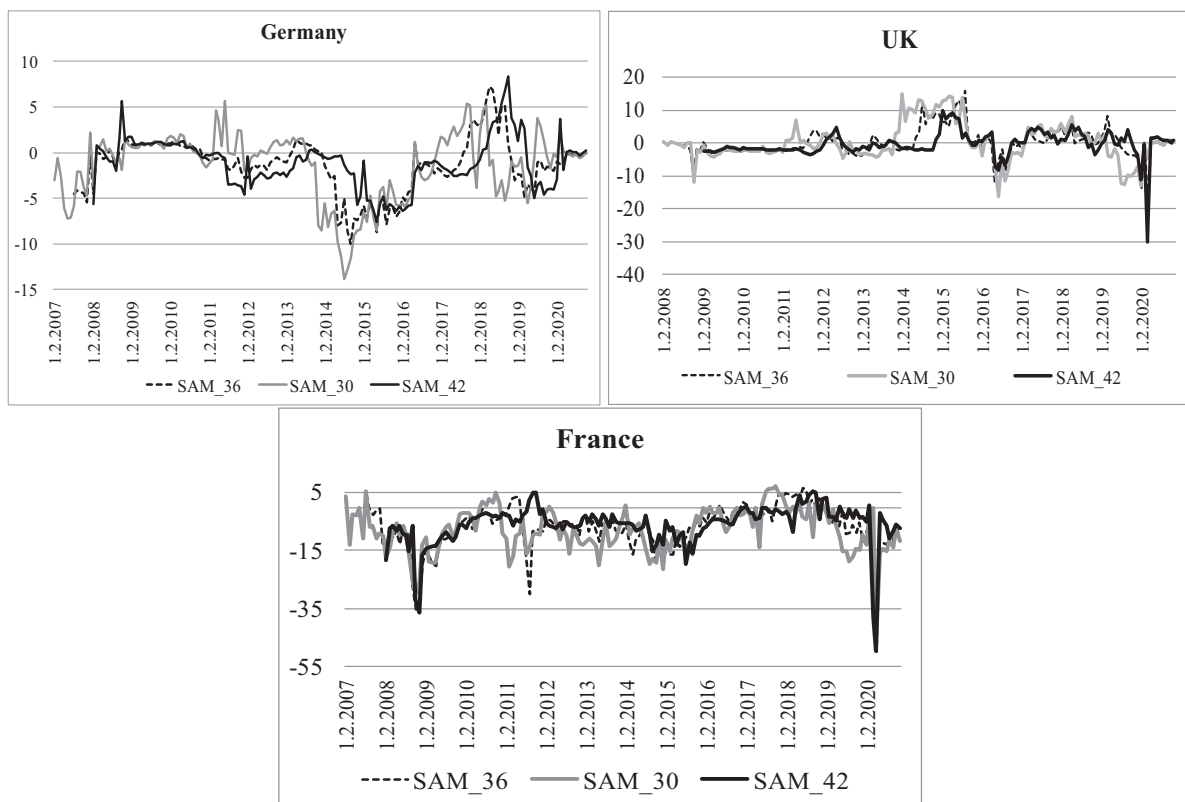
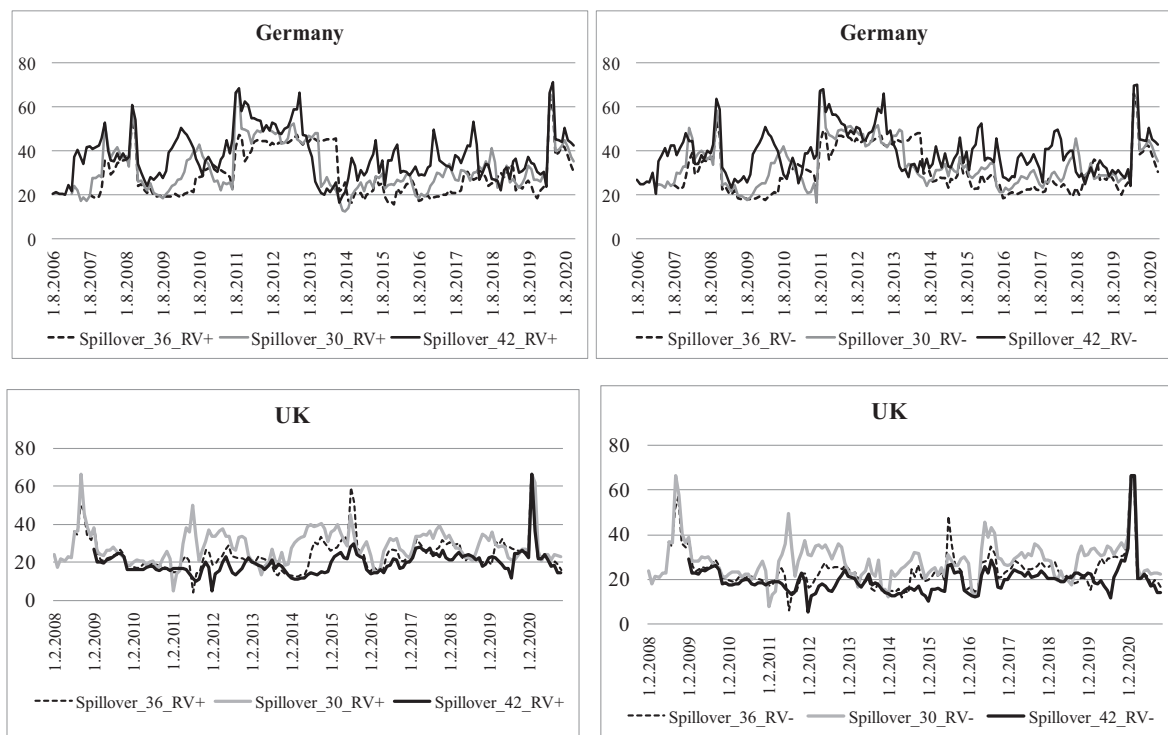*Source: authors' calculation*

Besides the length of the window of 36 months, a VAR model was estimated for the length of 30 and 42 months for every window, which is used afterward for the robustness checking as well. Figure 4 shows spillover asymmetry measures where positive values indicate the dominance of positive spillovers and vice versa. When observing the German financial market from 2014 to 2016, significant negative spillovers can be observed. In the mentioned period Germany faced a migrant crisis which certainly created uncertainty and affected financial markets. It also affected the whole economy by slowing the growth rate. From 2016 the situation has stabilized which was accompanied by a resumption of economic growth in 2018 which can explain positive realized volatility spillovers. Comparing the UK market with

Germany and France there is much less asymmetry in the observed period. 2016 can be highlighted because the Brexit referendum took place which can explain the negative realized volatility. Except for 2020 in which COVID-19 caused extremely negative spillover in the remaining observed period, it can be concluded that there is no asymmetry present. In the 21st century, France is faced with many terror attacks which can be one of the reasons why the spillover asymmetry is present during the almost whole period. Stock markets reacted to these events and it can be seen through mostly negative spillover asymmetry. Major terror attacks with human victims happened in 2015 and by observing Figure 4 for 2015 spillover asymmetry is more obvious.

4.4. Robustness checking

Finally, as a robustness checking, the length of the rolling-window estimations has been changed from 36 months to 30 and 42. Diebold and Yilmaz (2009, 2012) suggest changing the values of the rolling estimations to see if the dynamics of the Spillover indices change over time. The idea is that robust results should indicate that the different SIs (spillover indices) have a bit different values, due to the different window length of the calculation, but the dynamics should indicate the same patterns over time. If we observe all graphs in Figure 5 for all three stock markets, we can see that our results are robust. This is due to all SIs indicating the same conclusions we have been talking about in the previous subsection. The robustness checking of the SAM series can be done by observing Figure 4as there we immediately put the values due to changing the lengths from 36 months to 30 and 42. Again, the dynamics tell the same story over the observed period.

Figure 5: Total spillover indices, changing the length of the rolling-window analysis, RV⁺ left panels, RV⁻ right panels
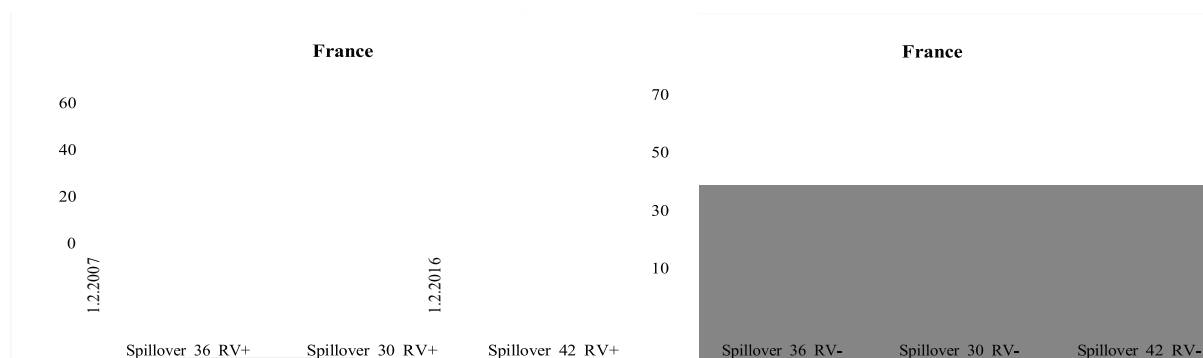
Source: authors' calculation

5. Conclusion

The overall results are in favor of slightly higher spillover indices for the "bad" volatility cases of VAR models. This indicates that in times of market downturns, the investors and the market overall become more sensitive to new information and become more irrational. The spillover indices are time-varying, but the difference between the "good" and "bad" volatility cases is not very prominent. It is not surprising that bad news and economic risks affect the stock market dynamics more when compared to calmer periods. However, such findings also are important to know if financial stability exists in certain markets, as well as how to conduct risk management.

The shortfalls of this research include observing markets solely by themselves. Although we controlled the rest of the European markets via the MSCI market index, the international investors are interested in spillovers between the stock markets as well. Thus, future work will extend the analysis into the spillover framework between stock markets as well. This will provide more insights into the possibilities of obtaining extra profits or achieving diversification possibilities. Moreover, due to EPU data not being available on a daily or weekly basis, the analysis was made with monthly data. If the mentioned frequencies of data become available in the future, other methodologies can be explored to see if greater asymmetric relationships exist on other levels. As financial literature finds greater effects of one variable to another in the short-term, maybe other data frequencies would exhibit such results. Future work could explore how to exploit such results, in terms of forecasts of variables of interest so that trading strategies can be formed with respect to changing dynamics.

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GREEN GDP AND ITS ENVIRONMENTAL IMPLICATIONS; IS CHINA'S GROWTH BECOMING GREENER?

ABSTRACT

A widely cited identity I = PAT proposed by the Ehrlich and Holdren in the early 1970s, suggested that population interacts with affluence and technology to determine a society's environmental impact. Namely, with a rising population and consumption, on a given economic growth path, environmental consequences would inevitably increase unless the technological advancements were sufficient to overcome it. Arguments that came out of the controversy regarding this formula, provided some theoretical foundations for the claim that economic growth can indeed be sustainable and green. The relatively new concept of Green GDP in fact endorses this apparently virtuous model of growth so that economic development can go hand in hand with greater improvement in physical, human as well as natural capital. One country, namely China, elusively ignores mainstream economic vocation progressively advancing towards establishing itself as a political and economic force, yet it is still labelled as developing country with relatively low per capita income that constantly faces traps of economic progress. The goal of this paper is to evaluate the implications of augmented hence, more economically inclined, I = PAT equation by observing a country that witnessed an enormous population growth followed by almost impeccable economic growth and showed inconsistent green policy aspirations over time. Long-run empirical assessment on the augmented equation for China is based on cointegration approach and vector-error correction term modelling for the period 1970-2018. The analysis indicates conclusions that are consistent with theoretical foundations, confirming the negative effect of population and affluence, and a positive effect of technological improvement on the green growth perspective.

Keywords: green GDP, IPAT equation, environment, cointegration, VECM, China.

1. Introduction

In searching for greater economic prosperity, many countries sacrificed their environmental quality to achieve higher growth rates and higher benefits of standard economic features. They turned to industrial practices that left them worse in the long-run, damaging their and therefore global ecosystem. The main challenge for long-term (sustainable) economic policy making is

the dual objective of development and environment. Hence, future growth models cannot mimic the growth model of today's industrialized economies that fuelled growth on the basis of intensive production and aggressive resource consumption. In addition, beyond accelerated industrialization, sustainable development has been also pressured by population growth and/or high urban density. For example, China as today's leading manufacturing centre of the world, exhibits this problem writ large (Chertow, 2008). China elusively ignores mainstream economic vocation progressively advancing towards establishing itself as a political and economic force, yet it is still labelled as developing country with relatively low per capita income that constantly faces traps of economic progress. One of that trap is, certainly, the environmentally sustainable growth and development. Ehrlich and Holdren (1971) identified population size and growth as the most urgent factor in environmental sustainability, whereas Commoner (1972) argued that production technologies were the dominant reason for environmental degradation. But, if we see improved technological solutions as attempts to ameliorate the negative environmental impact of population growth and raising per capita consumption, we come across practical limitations to sustainable growth. An arguable environmental identity named IPAT, proposed by the Ehrlich and Holdren, implies that population interacts with affluence and technology to determine a society's environmental impact. Namely, with a rising population and consumption, on a given economic growth path, environmental consequences would inevitably increase unless the technological advancements were sufficient to overcome it. The I = PAT model provides a useful compass for deeper understanding of environmental change that arises from driving forces of economic growth. Arguments that came out of the controversy regarding this equation, provided some theoretical foundations for the claim that economic growth can indeed be sustainable and green. The relatively new concept of Green GDP in fact endorses this apparently virtuous model of growth so that economic development can go hand in hand with greater improvement in physical, human as well as natural capital.

The objective of this paper is to evaluate the implications of broaden and more economically inclined, I = PAT identity by observing China, a country that witnessed an enormous population growth followed by almost impeccable economic growth and showed inconsistent green policy aspirations over time. The hypothesis that stands behind the title of the paper is focused on evaluating the green perspective of China's economic growth. Long-run empirical assessment on the augmented equation is based on cointegration approach and vector-error correction term modelling for the period 1970-2018. The analysis indicated conclusions that are consistent with theoretical foundations, confirming the negative effect of population and affluence, and a positive effect of technological improvement on the green growth perspective.

The rest of the paper is organized as follows. In Section 2 we will provide a brief overview of the theory that stands behind the I = PAT identity and related empirical background. Section 3 reviews used methodology and data while Section 4 evaluates empirical results and offers conceptual discussion on the implications of those results for China. Section 5 provides concluding remarks.

2. Theoretical background

2.1. What is the I = PAT identity

The I = PAT identity or sometimes simply called IPAT is an acronym for the equation that was devised to discuss and better understand which factors, positively or negatively, are involved in environmental (un)sustainability. Multiplicative equation, written as I = P x A x T in fact measures the impact of human activities on the environment (namely variable I) as a function

of three variables (population, affluence and technology), all of which are additionally inter-related[1]. The population represents the number of people so if there are more people, *ceteris paribus*, there will be higher resource consumption and thus greater impact on the environment. Affluence here refers to the per capita consumption of material wealth, therefore, *ceteris paribus*, a society in which people have more material wealth will have a greater impact on the environment. And finally, technology is seen as a mechanism to temper population and consumption increases as refers to the efficiency with which resources are converted into wealth, so the more efficiently we use resources, *ceteris paribus*, the smaller our environmental impact is. As Dietz and Rosa (1994, p. 289) point well, I = PAT identity offers a useful, if fallible guide, for setting us on journey towards a deeper comprehension of environmental effects of human activity for the equation is simple (because it incorporates key driving forces with parsimony), systematic (because it specifies the mathematical relationship between the driving forces and their impacts) and robust (because it is applicable to a wide variety of environmental impacts). Although first used to quantify factors of unsustainability, the identity has been reinterpreted to assess the most promising path to sustainability and greener prospect of growth.

A sizeable segment of the existing literature on population and environment has attempted to clarify the intricacies of the theoretical nexus between environmental change and a restricted list of variables such as technology, population size, characteristics, and growth, consumption levels and patterns (Martine, 2005, p. 261), however we are aware that the inter-relationship between population, affluence and technology are much more complex that the suggested equation. It is clear now, that driving forces interact, that each can have meaningful impact only in relation to the impact of others and that the environmental implications of increased population are highly sensitive to economic and technological condition of that population. The problem amplifies when a country has to rival with overpopulation, excessive affluence and faulty technology simultaneously (Holdren, 2018, p. 67). Even the authors of the equations were aware of its simplicity, as it laid the ground for complex approaches in Commoner, Corr and Stamler (1971), and Dietz and Rosa (1994, 1997a). Dietz and Rosa (1994, p. 287) offered some solutions for the equation by reformulating all three driving variables, but also suggested that formulation of I = PAT should be guided a social model of environmental impact that would include a number of variables that can be reasonably hypothesized to influence environmental change (variables that represent social movements and cultural history).

As Chertow (2001, p. 15) argues that the I = PAT identity has led also to the master equation in industrial ecology, which have been followed by two concepts in sustainability research, namely the Factor 10 Club and Factor Four[2]. By relating I =PAT equation to the so-called Master equation within Industrial ecology domain, we come to conclusion that increases in population are expected to continue for several decades more, and that increases in affluence actually have the potential to improve quality of life for billions of people around the world. Thereby, if the population would increase by 50% and if affluence only doubles over the same time period, then environmental impact would increase threefold. Such demographic realities put the burden of sustainability largely on the technology, which is an essential counterweight

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[1] This mutual dependency between the variables on the right side of the equation additionally confirms the relevance of the applied vector autoregressive approach within our methodological framework.
[2] Same author offered a great elaboration on the history of I = PAT identity and its variants. Chertow (2001, p. 13) accentuated also that, although the equation was once used to determine which single variable was the most damaging to the environment, an industrial ecology view reverses this usage, recognizing that increases in population and affluence can, in many cases, be balanced by improvements to the environment offered by technological systems.

to increases in population and national outcome per capita, implicitly requiring environmentally effective technological choices that will reduce pollution per unit of economic impact (Chertow, 2008, p. 7). Finally, by following the words of the authors of the I = PAT identity, complacency concerning any factor of the equation (sociological, technological, economic or ecological) is unjustified and counterproductive (Ehrlich and Holdren, 1971, p. 1216). Nevertheless, the idea of conceptualizing how big impact has human economic activity on the environment has withstood the challenges of dynamic changes as it remained relevant over the past 50 years by helping in promotion of other environmentally related concepts and solutions, especially in the field of industrial ecology.

2.2. Related empirical work

Since many authors use I = PAT equation to formulate and present their own perception of environmental impact, in the bulk of both, theoretical and empirical works, we will mention some of the relevant theoretical papers and researches that influenced our modelling approach and our perspective on environmental impact. Waggoner and Ausubel (2002) tried to renovate the I = PAT identity towards their so-called ImPACT equation implying that it could assay the likelihood and practicability of environmental targets and timetables as annual 2-3% progress in consumption and technology over many decades and sectors provides a benchmark for sustainability. Magee and Devezas (2018) developed a quantitative model for dematerialization similar to the I = PAT equation by applying all environmental impacts that are extensive (for example energy and waste consumption) and suggested that a rebound effect is not necessary to be considered as modified technological substitution models could be useful for evaluation of intensive environmental impact. Gans and Jöst (2005) analyzed the decomposing of the impact of population growth on environmental deterioration by offering interesting critical comments on a widespread I = PAT identity within ecological economics. The authors indicated that the simple I = PAT identity is a suitable starting point. However, two problems should be taken into account if we want to extend the this approach: (i) we should be able to test empirically if the variables on the right hand side of the equation are significant for the explanation of the change in the use of the environment; (ii) we should take into account, that there exist interdependencies between the variables on the left hand side of the equation. Evaluation of engaging researches that assess the environmental impact through the related STRIPAT framework could be found in Sorge and Neumann (2019).

Besides key papers from Ehrlich and Holdren (1971) and Commoner (1972), one of the most interesting papers is provided by Dietz and Rosa (1997b) who developed a stochastic I = PAT model based on the sample of 111 countries to estimate the effects of three PAT variables on CO_2 emissions. Their results confirmed the general value of the I = PAT equation as a starting point for understanding the anthropogenic driving forces of global change and suggested that population and economic growth that was anticipated over the next decade will exacerbate greenhouse gas emission. Two papers dealing with China's situation greatly influenced our research. The first is that of Chen, Yang and Chen (2013) who offered a scenario analysis of a low carbon transformation and a path selection for China based on a modified I = PAT model through the analysis of population, economic development, energy consumption and CO2 emissions variation in the short- and long-term steps before 2020. The authors used four scenarios: business as usual scenario, energy efficiency improvement scenario, low carbon scenario and enhanced low carbon scenario. The results indicated that carbon intensity will be reduced by 40–45% as scheduled and economic growth rate will be 6% in China under third i.e. low carbon scenario by 2020, hence this should the most appropriate approach in maximization of the harmonious development of the economy, society, energy and

environmental systems. Şahin and Yildirim (2019) analyzed the driving forces of CO_2 emissions in China during the 1971- 2014 periods using the I = PAT equation through ARDL methodology. They concluded that both, long- and short-term elasticises, indicated that population growth, economic growth and technology increased CO_2 emissions.

3. Methodological background

3.1. Methodology

In order to comprehend the imperative of technological change in relation to population growth and its affluence within the most general perception of a sustainable relationship between humanity and nature, we applied augmented I = PAT equation. As the initial equation that represents environmental impact (*I*) as the product of three variables, namely population (*P*), affluence (*A*) and technology (*T*) can be considered as a formulation of factors that contribute to unsustainability, lately it has been reinterpreted to assess the most promising path to sustainability (see discussions from Chertow, 2001). To respect Commoner's originality and Ehrlich and Holdren simplicity in grasping the relationship between technological innovation and environmental impact, as well as to encompass relevant features of China's economic progress (huge population growth, advancements in technology, rise in national income and consumption and etc.), we opted to broaden the I = PAT formulation by introducing alternative interpretation of several variables[3]. Such variant of the initial equation should enlighten the importance of selected variables in explanation of China's socio-economic growth path. Our augmented I = PAT formulation for China can be expressed as:

> *Green gap = Population x Consumption x Gross National Income x Technology*
> (*1*)

so that the Green gap variable (replacing the I), captures the pure environmental impact of featured socio-economic variables[4]. In addition, to emphasize the relevance of the consumption per capita in the creation of China's economic growth, we introduced supplementary variable of gross national income (replacing the A). Therefore, equation (1) suggests that with a rising population and (given income growth) rising consumption, environmental impact (hence the gap between the GDP and environmentally corrected GDP) would inevitably increase, unless the productivity of technology is sufficient to overcome it. These arguments provide the practical foundation (rising from the theoretical foundations of I = PAT identity) for answering the question is China's growth becoming more greener or not?!

3.2. Data

The analysis is based on annual data covering the period 1970-2018, obtained mostly from the World Development Indicators database (2020). Gross domestic product (*GDP*) in current U.S. dollars was obtained as the sum of gross value added by all resident producers in one economy plus any product taxes minus any subsidies not included in the value of the products. It has been calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources and since it is presented in PPP form, dollars for the GDP are converted from domestic currencies using single year official exchange rates. Gross national

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[3] Gans and Jöst (2005, p. 10) imply that that decomposition approach can be used either for the ex-post description or for an explanation and forecast purposes, as it presupposes that the independent development of the variables on the right hand side of the equation can be justified on the basis of theoretical or empirical investigations

[4] Interesting paper on Green GDP modelling is yhat of: Tomić, Stjepanović and Učkar (2020).

income (*GNI*), also in current U.S. dollars is presented as the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data for the environmentally corrected GDP (*Green GDP)* are obtained from Škare, Tomić and Stjepanović (2020) who used an alternative approach in measuring the green output (Stjepanović, Tomić and Škare, 2017). Consumption (*CONS*) as final consumption expenditure in current U.S. dollars depicts the sum of final private consumption and general government consumption. Total population variable (*POP*) is based on definition of population, which counts all residents regardless of legal status or citizenship. Technology, obtained from Federal Reserve Economic data (2020), is presented as total productivity factor (*TPF*) as an index to overcome the problem of its description in national prices.

Due to large differences in data values, all variables are transformed in their logarithmic form. Furthermore, to test the integration properties we analyzed graphical displays (*Figure 1*) of the variables and applied three unit root tests Augmented Dickey Fuller test - ADF, Phillips-Perron test - PP and Kwiatkowski-Phillips-Schmidt-Shin test - KPSS (see *Appendix*). Generally, figures and tests confirmed that all the variables are integrated I(1), i.e. they are stationary in their first differences, which is an important property for our following model.

Figure 1: Variables in levels
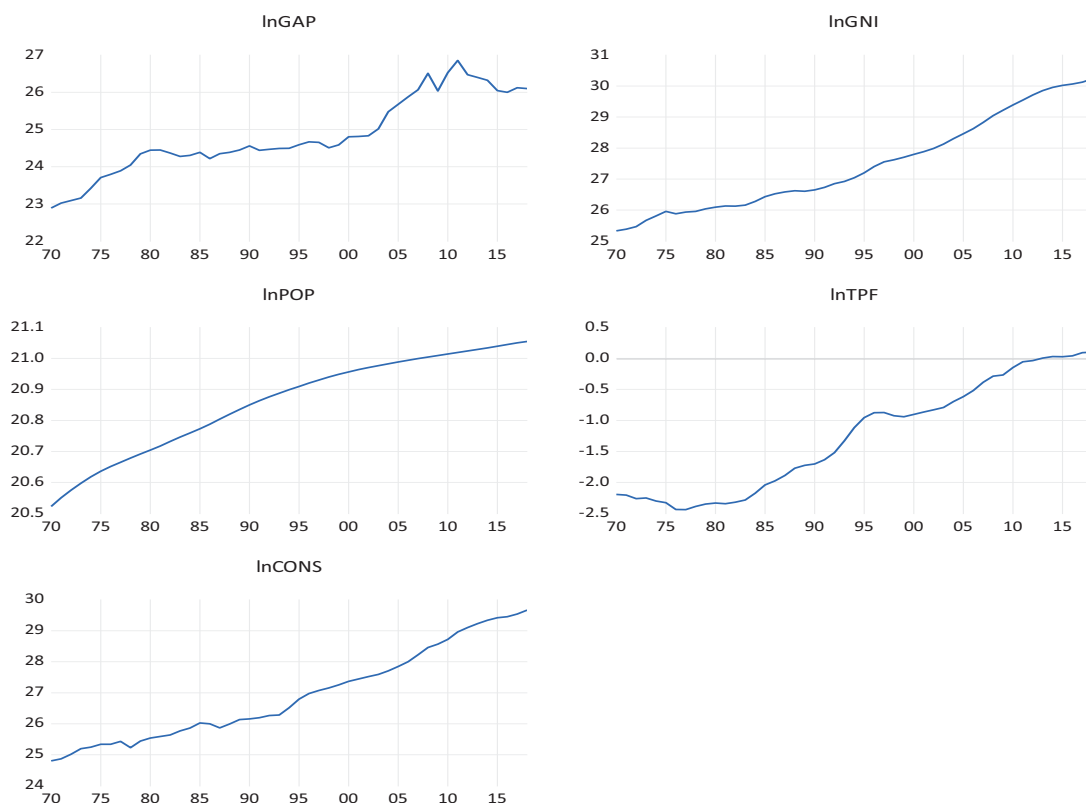
Source: Authors' calculations

3.3. Modelling

Based on the conceptual framework of the equation (*1*) and the characteristic of the data, we can formulate our augmented model as:

$$lnGAP_t = \beta_0 + \beta_1 \, lnPOP_t + \beta_2 \, lnCONS_t + \beta_3 \, lnGNI_t + \beta_4 \, lnTPF_t + \varepsilon_t$$
(2)

which can, consequently, be considered for cointegration method and vector-error correction term modelling. Vector autoregression or so-called VAR analysis is a widely adopted method for it is easily applied and requires no a priori assumptions regarding the exogeneity of variables. So, when the variables are integrated I(1), VAR is usually estimated in differences. However, if the variables are cointegrated, we must include error-correction terms to allow these series to catch up with one another. Engle and Granger (1987) indicated that a linear combination of two or more non-stationary series may be stationary. If so, for these series are said to be cointegrated. This linear stationary combination shows the long-run relationship among the variables and is called cointegrated equation. In order to test for cointegration, the methodology proposed by Johansen in 1995 (2000) is used. Following the unrestricted VAR model is then defined:

$$y_t = A_1 y_{t-1} + \cdots + A_p y_{t-p} + Bx_t + \varepsilon_t, \quad \varepsilon_t \approx IN(0, \Sigma),$$
(3)

where y_t is a k-vector of non-stationary I(1) variables, x_t is a d-vector of deterministic variables, ε_t is a vector of independently normally distributed errors with mean zero and covariance matrix Σ, while A and B are matrices of parameters. Model (1) can be reformulated into a vector error correction model (VECM):

$$\Delta y_t = \Pi y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta y_{t-i} + Bx_t + \varepsilon_t,$$
(4)

where

$$\Pi = \sum_{i=1}^{p} A_i - I, \quad \Gamma_i = -\sum_{j=i+1}^{p} A_j.$$
(5)

Number of lags in the VAR model has been determined using standard information criteria (AIC, HQ, SC, FPE, LogL and LR tests). Although the criteria indicated roughly similar number of lags, the final model was estimated using two lags[5] as suggested by SC and HQ test being the most restrictive ones. For determining the number of cointegrating vectors the Johansen's reduced rank procedure was introduced. Instead of the Engle-Granger test, we applied Johansen test that allows for more than one cointegrating relationship. However, it is subject to asymptotic properties (large sample size) since a small sample size would produce unreliable results. Using the test to find cointegration of several time series avoids the issues created when errors are carried forward to the next step. Johansen's test comes in two main forms, trace tests and maximum eigenvalue test. Estimations were made on linear data trend by including both constant and constant and trend in the cointegration space following the results of LR test and trend component that we perceivable in the graphical displays of the variables. Information criteria of both, trace tests and maximum eigenvalue test, by rank and model, indicated one cointegrating vector, whereas the linear model with intercept and no trend is the most suitable[6].

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[5] VAR(2) estimations, as well as information about the quality of the model are available upon request.
[6] All estimations regarding the Johansen cointegration procedure are available upon request.

4. Results and discussion

Long-run dynamics from Johansen's cointegration method, supports expected mutual relations. All explanatory variables displayed statistically significant expected signs, except the consumption (*Table 1*). A positive sign for population and gross national income suggested that with an increase in those variables the gap between GDP and Green GDP is also increasing. Namely, rapid population growth and a strong surge in national income inhibited China's so-called green growth by increasing the gap between the standard GDP measure and environmentally corrected Green GDP, hence more sustainable measure. Interestingly, an increase in consumption is decreasing that gap, annulling in that way the negative impact of gross national income. Short-term dynamics would explain that later. On the other side, as expected, an improvement in technology, i.e. technological productivity decreased the gap between the GDP and Green GDP, suggesting that technological advancement was not an essential reason for environmental degradation in China, rather it was the positive role that technology has played in environmentally more sustainable growth. In that way technological improvement in productivity delay certain negative trends of rising population and affluence.

Table 1: Cointegration relationship

Cointegration equation	**lnGAP**	**constant**	**lnPOP**	**lnCONS**	**lnGNI**	**lnTPF**
coefficient	1.00	209.79	9.85	-5.55	6.39	-2.31
standard dev.	/	/	1.32	0.62	0.58	0.29
t-ratio	/	/	-7.48	8.97	-11.08	7.86
Portmanteau test (4): Q-Stat (71.93) – Prob (0.41); Adjust Q-Stat (76.63) – Prob (0.27) LM test (4): LRE-Stat (17.34) – Prob (0.87); Rao F-Stat (0.67) – Prob (0.87) Normality test (5): Skew Chi-sq (0.02) – Prob (0.89); Kurt Chi-sq (0.30) – Prob (0.58); Jarque-Bera; Chi-sq (0.32) – Prob (0.85)						
Determinant resid covariance (dof adj.) – 5.59E-17 Determinant resid covariance – 1.23E-17 Log likelihood – 569.14 Akaike information criterion – -21.92 Schwarz criterion – -19.34						
VEC Granger Causality/Block Exogeneity Wald test Dependent variable d(*lnGAP*) – excluded all variables – Chi-sq (9.93) – Prob (0.27)						

Source: Authors' calculations

Estimations show no problem of serial correlation (Portmanteau and LM tests) despite a high correlation between the variables (see *Appendix*), normality of residuals and of stability (Normality tests), as well of weak exogeneity (Wald test), which in fact enables stable conclusions.

Short-run dynamics is presented through the results of a VECM (*Table 2*) and related impulse response function and variance decomposition (see *Appendix*). The error correction coefficient is negative, suggesting that after initial change the mutual relation between the variables is restoring to its long-run behaviour. However, after initial impulses, explanatory variables need considerable time to adjust until the equilibrium is restored again. Impulse response function confirmed such conclusion. Variance decomposition suggested that gap variable is mostly self explanatory, with a highest explanation of 10% of the variance for the gross national income variable after 3 periods (years), 6% of the variance for the population variable after 5 periods and 6% of the variance for the technology variable after 8 periods. Consumption variable does not participate in variance explanation of the gap variable. It's insignificance in the short-run can be explained by a significant short-run influence of a related gross national income variable which abrupt seemingly positive effect of the consumption.

Table 2: Adjustment coefficient from VECM

Error correction	d(lnGAP)	d(lnPOP)	d(lnCONS)	d(lnGNI)	d(lnTPF)
coefficient	-0.30	-0.00	0.09	0.09	-0.01
standard dev.	0.12	0.00	0.05	0.03	0.03
t-ratio	-2.41	-0.22	1.71	2.89	-0.46

Source: Authors' calculations

Our empirical analysis suggested that the key determinants in amplifying of the gap between the GDP and Green GDP, therefore in environmental set-back for China, are population and gross national income. This is in line with Lin et al. (2017, p. 952) who claim that the main drivers of CO_2 emissions remain population, affluence, energy intensity and CO_2 emission intensity. The population does have a stronger environmental impact in increasing the gap variable than the gross domestic product. In that manner, specific population policies and the slowdown of population growth could enhance more sustainable economic development by reducing the number of people living in poverty and increasing the consumption. However, population policies measures will likely be slowest to have an effect. Population variable is an important factor only in the long-run, but its' explanatory and statistical insignificance in the short-run indicates that any population policy measures will manifest itself over a very long period of time. The problem with possible population measures is that China has already applied drastic population policy since the 1970 and now faces the 'modern' problem of ageing people.

Affluence in our model is presented by two measures in which gross national income showed stronger environmental impact, both in the short- and long-run. Though the consumption seems to decrease the green gap variable, stronger influence of gross domestic income cancels that effect in the long-term. The negative impact of affluence can be yet seen as an opportunity because as income rises, investments could be pointed towards more environmentally friendly technologies, so that as Dinda (2004, p. 434) explains: the transformation towards an information and knowledge based economy together with technological progress, increasing environmental awareness, and environmental regulations becoming more efficient eventually reduces the environmental impact of economic growth - thus, it is possible to grow out of environmental problems. There is a general stance that the environmental quality tends to improve as the economy grows towards higher income levels, as we could find the existence of the inverted U-curve, i.e. environmental Kuznets curve on high income levels (Stjepanović, Tomić and Škare, 2017, p. 586). Of course, the issue whether the population of affluence is more significant could be the subject of politicized debates, blaming rich countries for being rich by emphasizing affluence and poor countries for being poor by not caring for population trend. This is not the right way for China, as its economic prosperity in fact lies on population growth, income boost and consumption acceleration, but also on technological improvement, therefore there are no straightforward policies that could be pointed out for achieving environmentally sustainable growth.

On the other side, technological improvement observed through productivity improvement showed to have positive effect on green gap. Technological advancement for China could be therefore seen as a mechanism to counter the burden of growing population and its consumption requirements, hence to make an environmental update by decreasing the difference between the GDP and Green GDP. Industrialization, modernization and technological development are considered as important drives for environmental reform. It is important to note, that modernization does not automatically lead to sustainability (Sorge and Neumann, 2019, p. 3).

Possible policy solutions should take into account also the fact that China has already made an enormous progress (and could even more) on real environmental and ecological grounds (national policies towards sustainability, creating own environmental accounting, controlling the population growth and etc.; especially after the Global crisis with its 'green programmes' that took 1/3 of total stimulus package and its twelfth Five year plan: 2011-2015) that lead to a continuing and persistent decrease in the deviation between the GDP and Green GDP from 2008 (12.56%) to 2016 (2.16%), transforming China from an under-performer by sustainability criterion to a good example (Stjepanović, Tomić and Škare, 2019, p. 11). In addition, even though China will consume about 23% of global energy consumption by 2035, has overtook the USA as the world's larger emitter of the CO_2 in 2008 (but produces less CO_2 per average person compared to the USA), lacks general government stance towards environmental issues and it could be argued that China's rapid economic growth was accompanied by energy overconsumption and heavy carbonization of the economy, Škare, Tomić and Stjepanović (2020) found that by observing the degree of similarity between the cycles, from 1970's Green GDP cycle has fluctuated highly similar to GDP movements. Namely, they concluded that the relative magnitude of business cycles between the variables of GDP and Green GDP for China, tended to decrease over time, with two additional analyses that suggested an increase in the correlation coefficients, an increase in similarity and hence a decrease in fluctuations of business cycles, meaning that some developing (China) and high-income (France) countries appear to support a more sustainable growth, development and lifestyle, even though in practice they consume more resource per capita than the other countries. *Ditto*, to answer the question from the title: Yes, China's growth is becoming more greener. Considering all the facts, we can conclude that the final environmental impact, regardless negative or positive, impacted by the observed variables (population, gross national income, consumption and technological productivity) would require that these levers are adequately analyzed and confronted, as well as seriously moderated for the sake of best environmental – sustainable – green outcome.

5. Conclusion

The relationship between economic growth, population trends and environmental impact is rather complex. Population growth results in higher environmental impact, but can also lead to a reduction in average per capita consumption. Improvement in technological efficiency can reduce specific environmental impacts, but can also end up generating greater growth in income and consumption per capita. Economic growth can lead to a stabilization of population growth in the long-run. Some authors claim that economic growth is a major reason for the environmental crisis, other put the blame on excessive population growth. By observing China, it is difficult to depict which factor was the source of the environmental issue, population or economic development, or even some other factor. The goal of this paper was to evaluate I = PAT equation by observing a country that experienced strong population surge and incredible economic growth with inconsistent green policy endeavours. Our broaden formulation of that equation was pointed more towards economic implications, hence all variables (except the population variable) included in the analysis (namely gross national income, consumption and technological productivity) are *de facto* economic approximations of the initial variables).

Empirical evaluation was based on cointegration approach and vector-error correction term modelling for the period 1970-2018. The analysis indicated that the key determinants in amplifying of the so called green gap, therefore in environmental set-back for China, are population and gross national income, whereas technological improvement with a positive effect in curtailing that green gap can be seen as a mechanism that counters the burden of growing population and its consumption requirements. Strangle, consumption showed also a

positive effect in the long-run, manifesting itself probably in (recent) more environmentally aware consumption habits. Final environmental impact, regardless negative or positive, impacted by the observed variables would require that these levers are adequately analyzed and confronted, as well as seriously moderated in achieving more greener output. Positive trends in Green GDP dynamics, convergence between GDP and Green GDP trends, improvement in the state attitude towards green topics and the results of our analysis lead us to the conclusion that China appears to support a more sustainable growth and development, hence her growth is getting greener over time.

Though an unpretentious reader could find some drawbacks of the research such as an approximations of few variables (green gap, technological productivity) or theoretical incoherence that stands behind I = PAT formulation, we are of thought that the greatest imperfection of this relation is that it measure impact within a closed system on averages of variables and mitigates the problem the environmental impact has on the global scene. This is especially true if we consider China's environmental impact on the world's economy. Non-the-less, our analysis revealed some positive environmental aspects of China's economic growth. Finally, we humbly accentuate that the conclusions made above are just mere observations and should be subject to revision in the future.

ACKNOWLEDGMENTS

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Appendix 1: Unit root tests

Variable and test	Level		First difference	
	Intercept	*Intercept and trend*	*Intercept*	*Intercept and trend*
ADF test	*Prob.*			
lnGAP	0.54	0.70	0.00	0.00
lnCONS	0.99	0.91	0.00	0.00
lnPOP	0.38	0.99	0.00	0.02
lnGNI	1.00	0.94	0.01	0.04
lnTPF	0.99	0.12	0.05	0.19
PP test	*Prob.*			
lnGAP	0.55	0.54	0.00	0.00
lnCONS	0.99	0.90	0.00	0.00
lnPOP	0.00	0.60	0.02	0.04
lnGNI	0.99	0.91	0.02	0.06
lnTPF	0.98	0.17	0.05	0.16
KPSS test	*LM Stat.*			
lnGAP	0.83	0.09	0.11	0.09
lnCONS	0.90	0.22	0.38	0.06
lnPOP	0.90	0.24	0.85	0.08
lnGNI	0.90	0.22	0.39	0.09
lnTPF	0.89	0.12	0.24	0.15

Source: Authors

Appendix 2: Correlation matrix

| *Corr.*	**lnGAP**	**lnCONS**	**lnPOP**	**lnGNI**	**lnTPF**
lnGAP	**1.00**	0.93	0.89	0.94	0.89
lnCONS	0.93	**1.00**	0.92	0.99	0.97
lnPOP	0.89	0.92	**1.00**	0.92	0.93
lnGNI	0.94	0.99	0.92	**1.00**	0.97
lnTPF	0.89	0.97	0.93	0.97	**1.00**

Source: Authors

Appendix 3: Variance decomposition

Period	**S.E.**	**lnGAP**	**lnCONS**	**lnGNI**	**lnPOP**	**lnTPF**
1	0.18	100.00	0.00	0.00	0.00	0.00
2	0.26	89.64	0.02	8.01	1.70	0.60
3	0.33	81.78	0.59	9.96	4.72	2.94
4	0.40	80.13	1.12	9.06	5.63	4.05
5	0.46	79.66	0.98	8.62	5.95	4.76
6	0.52	79.60	0.85	8.15	6.13	5.25
7	0.57	79.80	0.78	7.86	6.06	5.47
8	0.61	79.94	0.74	7.76	5.91	5.63

Source: Authors

Appendix 4: Impulse response functions

Response to Cholesky One S.D. (d.f. adjusted) Innovations
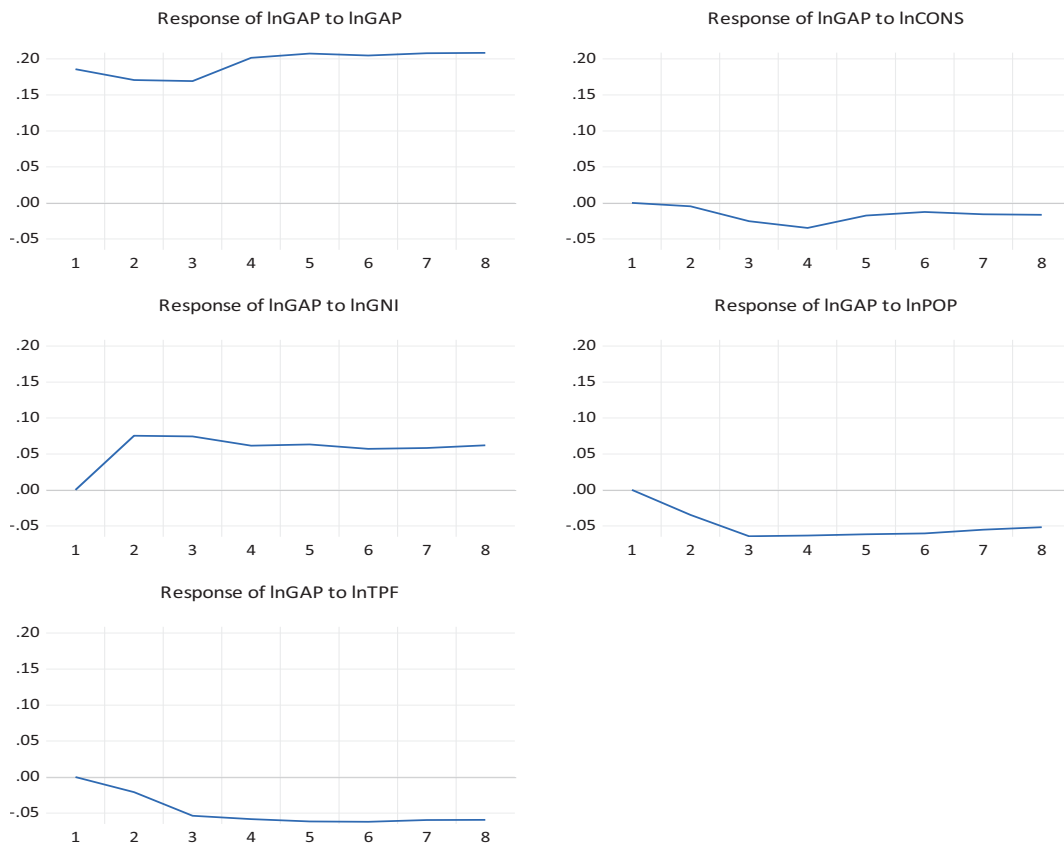
Source: Authors

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A NEED FOR SYSTEM DYNAMIC APPROACH FOR HUMAN RESOURCES PLANNING IN EDUCATION

ABSTRACT

The paper investigates the possibility of modeling human resources in order to support decision-making in the education system in the Republic of Croatia. Prospective labor market research is conducted in most European countries. Based on a decree of the Government of the Republic of Croatia from 2010 with the aim to reform the education system, the Croatian Employment Service provides recommendations for enrollment policy based on labor market analysis. These analyses are not based on mathematical modelling tools. System dynamics, as one of the mathematical methods for modeling nonlinear dynamical systems, is used in many areas and activities, including the education system. The emphasis of most applied research is on the quality of the educational process, and less on human resource planning. The main characteristics of system dynamic modeling are nonlinearity, feedback loops and time delays, which are all characteristics of the educational system. With the application of contemporary information and communication technology, abovementioned gives applicability to system dynamic modeling for the presented problem. The advantage of complex systems modeling in a digital environment is that simulation experiments can exploit different scenarios, in order to reduce future human resource planning uncertainty and can be more sensitive to differences between regional labor markets. This review analyzes the factors influencing the problem of human resources planning in the education system in the Republic of Croatia, provides an overview of research and possibilities of system dynamics and proposes a framework for better planning based on utilization of system dynamics models and building tools.

Keywords: *human resources planning, system dynamics, education system.*

1. Introduction

Ensuring an adequate and sustainable human resources is a prerequisite for any intervention or reform in educational system. The focus of this paper is a dynamic model for better personnel planning for the education system.

In contrast to the education system, in other areas of public services there are examples of human resource modelling on which enrolment policy recommendations are based. For example, the medical population undergoes more serious analyses and projections (Stobrawa and Bistrup, 1995). In the education system, there is a need for more complex analyses that would provide projections for educational staff needs in the future, which would take into account the interaction of various factors, and reflect on employment policy, management of the educational institutions network and enrolment quotas.

This paper proposes mathematical modelling based on the principles of system dynamics that would support management in the education system. A research framework is presented, that represents a foundation for the development of human resources model in the education system based on the principles of system dynamics. Procedure of model development is based on Croatian educational system.

2. Education system in Croatia

There are frequent discussions in the public and media in Croatia about the required number of educators, teachers or professors. Most often, such discussions are not based on any scientific research, or in a better case refer to some statistical data (Bakić, 2015). More serious analyses seek to comprehensively look at multi-year statistical trends and make recommendations for enrolment policies based on statistics. A study from the United States (Ingersoll and Merrill, 2012) analyse seven changes in the teacher population from 1988 to 2012, provides extensive statistics, and analyse the reasons for trends based on these data. Publications based on Eurydice data from the European Union show detailed statistics and results of numerous surveys for 35 EU and non-EU countries on lower secondary education teachers in 2013 (Education, Audiovisual and Culture Executive Agency. Eurydice, 2015). In the part of the study that looks at measures to monitor teacher supply and demand (Chapter 5.1, p. 102) can be found that almost all countries implement long-term planning or labour market monitoring, while only Croatia, Cyprus and Serbia do not have any measures. On the other hand, there are more complex analyses of the human resources in medical system in Croatia, based on system dynamics modelling (Relić and Božikov, 2020).

In the Republic of Croatia, the Central Bureau of Statistics keeps precise data on staff employed in the education system, which are then transferred and analysed to some extent in various studies (Croatian Employment Service, 2020). The assessments for human resources needs, regarding good planning and optimization of the education system, start from data on the actual situation and awareness that such a system is dynamic and requires prudent management.

The education system in the Republic of Croatia includes pre-school education, eight-year elementary education (four years of primary education and four years of lower secondary education - subjects teaching), then three-year or four-year secondary education (continuation of secondary education), higher education (tertiary education) and adult education (Ministry of Science and Education, 2020b). Following the Decree of the Government of the Republic of Croatia from 2010 on the *obligation to monitor, analyse and anticipate labour market needs for certain professions, making and taking into account recommendations for educational enrolment policy*, in order to implement education system reform (NN 93/2010, 2010), The Croatian Employment Service conducted an analysis and forecast of labour market needs for individual professions and made recommendations for educational enrolment policy (Croatian Employment Service, 2020). These recommendations are usually not applied

because they elaborate labour market demand with education statistical data. This requires a broader research, including entire social and economic system.

There is a need for human resources modelling that can support education system strategic planning, a tool that can reduce the future planning uncertainty with simulation experiments. A positive example of a change in the human resources planning approach is presented in the paper Mendes and Aleluia (2019). This paper compares poor planning of required number of secondary school teachers based on the student-teacher ratio and planning based on a systems dynamic model which resulted with precisely predicted teaching staff needed in Portugal since 2015.

Factors that affect human resource needs can be broken down into positive factors- which affect increased demand and negative factors - which reduce demand. Examples of positive factors are as follows: Croatian education system is currently implementing phases of comprehensive curricular reform (Ministry of Science and Education, 2019) which, among other things, emphasizes the *acquisition of knowledge, development of students' ability and readiness to solve problems, decision making, metacognition, critical thinking, creativity and innovation*. Students should also be trained in communication, collaboration, information and digital literacy, and the use of technology. The changes that seek to modernize teaching focus on the content of teaching itself and not on the structure of the education system, which should somewhat increase the demand for teaching staff but not significantly. The second example for positive factor is form year 2014, when Croatian Parliament adopts the *Strategy for Education, Science and Technology* and proposes measures that are in line with the strategies of the European Union, and the goals that are expected to be achieved by 2025 (NN 124/2014, 2014). One of the goals of this strategy is the introduction of all-day teaching, which is emphasized as a continuation of the comprehensive curricular reform (Ministry of Science and Education, 2020a). All-day teaching would significantly increase the number of teaching hours and thus increase the demand for teaching staff.

On the contrary, negative factors can be identified as follows: an increase of depopulation in the Republic of Croatia in the period 2010-2019: in year 2010. 43,361 children were born, with a natural increase of -8735, while in year 2019, 36,135 children were born with a natural increase of -15,659 (Croatian Bureau of Statistics, 2020). Second relevant factor is negative balance of migration: in 2010 there was -4,875 (more emigrants than immigrants), while the balance in 2019 was -2,422 (Croatian Bureau of Statistics, 2020).

For some factors, additional research should examine whether they belong to the positive or negative. For example, the perception of a particular faculty among potential students based on word of mouth (Zovko, Abdulmar and Tomljenović, 2021).

This paper proposes to model the behaviour of a complex education system with systems dynamics (SD) and some parts of the system by agent-based modelling (ABM). This would give a hybrid model, but they are basically the principles of systems dynamics

3. System dynamics modelling

Depending on the degree of abstraction, modelling of complex systems can be approached through discrete event modelling as the least abstract, systems dynamic modelling as the most abstract (Borshchev, 2013) and an agent-based modelling (Macal and North, 2010) as a trade-off between these two approaches.

Systems dynamics is basically a numerical mathematical method for computer modelling of nonlinear problems in time, the foundations of which were laid by Jay Forrester based in systems theory (Forrester, 1961). It achieves its full application with the development of informatics, due to the automation of numerical techniques and an exponential increase of processors power.

Unlike analytical methods in which the system is decomposed into parts and where the properties of individual parts are observed, SD models the system as a whole with time dynamics, interaction of individual parts of the system, feedbacks and time delays (Arnold and Wade, 2015). The first step in building a model is to identify the parameters - variables and constants, important for the system. The connections between them are then identified in such manner to determine how the change of the value of one parameter affects the others, whether there is feedback, possible delay in the change, and so on. The established connections are visualised by a causal loop diagram. Connections are quantified and relationships represented by equations (Zovko, Šimović and Ančić, 2006). Such system of equations is solved by numerical methods using a computer (Bala, Arshad and Noh, 2017). For illustration, figure 1. shows a causal loop diagram for one hypothetical problem of the student population at the faculty, taken from Hallak *et al.* (2019).

Figure 1: A causal loop diagram for one hypothetical problem of the student population at the faculty
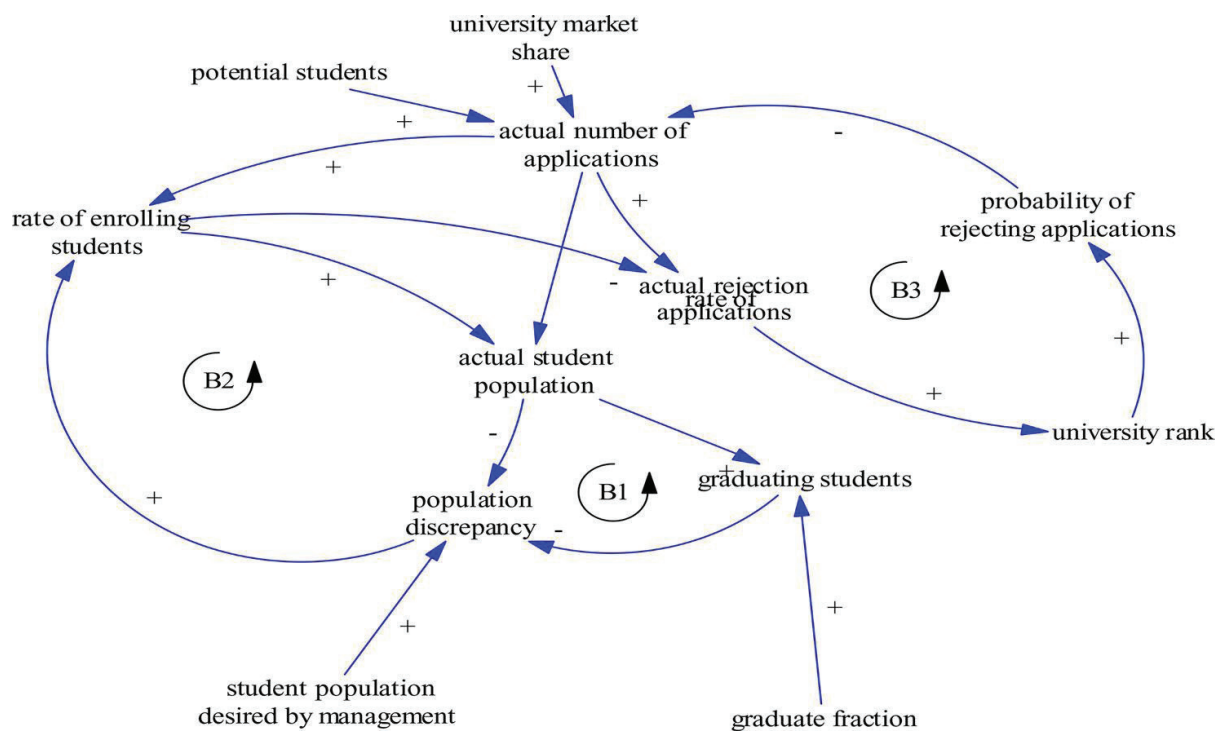
Source: Hallak et al. (2019)

SD simulation modelling is one of the most appropriate and successful scientific approaches to development of complex, nonlinear, natural, technical and organizational systems (Sterman, 2000).

ABM modelling evolved with the rise of processing power and other computer performance in the late twentieth century. In comparison to SD models, in ABM we do not need to know the structure and dynamics of the system as a whole, but the focus is on the properties and dynamics of individual active objects (agents) within the system. Agents are identified and parameters and dynamics are defined in relation to other agents and the environment. These can be people, vehicles, equipment, products or companies, whatever is important to the system. Connections are established between them, environmental variables are set and simulations are run. The global dynamics of the system then arise from the interactions of many individual behaviours. To this point technology limits are crucial and its possibilities of simultaneous modelling of multiple agents. Increase of number of agents in model substantially increases computer's processing power demands. Part of the system can be modelled in another way, for example the environment in which agents exist can have its own dynamics, modelled by systems dynamics and such a system is a hybrid of SD and ABM modelling. For example, educational system staff (educators, primary school teachers, computer science teachers, etc.) can be modelled as agents in the SD environment. Another example is to model institutions (schools, kindergartens, teacher training colleges, etc.) as agents in the SD environment.

The education system has a pronounced delay effect in the sense that the changes we implement do not have to immediately positive or negative consequences. Some changes implemented this year may prove to be good or bad in a few years, and often whole generations of students are affected by such an educational intervention. Due to the nonlinearity and feedbacks in the system, SD is an appropriate ICT-oriented method for analysis of human resources in the education system.

The education system model based on SD and ABM can be used to perform simulation experiments where by changing individual system parameters we observe the behaviour of the system as a whole or behaviour of some variables of interest. In the digital environment of the computer model, there is no risk of downgrading the education system with wrong decisions, as in reality a decision can have a negative effect on entire generations of participants in the education system. The development of tools based on systems dynamics and agent-based modelling is expected to reduce uncertainty in human resource planning in the education system.

3.1. Examples of SD and AB modelling

SD and ABM are broadly used in different areas, for scientific research as well in industry, urban planning, public services, modelling of social phenomena, the behaviour of biological systems etc. For illustration, in this chapter are given several examples of use SD or ABM. In next chapter a hybrid approach is proposed. The approach is based on advantages of both SD and ABM modelling for managing presented problem of human resources planning in educational system. In the work of N. O. Ogano, the problem of power industry management in sub-Saharan Africa is modelled using SD (Ogano, 2017). Research include various policy scenarios explored and analysed based on simulating with the model. Social system modelling is presented in work of E. Bonabeau. It is an example of ABM applied in research in four areas of social activities: flow simulation, organizational simulation, market simulation, and diffusion simulation (Bonabeau, 2002).An example of modelling public services in the Republic of Croatia is the SD model of the population of physicians in the Republic of Croatia in order to predict the possible shortage of physicians in the future (Relić and Božikov, 2020). Main result of the research is there are no expected shortages of physicians in

future period. Another different example of human activity area is SD modelling of criminal behaviour and gang strengthening as an example of modelling social phenomena (Skarin, 2009). The result of the study is implying that any approach to dealing with gangs will need to address both the social and economic aspects of the problem. Another conclusion that can be drawn for the model output is that policies that act to increase the productivity of civilian activities may have the most positive impacts on total social well-being, while the police forces increase shows effects only in short term. A very current example of the biological systems behaviour is the application of ABM to simulate the Covid19 virus spread trends in three different scenarios (Bai *et al.*, 2020). In this simple model different scenarios by daily close contact with 5, 10 and 15 people, respectively, is examined to assess the impact on the 2019-nCoV epidemic.

As the focus of this paper is educational system research, some examples of SD and ABM in the education system in recent literature are presented. Good example of SD model for "education effectiveness evaluation" is model by Kulkarni (2018) which considers the impact of teaching methods of teachers, home environment, study habits and performing scientific activities on the effectiveness of student education. The study confirmed a positive correlation between the home environment, teaching methods and study habits on the effectiveness of student education. Another example is SD model that considers how students' attitudes about the university, study funding, investment, and university staff affect the attraction of more students at a private university in Syria (Hallak *et al.*, 2019). The goal of the study is to achieve better enrolment on university, i.e. which factors are dominant in attracting more students.

Above mentioned example, the SD model of K-9 teachers in Portugal, which considered the possible redundancy due to depopulation and the crisis in the public schools financing removed a number of tensions in society in the form of a wave of strikes and great employment uncertainty (Mendes and Aleluia, 2019). Authors came to a conclusion that there will not be surplus of teachers in future period which consequently resulted to permanent employment of majority of teachers.

For ABM illustration in educational system is work of P. Mital (2015). This is an example of the model for "Education System Intervention Modelling Framework" for managing various curricular (*Science Learning: Integrating Design, Engineering and Robotics*) and extracurricular (*Engineers Without Borders*) school interventions.

4. System dynamics methodological framework

Generic plan of SD model development is comprised out of four phases: definition phase, design phase, analysis and verification phase and validation phase, as shown in Figure 1.

Figure 2: Generic plan of SD model development
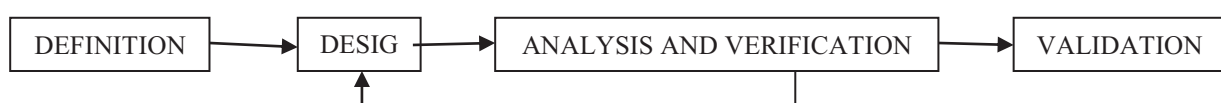
Source: Authors

Definition phase is based on contemporary literature research. In case of Republic of Croatia that would be relevant legal framework and education policies together with the relevant

statistical data. As Croatia is one of the EU states, legal framework together with policies should be also considered in the context of EU directives. Regarding data sources there are two available options. One is to perform target research with the aim to collect relevant data for the model. This method is not usually used as it is time consuming and expensive. The other approach, that is predominant approach in all models is usage of publicly available data by relevant public institutions which in case of Croatia are:

- Central Bureau of Statistics - demographic data and projections
- Croatian Employment Service - data on employed / unemployed teachers by counties, structure of teachers by years of service,
- Ministry of Science and Education - plans and changes in the primary education system
- Teachers' faculties in the Republic of Croatia - number of enrolled / graduates; enrolment policy
- Professional associations and unions of primary school teachers - collective agreements, labour legislation
- Eurostat data and publications
- TALIS - International Research on Learning and Teaching
- Eurydice Network (European Commission) - education systems of European countries

Design phase is focused on definition of model domain. These specially refers to definition of relationships between system parameters, causal loop diagrams, feedback loops and agents. In parallel in design phase it is necessary to define properties of each model entity.

Following phase is analysis and verification of the model. These activities are performed with real data form abovementioned resources. In example, if we want to validate SD model of primary education then we need to collect all relevant data about teachers as holders of primary education and faculties of teacher education. In validation phase control data is used with the aim to compare simulated results for individual years in past period with the real data for the same period. If simulation results do not deviate substantially from real data, then we can say that the model is robust and reliable.

The advantages of the SD model in a virtual environment are the ability to perform a series of simulation experiments to identify which parameters significantly affect the behaviour of the entire system, i.e. which parameter changes cause significant system deviations. In example of primary school teachers in the Republic of Croatia the goal of the model would be to estimate supply side of primary school teachers in relation to foreseen needs of Croatian education system.

Another advantage of the SD model can be used to develop different scenarios by changing initial values of parameters in the model. To have a user friendly model it is advisable to build an interface threw which novice users easily can change initial parameter settings. In that manner developed model becomes valuable tool for strategic planning efforts.

5. Conclusion

This paper highlights the need for a more complex analysis for systemic approach to human resources planning. Such analysis would be an upgrade of merely utilization of statistical data, which is the most common presently, and would be based on mathematical modelling tools. In exemplary case of Croatian education system this kind of modelling would enable decision support in the adoption of enrolment policies. The advantage of complex systems modeling in a digital environment is that simulation experiments can exploit different scenarios, in order

to reduce future human resource planning uncertainty and can be more sensitive to differences between regional labor markets.

SD and ABM modelling are most appropriate complex system modelling methods as they were proved to be valuable for decision support in many different areas. As such can be expected to contribute a lot to development of viable human resources policies in Croatian educational system.

For further research an operative model based on system dynamics is proposed. An exemplary model is following this review paper, implementing presented framework on primary education teachers and faculties, as subset of Croatian education system.

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THE ROLE OF MARKETING INNOVATIONS IN TOURIST DESTINATION RASTOKE

ABSTRACT

Tourist destinations are an integral part of the wider tourist system and should interact with all elements of the system. A tourist destination is observed as a cohesive network space that encourages and accepts innovation with different dynamics. Modern tourists create their identity through tourist consumption, thus gaining an unique experience and developing feelings that they can transfer to others. Therefore, nowadays tourist market requires specialized and adaptable experiences for which it is necessary to introduce different types of innovations that will contribute to sustainability and strengthen the competitiveness of the destination. The subject of this paper is the role of innovation in the management of tourist destinations with special emphasis on marketing innovations in the tourist destination Rastoke. The general objective of the paper is to present the importance of innovation in sustainable destination management, and specific objectives are: to analyze the role and importance of marketing innovation in visitors' decision to visit Rastoke and to analyze the role and importance of marketing innovation in Rastoke product development from the perspective of local stakeholders. For the purposes of the paper, a reconnaissance descriptive research was conducted using a deliberate sample (destination service providers as local stakeholders and visitors). Data were processed by descriptive statistics. The limitation of the research was in conducting research during the pandemic and the conditions of suspension of work for the employers in tourism and hospitality. For the future research it is necessary to increase the number of sample units.

Keywords: innovations, tourist system, tourist destination, tourist destination management, Rastoke.

1. Introduction

Development of tourism deeply depends on the characteristics of the specific territory. The supply of tourism products and services in a destination is determined by the existing resources, climate, natural landscape and cultural heritage. Moreover, specific characteristics of the tourism sector, like co-spatiality, co-temporality and co-terminality and the related localized

interactions emerging from these aspects emphasize territorial embeddedness, while making the tourism destination a repository of information about behaviors, needs, preferencesand motivations of visitors (Romao, 2020). By good management of the destination network, destination learning organizations will be created, meaning that mature resorts are better placed to adapt and innovate and therefore gain competitive advantage for the future (Cooper, 2016). Innovations are crucial for developing specialized, comparative advantages of the specific destination. There are various types of innovations and for the purpose of this paper focus was on marketing innovations.

Marketing innovations seek to attract the attention of the target group of visitors for the most successful tourist valorization and better management of the destination. Destination marketing is a type of marketing that promotes a specific destination with the intention of increasing the number of visitors (Pike, 2010). Successful destination planning and marketing can generate revenue and create new support industries and jobs and increase living standards. This research was focused on a specific research problem related to the tourist destination of Rastoke in Karlovac County, Republic of Croatia. Rastoke are specific because of their ambient value and authentic architectural heritage and are becoming more and more interesting to visit. They testify to the impressive harmony of nature and human achievements, with the power of water being used as the main and only driver of the mills. Apart from grinding wheat, the power of the water was used to wash the laundry. The largest number of settlements was built at the end of the 19th and at the beginning of the 20th century and, due to the extraordinary natural beauties and history, in 1962 Rastoke were put on the State Administration List for the Protection of Cultural and Historic Heritage. In Rastoke at that point, there were 22 water mills, 4 fulling mills, 7 baskets for rinsing whites and coloured laundry and 28 houses with appertaining farm buildings. Nowadays, Rastoke is tourist destination that develops its tourist products and adapts it to the need of modern tourists. An innovative solution aimed at controlled and faster flow of visitors has been implemented, as well as themed virtual walks. Due to rapid market changes, Rastoke faces a number of challenges. In order to achieve economic, ecological and socio-cultural sustainability of the Rastoke tourist product, some innovation and creative solutions for the most successful achievement of common goals are implemented.

The general objective of the paper is to present the importance of innovation in sustainable destination management, and specific objectives are: to analyze the role and importance of marketing innovation in visitors' decision to visit Rastoke and to analyze the role and importance of marketing innovation in Rastoke product development from the perspective of local stakeholders.

In order to achieve the aim of the research, the research questions were formed as follows:
1. Do the marketing innovations play a significant role in the decision of visitors to visit the tourist destination Rastoke?
2. Do the marketing innovations play a significant role in the development of Rastoke tourist destination products from the perspective of local stakeholders?

A reconnaissance pilot survey was conducted by surveying the employees of hospitality management and tourism companies operating in the tourist destination of Rastoke in the period from 15 November 2020 to 30 November 2020. Also, visitors to Rastoke were interviewed using the survey method in the period from December 1, 2020 to December 3, 2020. Sample units were deliberately selected during the survey. Those respondents who provided tourism and hospitality services in the mentioned period were selected, as well as those visitors who visited the settlement of Rastoke at that time. On the Rastoke district there are 11

accommodation service providers (boarding houses, apartments), 2 restorans, 2 bars, 1 tourist information centre, 2 receptive tourist agencies according to the data of Slunj Tourist Board. The collected data are described by descriptive statistics.

2. Innovations as pillars of sustainable tourism development

Tourism is an important component of the world economy development. It has grown significantly over last decades. Over the past 20 years the tourism flows in the world have increased by more than 2.7 times from 436 million in 1990 to 1,186 billion people in 2015 (Sardak et al., 2016). Tourism development aims to govern resources and create value-added wisely, integrated, holistic, and systemic to increase experience, sustainable value, and benefit for society (Meylani et al., 2020).

Traditionally, stategies for developing tourism have relied on promoting the experiences currently available to new potential customers. Nowadays, in a new globalized world, destinations can no longer take their traditional visitors for granted and escape growing competitive pressures, because increasingly experienced, specialized and demanding travellers now have a vastly greater number of potential destinations to choose from (Weaver; Lawton, 2002; Hall, Page, 2006). Due to that, both well established and would be emerging tourist destinatons are under pressure to be innovative to increase their attractiveness in the globalizing visitor economy (Halkier, Kozak, Svensson, 2015). Innovation is essential for the sustainability and competitiveness of destinations (Cooper, 2016). Various aspects of innovative development of tourism were researched by scientists who comprehensively covered the global trends in innovative developments (Davydova, 2015; Sardak, 2013; Van Ark et al., 2003; Cooper, 2016; Baglieri and Consoli, 2009; Saxena, 2014).

Sardak, Dzhyndzhoian and Samoilenko (2013) indicated five key areas of deployment of global innovation trends inherent in the whole tourism sector: the growth of tourism; the application of qualitatively new solutions of scientific and methodological and applied nature; the growing influence of tourism in society; the existence of synergistic effect in the tourist industry as a result of the combination of subjects efforts at all management levels; the changing role of internal and external factors that encourage innovative tourism development (Sardak et al., 2013). According to Martinez-Perez et al. (2019) increasing globalization and great rivalry among national and international destinations imply that radical innovation has become a critical factor for the competitiveness of firms in the tourism industry. Radical innovation relies on knowledge shared through interorganizational relationships that connect firms within and between destinations. (Martinez-Perez at al., 2019).

Successful strategies for developing destination require innovation to deliver new products and seek out new markets. According to Saxena there is a shift in policy and governance style to a more local, or destination focus and away from grand regional strategies (Saxena, 2014). Saxena also states that is possible to distil a range of key indicators of success for resort revitalisation from international experience. These include finding a local political or business champion, the political will to drive through change, a holistic view of the destination that encompasses all economic, social and environmental factors, and the skills to secure investment and regional aid (Saxena, 2014). Literature review show that innovation became an important pillar for tourism development and for the recovery of tourism in the mature destinations.

3. Marketing innovations in tourism

The impact of innovations became important in various fields and in tourism as well. According to Carvalho and Costa reviewed literature they provided shows that innovations in tourism can be: product innovation (an incrementally changed or radically new good or service that can be commercialised); process innovation (the implementation of an incrementally changed or radically new production process or delivery method); organizational innovation (the implementation of a new or incrementally changed organizational method or managerial form) and marketing innovations (the implementation of a new or incrementally changed marketing strategy that develops the sales market) (Carvalho, Costa, 2011). Nowadays, marketing innovations are important for the competitiveness of firms, sectors, destinations, regions. When it comes to the new expanding field of tourism marketing, there is clearly a shift from the old and traditional to the novel and innovative way of experiencing available resources. Haddad and Algadeer (2004) are of the view that marketing innovation reflects the ability of the firm as to how the organisation continuously improves its products and services, which in turn are known to provide a pathway which will lead to huge benefits for the clients as these products and services will satisfy their needs in a unique way (Haddad & Algadeer. (2004). It also covers the latest innovation in marketing ranging from how people alter the ways of getting their messages out to the new tools they use with the aim of retaining old customers while attracting new ones. The main idea behind the concept of marketing innovation is to work on a new concept or a new strategy related to marketing. This needs to be different from the methods that already exercised by the company and are related to either alteration in the design or packaging or the product or related to pricing, promotion or distribution of the product (Nadda, Arnott, 2019).

Innovation combined together with marketing helps the company to
grow by providing products and services that are valuable to the consumers.
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grow by providing products and services that are valuable to the consumers.
According to Strielkowski the shift in tourism marketing is largely based on using a major fusion of information and communication technologies (ICT), as well as the new services (e-services) that bring into the picture various modern information technologies. Therefore, there exists a certain demand on the tourism market to assess the preferences of potential tourists for innovative and novel e-services that might enhance their experience before, during, and after a visit to the cultural destination of their choice (Strielkowski, 2016). Novel trends in tourism marketing that embeds the new informational technologies such as virtual reality (VR), augmented reality (AR), online Zoom tours, and other novelties that emerged after the lockdowns and social distancing imposed in the first half of 2020 in order to prevent the spread of the coronavirus infection. The results of research conducted by Streimikiene and Korneeva show that tourism marketing in the 21st century should be based on sustainable management and provide the right answers to questions about the impacts of tourism on the economy without sacrificing positive economic growth (Streimikiene, Korneeva, 2020).

4. The research of attitudes on marketing innovations on the example of the tourist destination Rastoke

4.1. Methodology

The research of attitudes on marketing innovations on the example of the tourist destination Rastoke was conducted on the employees of hospitality and tourist companies engaged in tourism in the area of Rastoke, as well as on visitors. The questions were taken from the survey "Unleashing the power of innovation" developed and conducted by Price Waterhouse and Coopers & Lybrand (PWC), a survey intended primarily for managers and employees of the company. Existing questions are supplemented by additional ones in order to adapt the research instrument to the subject and objectives of the specific research. Ten employees of hospitality and tourism companies operating in the Rastoke area participated in the survey of attitudes. Respondents are from the accommodation sector (8), tourism intermediation (1) and tourist boards (1), and the survey questionnaire consisted of eight questions related to innovative ideas for the Rastoke area, with a special focus on marketing innovations. Research population of the Rastoke district consists of 18 hospitality and tourism companies according to Slunj Tourist Board. The sample covers 55% of the research population. The survey was conducted in the period from 11/25/2020 to 11/30/2020. Also, the attitudes of visitors who visited Rastoke in the period from 12/01/2020 to 12/03/2020 were assessed. A questionnaire consisted of twelve questions on respondents' satisfaction with the marketing of the tourist destination of Rastoke and their satisfaction with the implementation and innovation of online tools and social networks. All collected responses were analyzed through the website www.surveymonkeys.com.

4.2. Research results

Rastoke is a tourist destination that recognizes the role and importance of developing marketing innovations. The research for this paper was conducted for the purpose of evaluating the tourist destination of Rastoke.

General data of the surveyed employees of hospitality and tourism companies in Rastoke follow below.

Table 1: General characteristics (gender structure of respondents employed in hospitality and tourism companies in Rastoke)

Number (% share) of surveyed employees of hospitality and tourism companies in Rastoke	Male (% share)	Female (% share)
10 (100%)	7 (70%)	3 (30%)

Source: Authors' based on research results, N=10

It can be seen that male respondents were predominate (70%).

Table 2: General characteristics (age structure of respondents employed in hospitality and tourism companies in Rastoke)

Age	Number (% share) of surveyed employees of hospitality and tourism companies in Rastoke
18-25	1 (10%)
26-35	2 (20%)
36-45	3 (30%)
46-55	3 (30%)
56-65	1 (10%)
Above 65	0

Source: Authors' based on research results, N=10

From the table above we can see that respondents (employees) are mostly aged 36 to 55 years (60%).

The surveyed employees of hospitality and tourism companies in Rastoke answered questions about the development of innovations in the Rastoke area, with special reference to marketing innovations. Out of a total, 20% of respondents answered that marketing innovations are not a priority of the company, 80% answered that the importance of marketing innovations is recognized in companies where they are employed and that they are one of the business priorities for overall development of tourist destination products.

Respondents see their primary role in driving innovations within organization mostly as follower (40%), visionary (30%), leader (20%), facilitator (10%). The most important ingredients for successful innovations at their companies are as follows: having a capacity and capability for creativity (40%), being able to locate and train the right people (20%), strong visionary business leadership (20%), the willingness to challenge organizational norms and take risks (10%), collaborating with customers (10%).

About 20% of respondents answered that innovations in a company where they work are hampered by the current culture of the company which is not sensitized to the development of innovation, while 30% of respondents answered that the limiting factors are insufficient financial resources for research and development, 10% of respondents answered political and regulatory factors, 20% inadequate technology and 20% think that nothing is stopping them from being innovative.

Around 30% of respondents consider adequate infrastructure and technology a priority precondition for the development of innovation in business entities, 40% of respondents point out an educated and skilled workforce, and 20% of respondents a high level of employment at the national economy level.

A total of 50 visitors to the tourist destination Rastoke in the period from 1 December 2020 to 3 December 2020 were also surveyed. The results of the conducted survey follow below.

Table 3: General characteristics (gender structure of visitors to Rastoke)

Number (% share) of surveyed visitors to Rastoke	Male (% share)	Female (% share)
50 (100%)	27 (54%)	23 (46%)

Source: Authors' based on research results, N=50

Most of the respondents were male visitors (54%).

Table 4: General characteristics (age structure of visitors to Rastoke)

Age	Number (% share) of visitors to Rastoke
18-25	25 (50%)
26-35	12 (24%)
36-45	8 (16%)
46-55	3 (6%)
56-65	1 (2%)
više od 65	1 (2%)

Source: Authors' based on research results, N=50

From the table above we can see that respondents (visitors) are mostly aged 18 to 35 years (74%).

Out of a total of 50 visitors, 39 (78%) answered that they often browse the online supply of tourist destinations in the Republic of Croatia on various tourist portals and social networks, 9 (18%) answered rarely, and 2 (4%) answered never. A significant 78% of visitors answered that they decided to visit the tourist destination Rastoke based on the online supply and presentation of the destination on social networks, 22% of visitors did not decide to visit the tourist destination Rastoke based on the online supply and destination presentations on social media.

Out of a total of 50 surveyed visitors, 32 (65%) answered that the supply of the tourist destination Rastoke was mostly informed via the social network Facebook, while 25% of visitors were mostly informed via the social network Instragram. A significant number of surveyed visitors 33 (66%) answered that they fully believe in the seen ads and tourist brochures of the tourist destination Rastoke. Also, a significant number of surveyed visitors 39 (78%) answered that marketing innovations are crucial for them when making a decision to visit a tourist destination. The majority of surveyed visitors 40 (80%) believe that the tourist destination Rastoke met the expectations gained by reviewing online ads and presenting the destination on social networks. Exactly 30 (61%) of the surveyed visitors answered that they read the visitors' reviews and that those reviews have influence on their decision to visit.

4.3. Research Discussion

Significant number of respondents are informed about tourist destinations on social networks, taking into account the reviews of previous visitors. Also, visitors consider marketing innovations a relevant factor when making a decision to visit a tourist destination.

Most respondents are aware of the importance of innovation in the context of a business perspective. The surveyed employees of hospitality and tourism companies in Rastoke are

mostly followers in case of implementing innovations. They consider capability for creativity the most significant one when it comes to innovations. The most limiting factors they face are insufficient financial resources for research with the purpose of developing innovations. An educated and skilled workforce make precondition for the development of innovation in their bussiness. Educated employees are more prone to market changes, more flexible to innovative solutions and can keep up with rapid market changes.

Due to the research only 20% of respondents employed in hospitality and tourism companies in destination Rastoke think that nothing is stopping them from being innovative. That suggests that organizations in tourism sector in destination Rastoke should do more to develop innovative culture and boost creativity of their employees. Comparing with the new global trends in this field destination Rastoke needs to continue and intensify the development of marketing innovations and all other types of innovations.

5. Conclusion

Tourists have become more experienced, specialized and demanding towards the supply of the destinaton they plan to visit. Due to that destinations are under pressure to be innovative to increase their attractiveness. So, successful strategies for developing destination require innovation to deliver new products and seek out new markets. With the development of a new technologies and innovations in marketing, tourist demand is becoming more informed and demanding in terms of expectations. Destinations carry out certain marketing activities for which it is necessary to identify the tourist potential of the destination, shape the supply, and determine the target group. Nowadays, for the survival, development, and competitiveness of a destination, marketing innovations, and all other types of innovations are becoming more and more important, which indicates the specificity of the supply of a certain destination and enables it to more successfully respond to all challenges imposed by the modern tourist environment and overcome strategic business challenges.

The reconnaissance survey has answer the research questions. Survey research, with the aim of determining the importance of marketing innovations in the sustainable management of the tourist destination Rastoke, gained insight into the situation and a better understanding of the situation was achieved. Local stakeholders from the group of hospitality and tourism companies recognize the importance of marketing innovations for the development of tourism and increase the competitiveness of this destination, which results in developmental changes in the tourist supply. Visitors to Rastoke believe that marketing innovations contribute to creating a better service and being relevant factor when making a decision to visit a destination. Recommendations for future research relate to the increased number of sample units, as the attitude survey was conducted in difficult conditions during the Corona virus pandemic and limited movements of visitors as well as the local population. Average perceptions point to the importance of the further investigation in the topic since the answers to the research questions only described the phenomenon that is being researched.

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HUMAN RESOURCES LAW – THE NEED FOR A NEW LEGAL BRANCH IN CROATIA

ABSTRACT

Human resources law is a branch of law immanent to the Anglo-Saxon legal circle, while in the European Union it is quite rarely taught in higher education institutions, lifelong learning programmes or professional development programmes. In contrast, although very practical and theoretically significant, this discipline is almost unknown in Croatia. Its content is mainly covered by the Labour and Social Law course, which is taught at the faculties of law at Croatian (public) universities and traditionally structured. In the last thirty years, the Labour and Social Law course has been insufficiently reformed in relation to its dual nature and connection with technological changes in the world of work. The purpose of the paper is to analyse the legal nature of human resources law and labour and social law, and moreover, to point to the need for a different approach to labour law institutes necessary for quality human resource management, and to teaching the labour and social law discipline outside faculties of law, to students of other related higher education institutions, professionals and entrepreneurs.
The methodology of the paper is focused on qualitative research, a comparative legal method, a multidisciplinary approach and methodological pluralism.
The aim of the paper is to stimulate a broader scientific (and professional) discussion on the need for new approaches to teaching the institutes of labour law (employment; prohibition of discrimination, mobbing and harassment; employment contracts; protection of privacy; prohibition of market competition between workers and employers, working hours, dismissals, etc.), necessary for successful human resource management and successful entrepreneurship. Furthermore, the main aim is to give a critical evaluation and a new overview of the dual nature of the Labour and Social Law course, which, in a technologically changing world, seeks to abandon traditional, archaic approaches.

Keywords: *Human Resources Law, Labour and Social Law, legal branch, new teaching approach.*

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1. Introduction

The philosophical foundations of labour law have captured the attention of the world's scientific labour law elite in recent years, pointing to the need to rethink the institutes, concepts and the very meaning of this branch of law (Collins, Leseter and Mantouvalou, 2018, 1). This is a consequence of not only the transition that labour law has experienced since its inception in the 19th century, in which its evolutionary path began as a new branch of law, which has been predominantly taught independently in modern universities since the end of World War II, but also a long struggle for the equality of the contracting parties to the employment relationship, and the polarisation of labour law starting in that period and ending with the fall of the Berlin Wall, when it was divided into a development path in democratic societies of Europe and the world, on the one hand, and societies of the dictated market and political development, socialist and communist provenance, on the other. In democracies, this period brought a number of benefits in the protection of workers' rights, but since the 1980s there has been a significant weakening of the role of unions, as well as a decline in the number of their members (Hepple and Veneziani, 2009, 2, 4). Debates on labour rights as human rights were initiated in the first years of the 21st century (Sychenko, 2017) as well as on the significant role of the International Labour Organisation, the European Union and the Council of Europe in the transformation and harmonisation of national labour laws, strengthening the "social rationale", and finally the affirmation of equal treatment of employees in the practice of national and international (European) courts (Hepple and Veneziani, 2009, 3). In many European countries, primarily on the basis of harmonisation with the *acquis communautaire*, national anti-discrimination law has developed precisely from labour law (Fredman, 2015, 260). However, it should be borne in mind that the development of EU labour law is largely conditioned by the fact that the Union is a political, economic and only then a social creation, and in that sense, the transformation of labour relations took a specific and sometimes somewhat hypocritical way whose primary concern was not always focused on the protection of workers' rights, but rather on economic interests and the fight against social dumping. At the very beginning, that was the case with the current Article 157 of the Treaty on the Functioning of the European Union (TFEU) with regard to equal pay for equal work and work of equal value for women and men, and somewhat later, less protection for posted workers who perform their duties within the framework of freedom to provide services rather than freedom of movement of workers within the EU (Vinković, 2018, 10-16; Sypris and Novitz, 2015, 301). However, this process has undoubtedly had far more positive aspects because, *inter alia*, as Fredman points out, the definition of workers in terms of equal pay for equal work and work of equal value evolved into a far broader concept compared to the EU Court of Justice decision in the *Lawrie-Blum*[2] case, confirming that every person who performs services "for a certain period of time for and under the direction of another person" in return for which he/she "receives remuneration", "must be considered as a worker" (Fredman, 2015, 261). On the other hand, Mückenberger speaks of *Hybrid Global Labour Law*, in which discussions of Corporate Social Responsibility (CSR) as a source of labour law and the status of ILO Core Labour Standards (CLS) should not be reduced to the distinction between *soft law and hard law*, but to the distinction "between law and non-law", which is necessary, but also quite sufficient for interpretation and implementation (Mückenberger, 2011, 105, 107, 111-113).

As pointed out by Weiss, labour law *contextually* and *semantically* challenges the necessary understanding of the term in Anglo-Saxon and continental European legal circles, because the

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[2] European Court of Justice C-66/85 *Lawrie-Blum v. Land Baden-Württemberg,* [1986], ECR 2121, ECLI:EU:C:1986:284.

former makes a clear distinction between *labour and employment law*, in which labour encompasses collective labour relations, while in continental Europe it encompasses both individual and collective labour law. This resulted in the lack of education in the field of labour law (industrial relations) in the USA and the primary focus placed on employment law (individual labour law), while in continental Europe such a division was "unthinkable" (Weiss, 2013, 43).

However, it has become clear that in recent years the classic Industrial Relations are disappearing, i.e. becoming almost extinct, while carefully examining at the same time the (functional) concept of the employer in terms of agency work, employment mediation, the role of an end user as an employer, but also the concept of a worker and employer through the prism of increasingly pronounced self-employment (Blanpain, Hendrix, Nakakubo and Araki, 2017; Prassl, 2016). Consequently, this is linked to discussions about the concept of workers in terms of Gig Economy (Prassl, 2018). All these are reasons to analyse the teaching of labour law in the Republic of Croatia, whose modern development started when Croatia gained its independence, because the processes, which significantly affect its changes and modernisation in normative, pedagogical and theoretical terms, require much greater and faster adaptability and entirely new approaches.

At this point, i.e. the introductory part of the paper, it is therefore important to define what is meant by labour and social law and to clarify their history and the challenges to which they are currently exposed.

2. Labour and Social Law

Legal disciplines do not arise in a vacuum (Zamboni, 2008, 63). Although they may seem "*natural*" and "*self-evident*", they reflect the reality in which they originated and in which they develop further (Zamboni, 2008, 63). Legal fields are created, changed, reshaped or replaced (Arthurs, 2015, 1).

It is a legal field that creates its "*object of regulation*", i.e. in case of legal disciplines, the "object of research" (Zamboni, 2008, 69):

> " (…) *legal fields get their specific features by moulding themselves around a phenomenon constructed and existing as long as the law recognizes it*" (Zamboni, 2008, 70).

If the reflections of postmodernists and proponents of critical legal theory are relied on, neutral legal discipline and neutral legal terminology should not exist (Zamboni, 2008, 78). The question of what is meant by labour law or social law is not devoid of controversy. (Arthurs, 2002, 646). Thus, for example, the "categories" that labour law unquestionably covers, such as "*labour*" and "*employment*", can be described as "*arbitrary and time-sensitive*" (Arthurs, 2002, 646).

The category of "*labour law*" is "*open-ended*", which leaves enough room to take into account the "*national traditions*" that arise, among other things, from the diversity of legal systems, "*legal-professional cultures*"; different arrangements of legal services, "*national, regional and global political economies*"; different patterns of "*class, religious, racial and gender relations*"; and governing principles whether it is the principle of individual autonomy or the principle of solidarity (Arthurs, 2002, 647).

2.1. Labour Law

At the end of the 19th century,"industrial disputes", trade union activities, employment contracts, safety of workers at work and limitation of the number of working hours became the object of legislative and judicial power (Arthurs, 2013, 586). "*Workplace relations*" and "*labour market regulation*" thus preceded the emergence of labour law as an academic discipline and branch of law (Arthurs, 2013, 586).

Labour law, as already pointed out, has never had a strict meaning or a strictly defined scope (Collins et al., 2018, 7; Arthurs, 2013, 585). Since the very beginning, it has been characterized by "*a degree of definitional ambiguity*" or "*conceptual and normative incoherence*" (Arthurs, 2013, 585). Even the title of this legal discipline is not unquestionable. Depending on a historical period or economic system, it bore different names: "*Industrial Law*, *Labour Law*, *Employment Law*, *Work Law*" (Collins et al., 2018, 7). By the time, the priorities and scope of this legal area have changed (Collins et al., 2018, 7). In this sense, it has followed the development of "*the heavy industry of mass production to modern service networks, global supply chains and the emerging gig economy*" (Collins, 2018, 7). Choosing a title for a legal discipline is not just a matter of describing different laws. On the contrary, this process is guided by the "*normative vision of what labour law ought to do or what its ideal scope should be*" (Collins, 2018, 7). The choice of a title thus includes "*the choice of a paradigm for the subject*" (Collins, 2018, 7). The paradigm implies certain social and economic institutions and the way they are organized. The choice of a paradigm is not a "*purely descriptive exercise*" but a "*normative judgment*" about the task of labour law and how it should be performed (Collins, 2018, 7).

The predominant labour law paradigm refers to "collective labour relations" (Collins, 2018, 8). Within its framework, labour law should establish and protect workers' rights to organize, strike and strengthen their bargaining power vis-à-vis the employer in terms of working and employment conditions (Collins, 2018, 8). It is important to point out that although the definitions of labour law differ among countries due to the differences of legal cultures and depend on historical circumstances, it is central to each of them to regulate the relationship between workers and employers (Arthurs, 2013, 586).

Courses revolving around labour relations appeared in European countries in the first decades of the 20th century and the same can be said for English-speaking countries, the courses were differently entitled: "*Labour Law*"; "*Industrial Law*"; "*Master and Servant Law*" (Arthurs, 2013, 586). This was a response to the end of World War I, the October Revolution and widespread worker dissatisfaction (Arthurs, 2015, 4). The importance of labour law was further emphasized by the period of the Great Depression of the 1930s (Arthurs, 2015, 4). In the English-speaking world, labour law as a "*full-blown academic discipline*" appeared in the years before the outbreak of World War II or immediately after its end (Arthurs, 2013, 586). By 1960, unions undoubtedly had become a powerful player (Arthurs, 2015, 4). Labour law was recognized by "le*gal taxonomers*" as a special branch of law as late as in the 1950s and 1960s (Arthurs, 2013, 586).

In North America, there is a common distinction between labour law and employment law, present among both scholars and practitioners (Schwab, 2017, 116). Both terms denote the legal field that deals with the regulation of employment (Corbett, 2002, 263). Labour Law regulates "*law governing labour-management relations, primarily in unionized workplaces*" (Corbett,

2002, 263). The National Labor Relations Act (NLRA) of 1935[3] is of paramount importance and it protects various forms of collective action by workers (Corbett, 2002, 263).

Employment law is the name for a branch of law that includes "*federal and state statutes and state case law regarding individual employment rights*" (Corbett, 2002, 263). This division is not present in Europe where the term "*labour law*" is used for the law governing the workplace (Corbett, 2002, 263). This distinction is not, if compared with the European tradition and tradition of the majority other countries, just a terminological issue: "*Collective labour rights are one type of rights and individual employment rights are another*" (Corbett, 2002, 263-4). Labour Law is a law that governs collective labour relations and employment law refers to the labour relations of individuals who are not union members (Arthurs, 2013, 587). In the 1970s and 1980s, employment and labour law began to be divided into new subgroups: discrimination law, pension law and occupational health and safety law (Arthurs, 2013, 587). This was not the case with European continental labour law which remained within a wider range of "*work related policy concerns*" (Arthurs, 2013, 587).

2.2. Social Law

Social Law, which also exists under other titles, i.e. Social Security Law, Social Protection Law or Social Welfare Law, originates from the "*political organization of the welfare state*" (Zamboni, 2008, 63-64). It equally represents "*a system of normative regulation*" and "*a legal discipline*" (Zamboni, 2008, 64).

Social Law is difficult to define precisely too (Zamboni, 2008, 67). It signifies different things in different national legal systems just as its content depends on changes in social and economic environments (Zamboni, 2008, 67). One of its features is crossing the border that separates public from private law (Zamboni, 2008, 96). This disorder of traditional dualism results from a special form of a political organization - the welfare state, and leads to relations that were previously considered the exclusive domain of private law based on the principle of individual autonomy, thus becoming areas of "*public discourse*" (Zamboni, 2008, 96). This is true from family relationships to employer-employee relationships (Zamboni, 2008, 97).

The separation of legal disciplines into these two groups is not a reflection of "*empirical separation of relations among individuals and relations between state agencies and individuals*", but always separation of relations between individuals who connect their rights with the rights of other individuals (Zamboni, 2008, 70). As Zamboni pointed out:

> "*by dividing law in general into two large groups, such as public law and private law, legal scholars and lawyers, but also the community in general actually take for granted a specific ideological underpinning, i.e. a liberal ideology propagating that only relations between the individual and state organs are targets of public control and regulation while relations among individuals (e.g. in family matters or in economic relations) are left to the "free will" of individuals*" (Zamboni, 2008, 79).

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[3] "The Wagner Act, Pub. L. No. 74-198, 49 Stat 449 (codified as amended at 29 U.S.C. §§ 151 169 (1935). The current NLRA is the Wagner Act as amended by the Taft-Hartley amendments of 1947 and the Landrum-Griffin amendments of 1959" (according to Corbett, 2002, 263, footnote 14).

Social Law in German and French legal circles encompasses issues of social justice and economic security (Collins, 2018, 9). The law should ensure fair functioning of the market and division of labour (Collins, 2018, 9).

It is important to point out here that the division into public and private law is increasingly questionable today. Hence, the boundaries of employment law and the social security system are lost because, as Collins points out, they have common goals: an efficient labour market and protection of workers from market forces, such as unemployment or inadequate working conditions (Collins et al., 2018, 9). The described social law perspective undoubtedly "*informs the current employment policy of "flexicurity" of the European Union*" (Collins, 2018, 9).

"*Constitutionalization of labour law*" is something that also calls the distinction between public and private law into question (Collins, 2018, 9). The economic dimension of globalization affects labour law. Transnational sources of law, international norms and constitutional rules create a new paradigm of "*human rights at work*"(Collins, 2018, 11).

According to Weiss, the division into public and private law is not satisfactory, particularly for two important reasons (Weiss, 2005, 175). First, this division does not have the same importance in different countries. In some, it is even completely meaningless. The second, more important reason, related to the need to abandon this division is that it depends on understanding whether and in what way a certain function is fulfilled.

> "*Only the interaction between the instruments of collective labour law and instruments of employment law reveals the impact on workers and employers: as long as these two categories are studied as isolated phenomena, they are misleading as far as functions are concerned*". (Weiss, 2005, 175).

Thus, the same issue is regulated in one country by employment law and in another by social security law. For instance, in the event of sickness benefit (Weiss, 2005, 175).

3. Labour and Social Law in the Republic of Croatia as a Course and a Scientific Discipline

The development of labour law in the Republic of Croatia could be divided into several phases. The first period is conditioned by the fact that in the past, or more precisely in the 19th century, today's Croatia was territorially divided into several state formations, and thus legal relations developed under the influence of Germanic, Hungarian and Roman law. In that period, we can speak only fragmentarily about the development of labour relations and labour law as a teaching discipline, because labour relations were an exclusive part of civil law. The next phase in the development of labour law began only after the end of World War I and the establishment of the International Labour Organisation. In that period, Croatian labour law developed as national labour law of the Kingdom of Serbs, Croats and Slovenes, and later the Kingdom of Yugoslavia, which also encompassed the Croatian regions, and was predominantly marked by centralism, the development of individual labour law (working hours, assistance to unemployed workers, etc.), but also restrictions related to freedom of association and collective bargaining (although the establishment of chambers of labour was allowed). The gradual development of labour legislation for vulnerable groups of workers (women and children) began at that time under the influence of the first International Labour Organisation conventions, which were ratified by the Kingdom of Yugoslavia. However, although it laid the foundations for the development of individual and collective labour law, this period was simultaneously marked by significant differences in normative solutions and their actual implementation in practice (Ravnić, 2004,

427-433). In the period after World War II, labour law faced first the abolition of the entire legal order of the Kingdom of Yugoslavia, and consequently a full legal gap, and then the gradual development of centralised socialist labour legislation, which was governed by the central federal government in Belgrade until 1950. Decentralised labour legislation, in which state management of companies was replaced by workers' self-management, and a centrally planned economy was, according to contemporaries, supplanted by certain market elements, lasted for five decades, i.e. until the adoption of the Christmas Constitution in 1990 (Ravnić, 2004, 436-449).

The democratic Constitution provided the "*constitutional foundations of pluralistic labour legislation*" and enabled "*the creation of new Croatian labour law*" (Ravnić, 2004, 454). More than two and a half decades have passed since the enactment of the first Croatian Labour Act in 1995, which marked the beginning of the development of modern Croatian labour law and legislation, and in that period labour relations have undergone several legislative interventions, changes and amendments, [4] and even the enactment of two fully new labour acts, one in 2009,[5] and the other in 2014,[6] when additional harmonisation with the *acquis communautaire* was carried out. This period cannot be unambiguously described as stable, because changes in the economy and changes in labour relations in the first years of Croatia's independence were marked by "strong disputes" and numerous requests to review the constitutionality of legal provisions in terms of which the Constitutional Court in most cases did not find any inconsistency with the Constitution. Judicial practice has provided evolutionary development and the meaning of numerous legal standards, but the focus of disputes has been predominantly related to collective labour relations and civil and public service labour relations (Potočnjak et al., 2007, XLVII).

Looking at the continuum of the *Labour Law* discipline/course in the last seventy-five years in relation to the aforementioned legislative and state policy changes, it is necessary to emphasise that since the end of World War II, it has been supplemented in Croatia with the *Social Law* course. With this unification and forced "cohabitation", a unique *Labour and Social Law* course has existed in our country for more than seven decades, a situation which is encountered in rarely any state, and despite the fact that both of these courses differ in their legal nature (although some interdependence cannot be disputed (Ravnić, 1998, 8)). Looking in relation to this segment at countries formed after the dissolution of the former state, it can be seen that in the last three decades they have mostly divided these courses into two disciplines/courses at their universities and faculties of law, with separate curricula, teaching hours, clearly differentiated learning outcomes, and even different teachers teaching the respective courses. The only exception is the Republic of Slovenia, where these courses were almost never delivered and taught together as one course, but always separately, as two individual and independent courses in the compulsory curriculum within the framework of university study programmes related to the education of lawyers (LL.B. and LL.M. degree holders). Above all, despite the dominant influence of the German tradition in our country, due to all the features and content of the course itself, but also the normative scope it is focused on, it would be more appropriate and accurate to use the term *Social Security Law* instead of *Social Law* (Ravnić, 1998, 8).

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[4] Labour Act, Official Gazette, Nos. 38/95, 54/95, 65/95, 102/98, 17/01, 82/2001, 114/2003, 123/2003, 142/2003, 30/2004 and 68/2005 – Decision of the Constitutional Court of the Republic of Croatia.
[5] Labour Act, Official Gazette, Nos. 149/2009, 61/2011, 82/2012 and 73/2013.
[6] Labour Act, Official Gazette, Nos. 93/2014, 127/2017 and 98/2019.

The period of harmonising the Croatian higher education system with the requirements of the Bologna Process, which began more than 15 years ago, was *inter alia* an opportunity for possible changes and reforms in legal education, but it seems that this has not taken place. It was primarily about the possibilities of legal education reform and its implementation in two cycles, i.e. undergraduate and graduate study programme in law. However, at that time, the Croatian faculties of law opted for integrated undergraduate and graduate study programmes lasting a total of five years. The respective change mainly resulted in the addition of mostly elective courses in the fifth year of study, and unsuccessful attempts at specialising students at those faculties of law that introduced thematic modules in the fifth year of study. The previous four-year legal education, however, has not significantly changed in relation to either its scope or the introduction of new content (except for content related to Croatia's EU membership). In addition, the general impression is that no progress has been made in terms of acquiring the practical skills necessary to successfully integrate law graduates into the labour market and to adapt quickly to real job requirements and tasks in the relevant segments of the legal profession (lawyers, judiciary, corporate lawyers, lawyers in state and public administration bodies, etc.). The consequence thereof is certainly the lowest degree of satisfaction of employers with the competencies of law graduates related to their practical experience in general, and that related to international legal regulations, although they are at the same time satisfied with their generic competencies and application of national legal regulations (Iurisprudentia, 2016, 45). Legal education reform under the influence of the *Bologna* Process was a unique opportunity for changes related to the *Labour and Social Law* course and the abandonment of its delivery as a single course with a dual, but also significantly different, legal nature. Due to the general approach to legal education reform at the time, which did not include significant changes in or upgrades to the previous four-year legal education, as well as the potential fear that one of these individual, emerging courses could become an elective course in new study programmes, the *status quo* has been maintained to the present day. This is mentioned exclusively with the aim of emphasising the difficulties in teaching *Labour and Social Law* in the Republic of Croatia, but also the fact that a deeper knowledge of job content, required competencies and learning outcomes in legal education results in practice in a greater need for knowledge related to *Labour Law* than to *Social Law*. Separating the relevant courses would thus provide an opportunity for the contents of *Labour Law* to be taught to a far greater extent than is the objective need for contents that fall within the scope of *Social Law* or, more precisely, what we should label as *Social Security Law*. On the other hand, insisting on the current situation and approach prevents an appropriate and prompt approach to teaching course contents at those faculties and colleges educating primarily non-lawyers, where relevant knowledge is needed as a complementary segment of the overall education of economists, human resources specialists, managers, but also educational profiles related to occupational safety, workplace psychology, etc. In other words, the emancipation of the two parts of the current *Labour and Social Law* course would provide a much more appropriate, adaptable and prompt response to the education of these professionals in certain segments and labour law topics related thereto.

The observed shortcomings and criticism related to the teaching of *Labour and Social Law* in the Republic of Croatia by no means imply that the scientific development of this discipline, as well as the implementation of appropriate solutions in the Croatian legal system, has lagged behind or regressed. On the contrary, the development of modern *Labour and Social Law* in the Republic of Croatia in the last eighty years has been marked by the following three prominent professors at the Faculty of Law, University of Zagreb: Nikola Tintić, Anton Ravnić and Željko Potočnjak. Although he started working as a lawyer before World War II, and then (Pravni leksikon, 2007, 1161), in specific social and political circumstances and after its end, as professor of *Labour Law* and later of *Labour and Social Law*, Nikola Tintić is certainly the

greatest Croatian labour law theorist and dogmatist. His theoretical concepts and definitions are still relevant today, and even identical to the definitions contained in European directives, and almost completely unencumbered by the ideological characteristics of the time when he predominantly lived and created. However, this was unfortunately neither the case nor the characteristic of his contemporaries in almost the entire former state. Anton Ravnić was a great comparativist and profound connoisseur of comparative legal systems and international solutions, very meticulous in his scientific work, self-effacing and careful when interpreting various institutes of labour and social legislation, legal theory and dogma, and publishing his own research results. Finally, as an active scientist, Željko Potočnjak can be described as the true father of modern Croatian labour and social legislation and labour law theory in the last thirty years of Croatia's independence, i.e. the development of legal thought and science, and the overall national legal system in democratic and pluralistic conditions. In addition to a number of significant scientific results, theoretical assumptions, normative solutions, but also critical analyses of certain legal provisions, Potočnjak successfully defended the legal nature of Croatian *Civil Service Law* as one that undoubtedly represents Labour Law *sui generis* (Potočnjak, 2013, 19).

Labour law is unquestionably a positive legal, i.e scientific discipline, for which, especially in national circumstances and communication, only an objective criterion of definition is used, according to which, probably due to *Kelsen's understanding of law*, it is reduced only to positive law (Ravnić, 1994, 16-17). However, for the purposes of this paper, it is primarily viewed as a course and an integral part of the curriculum, i.e. study programmes at the tertiary level of education.

In conditions when jobs have gone from stable and secure to unstable, insecure and flexible, the challenges of national social policies must be focused on addressing the consequences of precarious and poorly protected work and the risk of poverty and social inequality, especially in neoliberal democracies (Zrinščak, 2002, 32 -33). In this regard, labour law must resist the market in order to maintain its *humanising narrative* (Blackett, 2013, 431), and in the context of transnational standards and its hybrid nature it cannot be based solely on national parameters (Sciarra, 2013, 419). The question therefore arises as to why, in such global conditions and challenges of labour law, we would advocate its transformation for teaching purposes, which could be understood *prima facie* as a significant reduction in teaching content.

4. Why Human Resources Law in Croatia?

According to the available Anglo-Saxon definition, *Human Resources Law* is related to Labour and Employment Law and includes various regulations that are specifically dealt with by human resources specialists in their daily work. Thematically, it covers the issues of "*hiring, firing, employee benefits, wages, paychecks and overtime*", but can also extend to "*workplace safety, privacy and preventing discrimination and harassment*" (HG.org Legal Resources, 2021). The definition clearly indicates that this is an area of law that is substantively focused on those labour law institutes that are necessary for successful human resource management. In other words, human resources law could be considered part of human resource management, if the latter is considered as a common denominator or a higher term, but its nature and foundation is of legal nature, and not part or the dominant form of economics as a science or a course.

Legal education is focused on the education of lawyers, so it is not uncommon to focus on the "*conceptualisation of employment law and the role of law*", and lawyers as part of the total workforce, but changes in law impose the need to go beyond the classic "*parameters*", much

further from "*the interaction between attorneys and ligitation*" (Bodie, 2013, 165). Law extends, to a greater or lesser extent, to all segments of life, and labour law, regardless of the conceptual scope given thereto in either continental legal theory or the Anglo-Saxon legal circle, is unusually important for a whole range of professions and tertiary education programmes, hence not only for an average person as an entity engaged in an employment relationship. We are therefore looking for what Ravnić called an "*operating lawyer*" (legal professional), whose job bears a "*meaning of skills and abilities*", a practitioner who should be no less and a *legal expert* when we talk about legal education (Ravnić, 1994, 19-20). In this context, we do not ignore the fact that the future of comparative labour law depends on the quality of the methodological approach and institutional settings that affect interdisciplinary cooperation, but also on the importance of a functional approach in its teaching (Weiss, 2003, 172-173). The aforementioned interdisciplinarity and cooperation are reflected in the necessity of adapting the education of other educational profiles to the contents and basic institutes of labour law. Human Resources Law should not be seen as a course that will replace or displace the *Labour Law* course, but as one that is functionally adapted to the education of non-lawyers and deprived of those contents that such educational profiles do not need in their everyday work and successful integration into the labour market. Moreover, for the purpose of successful teaching, Human Resources Law has to be open to other disciplines, i.e. transdisciplinary knowledge (Cerovac, 2013, 15-31), but it does not neglect the true legal foundation and nature of such a course. Consequently, it might happen that the courses referred to as the *Fundamentals of Labour Law* and the *Fundamentals of Labour and Social Law* taught within study programmes for non-lawyers will not be delivered any more, and that the *Labour and Social Law* course will be transformed into its constituent but unquestionably and necessarily independent parts, i.e. *Labour Law* and *Social Security Law* as separate courses. We consider this change to be a necessary and qualitative shift, a certain reform from within and the basis for further dynamic development of Labour Law as a course, much more adaptable than has been the case so far.

Human Resources Law is therefore not a new branch of law, nor can it become one, but it represents a new methodological approach to the contents and institutes of labour law, adapted to the needs of the education market and faster integration of various educational profiles into the labour market, i.e. a new methodological approach, functionally integrated into the new course, but inseparable from its dominant labour law nature.

These reflections should be understood neither as mere criticism, because no similar emancipation has been predominantly implemented in the rest of continental Europe, nor as a lack of understanding of all Scylla and Charybdis whose national *Labour and Social Law* courses, as well as all relevant legislation, have gone through a transition and action in a new, democratic and pluralistic society in the last three decades, often exposed to a series of rapid changes that required necessary and prompt adjustment. These changes have occurred so frequently that writing textbooks for the respective courses has become a great challenge (not to use other words: a useless task that is never completed).

5. The Future of Labour Law

Due to the transformation of the "*Western capitalist economy*", scholarly articles on the crisis or the end of labour law as a separate legal discipline are becoming more numerous (Giubboni, 2018, 7). Furthermore, Labour Law as a course in law schools is losing its importance. It is noticeable that this course is being replaced by courses in human resource management (Arthurs, 2015, 3). Authors investigating this phenomenon wonder what the future holds for

this legal field created to protect people in the work environment when the very notion of "l*abour*" loses its primacy in the political and academic environment (Arthurs, 2015, 3).

Weiss questions the future of labour law as an academic discipline but also as a "*practical tool*" (Weiss, 2005, 170). The author points out that labour law arose on the basis of the needs of workers in the manufacturing industry, in the factory as a place of work, and that situation is characterized by the homogeneity of the labour force and the relationship of subordination. These assumptions are no longer dominant, the manufacturing industry is increasingly replaced by the service sector, the factory is replaced by network structures, the workforce is no longer homogeneous but divided into basic and peripheral groups, "*employment relationship and self-employment*" can no longer be clearly distinguished on the basis of subordination (Weiss, 2005, 178-9). Here arises "*the question of inclusion and exclusion*". For example, whether self-employed persons should also be covered by labour law (Weiss, 2005, 179).

Arthurs highlights that labour law is facing an "existential crisis" as labour relations become increasingly insecure, and fewer and fewer workers are involved in collective bargaining (Arthurs, 2013, 589). Regardless of the way of description, the terms "l*abour*" and "*worker*" have been emptied of their previous meaning if viewed from the point of view of political economy, sociology or scientific management (Arthurs, 2013, 589). Workers no longer understand themselves according to the hitherto valid paradigm (Arthurs, 2013, 589). Labour, stresses Arthurs, "as a way of describing social class", "political and industrial movement", disappears from use (Arthurs, 2013, 590). Officials, managers and economists today focus on "human resources" (Arthurs, 2013, 590).

Workers do not any more view themselves as a separate collective with a shared experience that works together to advance their goals toward a "*common adversary*" (Arthurs, 2013, 591). They no longer see themselves as producers, members of trade unions and labour parties but through "*alternative identities*" as consumers, investors, family members, members of groups based on religious, sports and other foundations (Arthurs, 2013, 591).

6. Conclusion

Over the past hundred years, the concept of work has undergone major changes, which is why existing models of labour law can no longer respond to the challenges that people in reality face in their working lives (Kullmann et al.). We are currently in the phase of looking for new models; re-examining the very foundations of labour law, its scope, purpose, institutes, and subjects (Kullmann et al.). The scope of labour law should be more comprehensive, i.e. it should cover different forms of employment, e.g. informal employment (Kullmann, 4).

In addition to the traditional ones, labour law today has other important tasks, especially those related to the protection of human rights and dignity, which is why its constitutionalisation is also discussed (Collins, 2018, 2).

In these conditions, there is a need for new approaches to teaching the *Labour and Social Law* course in the Republic of Croatia. Following the example of the Anglo-Saxon countries (the United Kingdom, the USA and Australia), where this process began some time ago, we believe that the transformation of the said course should be directed towards the introduction and delivery of a new course entitled *Human Resources Law*, especially at faculties and universities that do not primarily educate lawyers, but in whose study programmes and curricula the relevant contents prove necessary and required for both the successful achievement of learning

outcomes and the future of professional activity of law degree holders (i.e. study programmes in economics, human resource management, psychology and sociology of work, etc.). Last but not least, this change should not circumvent faculties of law, as it would help prepare and educate *legal professionals* better, primarily those who will soon enter the labour market in this capacity and apply the acquired knowledge in their everyday tasks at work. The aforementioned transformation of the *Labour and Social Law* course, i.e. the introduction of the *Human Resources Law* course, has its deeper internal reasons, because it would cause and consequently help the emancipation of interconnected, but at the same time also individual courses that have been taught in our country for more than seven decades as an integrated course. Such emancipation should not be directed towards turning any of the mentioned courses (*Labour and Social Law*/*Social Security Law*) into an elective course, but it should rather focus on these as independent courses in which labour relations are taught, as well as all related and relevant topics and institutes, which mark recent processes of transformation of labour relations and their constitutionalisation, on the one hand, and *Social Security Law*, on the other. Such transformation would open not only the need but also the opportunity to devote much more time to certain institutes, topics, practical tools and documents in higher education study programmes (in law).

Would this create a new branch of law? Certainly not in the Republic of Croatia, because the respective change would, *inter alia*, require a much deeper and broader transformation of other legal disciplines and courses, which imposes a temporal and structural imperative, but also resistance that would certainly appear in academic and scientific circles. In addition, by its fundamental (legal) nature, the *Human Resources Law* course is undoubtedly part of *Labour and Social Law* (*Social Security Law*) as an independent branch of law and part of legal science, which simultaneously integrates the necessary additional knowledge from other social sciences (psychology, economics, sociology, etc.). Some might therefore argue that this creates a new interdisciplinary field of science, but for us it is primarily the delivery of a new course within the framework of topics and institutes reflecting recent changes in labour relations and guaranteeing its quality of life in study programmes and by competencies acquired by graduates *pro futuro*. However, its potential, content structure and function have the capacity to initiate transformational processes in higher education and emancipation of the very traditionally and archaically structured *Labour and Social Law* course and its present versions into individual but interdependent parts (new courses).

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A scientific paper

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NEW INSIGHTS INTO LUCAS PARADOX

ABSTRACT

Contrary to neoclassical theory, which states that capital should flow from rich to poor countries, the Lucas paradox shows that capital does not flow from developed to developing countries. More specifically, little capital flows from rich to poor countries. The Lucas paradox is theoretically explained by both differences in fundamentals and capital market imperfections. Among differences in fundamentals, the role of institutions is often defined as crucial, but the papers do not explain which element of the quality of institutions ultimately matters. Moreover, recent studies have not included the post-financial crisis period. Therefore, this paper examines the elements of institutional quality: voice and accountability, Political Stability and non-violence; Government Effectiveness; Regulatory Quality; Rule of Law and Corruption Control as determinants of capital flows. More specifically, this paper analyses the impact of institutional quality and selected macroeconomic variables on foreign direct investment. Indeed, foreign direct investment has a positive impact on capital accumulation and enables the transfer of technology and knowledge, which supports economic growth and development. Data for 149 countries for the period 2012 - 2019 are obtained from the World Government Indicators and the World Bank. Using dynamic panel data analysis, we find that the quality of institutions is still the leading variable in explaining the Lucas Paradox, with all elements being important. This result should be of great importance to policy makers in developing countries as they should strive to improve the quality of institutions in order to attract foreign direct investment as an important factor for economic growth and development.

Keywords: *Lucas paradox, foreign direct investment, institutional quality, panel data analysis.*

1. Introduction

According to neoclassical theory and the law of diminishing returns, capital should move from rich countries to poor countries where the marginal product of capital is higher, and investment will continue until the capital-labour ratio, wages, and returns to capital are equalised. Nevertheless, in analysing the example of the United States and India, Lucas (1990,

92) concluded that the prediction of standard neoclassical theory about capital flows is wrong and offered possible answers: Differences in human capital (labour effectiveness), external benefits of human capital (lack of knowledge spillovers across national borders), capital market imperfections such as political risk, and finally the fact that capital was still largely immobile during the period analysed. The question, then, was how to modify standard neoclassical theory to make the paradox disappear. Research has classified theoretical explanations of the paradox into two groups of factors: (i) differences in fundamentals and (ii) international capital market imperfections. Differences in fundamentals include factors such as technological differences, lack of production factors, government policies and institutional structure, while market imperfections include sovereign risk and asymmetric information (Alfaro et al., 2008, 347). Among all these factors, research over time has emphasised the importance of institutional quality factors. For example, Alfaro et al. (2008, 348) pointed out that countries such as Peru, Costa Rica, and Turkey have attracted new investment through FDI due to improvements in institutional structure. Figure 1 shows that nothing has changed in the last decade, capital still flows mainly to high income countries, while lower middle and low income countries are neglected. Therefore, Figure 1 shows that the Lucas paradox still exists.

Figure 1: FDI inflows regarding level of income
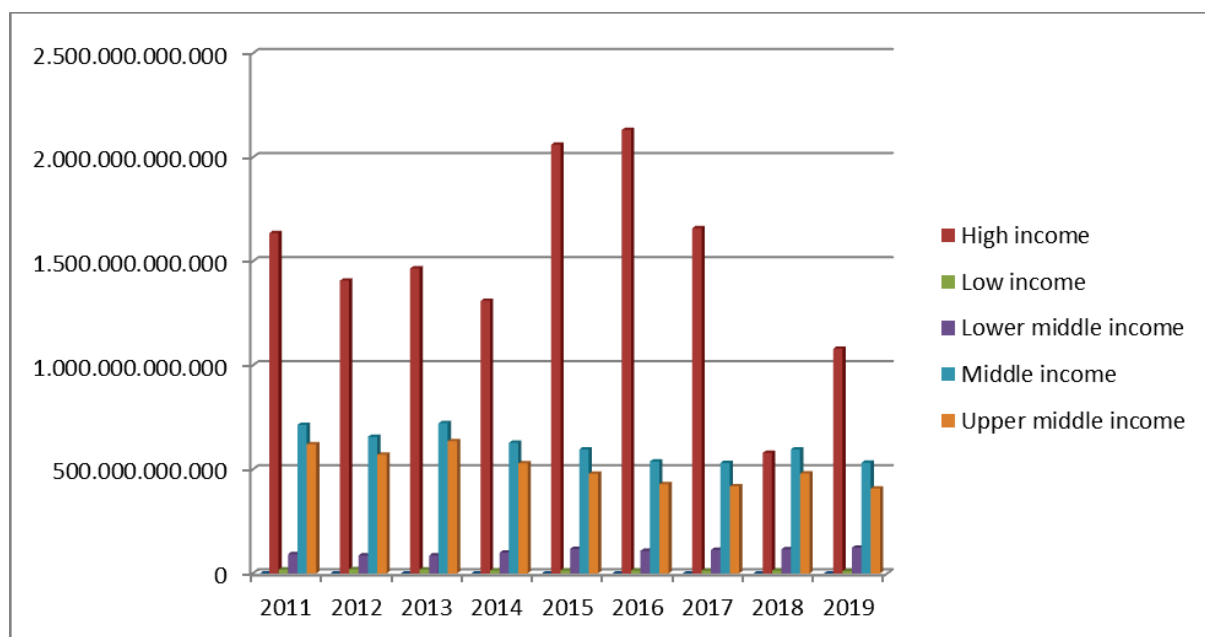
Source: Authors' calculation

The literature on the determinants of FDI is vast and, until the beginning of the 21st century, has mainly pointed to economic and political factors such as greater openness, international competitiveness, reduction in the size of government, political instability and political polarization (Edwards, 1990, 26-27). Wei (2000, 337-338), analysing capital importing countries, demonstrated that corruption affects both the volume and composition of capital inflows and reduces foreign direct investment. Finally, recent work points to the importance of institutional quality (Alfaro et al., 2008, Okada, 2013). Nevertheless, there are studies that reject the importance of institutional quality (Azémar and Desbordes, R., 2013, Keskinsoy, 2017). Therefore, in this paper, we will try to resolve this ambiguity by examining the structure of institutional quality by analysing individual elements per se. Also, unlike previous research, we conduct a more thorough panel data analysis methodology. The results obtained

should reveal a possible deeper explanation of the Lucas paradox in relation to institutional quality. Moreover, the results should explain which element of institutional quality is most important for attracting FDI as an important factor for economic growth and development. Indeed, FDI has had a positive impact on capital accumulation and has enabled the transfer of technology and knowledge, which supports total factor productivity growth. The importance of capital inflows for countries in Central and Eastern European has been highlighted by Damijan et al. (2013, 3). Moreover, Fidrmuc and Martin (2011, 70), focusing their study on Bulgaria, Czech Republic, Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia, have also confirmed that exports and the stock of FDI, as opposed to portfolio investment, are positively related to industrial production and economic growth.

The rest of the paper is organized as follows. Section 2 presents the main empirical studies on the determinants of FDI and the Lucas paradox. The third section explains the methodology and the data sample, while the fourth section shows and discusses the empirical results. The final section provides concluding remarks, including policy implications and suggestions for future research.

2. Literature review

As mentioned above, theoretical explanations of the Lucas paradox can be divided into two groups of factors: (i) differences in fundamentals and (ii) international capital market imperfections. Differences in fundamentals take into account the absence of factors of production, different government policies and institutions. The absence of factors of production considers human capital and land, which positively affect the return on capital. Government policies can also be a barrier to the flow of capital and thus affect the return on investment. For example, different tax policies or inflation acting like a tax can reduce the return on capital, or the government can restrict the flow of capital by imposing capital controls. Institutions consist of informal restrictions (traditions and customs) and formal rules (rules, laws, constitution) and they shape the structure of the economy and influence economic performance through their effect on the investment decision. Capital market imperfections and information asymmetries also contribute to differences between ex-ante and ex-post returns to capital. International capital market imperfections include asymmetric information and country risk. Asymmetric information problems can take the form of adverse selection, moral hazard, and costly government scrutiny, while sovereign risk accounts for situations in which foreign assets in a country are seized or loan contracts with foreigners' default (Alfaro et al., 2008, 349-350). The following section presents empirical research on the determinants of international capital movements, in particular FDI and Lucas paradox.

International capital movement is mainly influenced by both external and internal factors, the latter including the extent of financial market liberalization and global financial market integration (Hannan, 2018). The findings of Abiad et al. (2009, 285-286) also confirm the importance of financial market integration. Indeed, using a panel data analysis for a sample of countries from Europe, North and South America and Asia over the period 1975-2004, they documented that capital in Europe flows from rich to poor countries and this can be explained by the higher financial integration of European countries. Moreover, capital inflows in Europe are associated with higher growth rates and hence faster income convergence. Fernandez-Arias (1996), using a sample of 13 countries based on quarterly data for the period 1989-1993, concluded using an OLS estimator that capital inflows to developing countries are the result of lower interest rates in developed countries. The dependent variable in his analysis was portfolio inflows (equity and debt) and the control variables were the developed country

interest rate and the developing country interest rate. Portes and Rey (2005), using a sample of 14 countries for the period 1989-1996, showed that information asymmetry has a negative impact on capital inflows. In terms of sovereign risk, Asideu et al. (2009, 268) found that expropriation risk reduces the net flow of foreign investment and leads to underinvestment. They also concluded that the negative relationship was stronger for countries receiving less foreign aid and that foreign aid reduces the risk of expropriation by the host government. Therefore, capital market imperfections (degree of financial integration) and information asymmetry are to some extent responsible for the Lucas paradox.

Nevertheless, institutional quality, observed for example as the extent of government corruption, also affects returns to capital and consequently capital flows and is therefore the subject of empirical research. Institutional quality is not only important for capital flows, but also for economic development. In particular, FDI flows are seen as a channel through which institutions influence long-run development. Globerman and Shapiro (2003), using a sample of developed and developing countries for the period 1995-1997, concluded that governance infrastructure is an important determinant of both FDI inflows and outflows. Indeed, investment in government infrastructure not only attracts capital, but also creates the conditions for domestic MNEs to emerge and invest abroad. Similarly, Rodrik and Subramanian (2009) have pointed out that weak institutions discourage capital flows, lower economic growth and hinder development. Lothian (2006, 368) also concluded that the increase in capital flows is due to better institutions, especially the protection of property rights. Daude and Stein (2007, 341) find that the quality of institutions has positive and economically significant effects on FDI. They also confirmed that some institutional aspects are more important. Specifically, regulatory quality, unpredictable policies, excessive regulatory burden, government instability and lack of commitment play an important role in deterring FDI. Bénassy-Quéré et al. (2007, 780) examined the impact of various forms of institutional quality on bilateral FDI. Among other things, they pointed out that bureaucracy and corruption are important determinants of FDI. Busse and Hefeker (2007, 400-401) examined the individual effects of 12 variables from the International Country Risk Guide (ICRG) dealing with political risk and components of political institutions. The results of their unbalanced panel data analysis for 83 countries for the period 1984-2003 showed that government stability, internal and external conflict, corruption and ethnic tension, law and order, democratic accountability of government, and quality of bureaucracy are highly significant determinants of FDI inflows. Similarly, using a panel data analysis of 112 countries for the period 1985-2009, Okada (2013, 140) concluded that there is an interaction effect of financial openness and institutional quality on capital inflows. In addition, he concluded that bureaucratic quality and law and order play an important role on FDI. The dependent variable was capital inflows per capita, defined as the sum of FDI per capita and private capital per capita. In addition, Faria and Mauro (2009, 386) showed that institutional quality also affects the debt capital structure of countries. Alfaro et al. (2008, 365) examined the Lucas paradox for developing and developed countries for the period 1970-2000, and using cross-country OLS regressions, concluded that low institutional quality is the leading variable explaining the existence of the Lucas paradox, and when these differences are accounted for, the Lucas paradox disappears. Nevertheless, Keskinsoy (2017, 3) provided evidence, using a simple cross/intercept OLS estimator, that the Lucas paradox holds only for developing countries and that institutions are not responsible for the paradox. Moreover, Azémar and Desbordes (2013) concluded that institutional quality does not solve the Lucas paradox in a sample of 60 countries over the period 1970-1988 using the least squares method. Indeed, they showed that the results of Alfaro et al. (2008) were driven by the presence of outliers and when these are controlled for, the Lucas paradox remains. The

dependent variable was private capital inflow per capita as in the Alfaro et al. (2008) paper. Moreover, Akhtaruzzamana et al. (2018, 471) additionally specified the model of Alfaro et al. (2008) and demonstrated that although institutional quality is a statistically significant determinant of capital inflows, it does not fully explain the Lucas paradox. This is because even when institutional quality is controlled for, the level of economic development of a country remains a significant determinant of capital inflows. So, as can be seen, the results are ambiguous and we will try to resolve this ambiguity by examining the structure of institutional quality with a deeper methodology.

3. Methodology and data sample

This paper analyses the impact of institutional quality on net FDI inflows in 149 countries over the period 2012-2019. To analyse the impact of institutions on net FDI inflows, we use six institutional variables constructed by Kaufmann et al. (2010) and taken from the Worldwide Governance Indicators (WGI). We use six different indicators of institutional quality variables, each representing a different dimension of governance: "Voice and Accountability" - captures perceptions of the extent to which a country's citizens are able to participate in electing their government, freedom of expression, freedom of association, and free media; Political Stability and Absence of Violence - captures perceptions of the likelihood that the government will be destabilized or overthrown through unconstitutional or violent means, including politically motivated violence and terrorism; Government Effectiveness - captures perceptions of the quality of public services, the quality of the civil service and its degree of independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to those policies; Regulatory Quality - captures perceptions of the government's ability to formulate and implement sound policies and regulations that enable and promote private sector development; Rule of law - captures perceptions of the extent to which actors have confidence in and abide by the rules of society, particularly the quality of contract enforcement, property rights, policing and courts, and the likelihood of crime and violence; Control of corruption - captures perceptions of the extent to which public power is exercised for private gain, including small and large forms of corruption and the "capture" of the state by elites and private interests. In addition, we constructed a composite indicator for the institutional variable as the sum of all six indicators, representing a catch-all indicator. For all indicators, larger values indicate better institutions. Given the theoretical framework and previous research, we also used control variables: Trade Openness, GDP Growth and Inflation. GDP *per capita* was omitted due to correlation with institutional variables, while real interest rate was omitted due to large number of missing values. Annual data were taken from the World Bank database. According to the characteristics of our dataset, a panel data analysis is applied. To test our hypothesis, we formed the following model:

$$FDI_{i,t} = \alpha_i + \beta_1 FDI_{i,t-1} + \beta_2 FDI_{i,t-2} + \beta_3 TO_{i,t} + \beta_4 GDPG_{i,t} + \beta_5 INFL_{i,t} + \beta_8 INST_{i,t} + \varepsilon_{i,t}$$

$$(2)$$

where $FDI_{i,t}$ represents the Foreign direct investment as net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP in country *i* in year *t*; $TO_{i,t}$ stands for Trade openness as the sum of exports and imports of goods and services measured as a share of gross domestic product; $GDPG_{i,t}$ denotes GDP growth. Data are in constant 2010 U.S. dollars; $INFL_{i,t}$ denotes inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in

constant local currency; $INST_{i,t}$ stands for the institutional quality representing in each model one of six above-mentioned individual indicators: Voice and Accountability (VaA), Political Stability and Absence of Violence (PSAV); Government Effectiveness (GOEF); Regulatory Quality (REGQ); Rule of Law (RoL) and Control of Corruption (CoC); and composite indicator (COMP); $\alpha_{i,t}$ is constant term and it is assumed that $\varepsilon_{i,t}$ are identically and independently distributed error terms. Finally, since each indicator of institutional quality is included separately in the model, seven models were tested.

Gross FDI and net FDI inflows are commonly used when considering FDI, and there are arguments for each depending on the context of the analysis. Although gross inflows seem to be more commonly used in the empirical literature, net FDI inflows are also used. To control for country size, we normalize the dependent variable to GDP in each country and year. This approach is relatively common in the empirical FDI literature (Asideu et al. 2009), where net or gross FDI is expressed as a share of GDP or GNP.

4. Results and discussion

As can be seen from Table 1, our results show that institutional variables are significant for FDI inflows. Namely, a higher level of institutional quality has a positive effect on FDI inflows, confirming our hypotheses regarding the Lucas paradox. This implies that countries that want to attract FDI as an important factor for economic growth and development should strive to improve their institutions. Moreover, our results show that Rule of Law (RoL) and Control of Corruption (CoC) have higher coefficients compared to the others, implying that countries should particularly focus on these dimensions of governance. As for Voice and Accountability (VaA) and Regulatory Quality (REGQ), they proved to be statistically significant, but the results of the Sargan test indicate a possible problem of overidentifying restrictions in the models.

For the control variables, trade openness was found to be significant in four out of seven models, suggesting that higher levels of trade openness lead to higher levels of FDI, which is consistent with the theoretical assumptions. GDP growth and inflation were not found to be statistically significant, suggesting that FDI is not primarily attracted by macroeconomic factors but by some others.

Table 1: Lucas paradox - the impact of institutional quality on FDI inflows

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Const.	-13.951***	-17.812***	-24.366***	-16.393***	-28.639***	-21.550***	-23.255***
L1	0.398***	0.395***	0.386***	0.396***	0.390***	0.404***	0.389***
L2	0.389***	0.392***	0.361***	0.382***	0.373***	0.373***	0.366***
TO	0,078***	0.047***	0.050**	0.076***	-0.039**	0.002	0.009
GDPG	-0.003	-0.017	0.021	0.082	0.11**	0.028	0.051
INFL	0.031	0.028	0.030	0.038**	0.033*	0.010	0.035
VaA			8.506***				
PSAV				4.411***			
GOEF	3.300***						
REGQ		5.737***					
RoL					12.703***		

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
CoC						8.857***	
COMP							1.560***
ABond (1) (p-value)	0.018	0.017	0.016	0.013	0.014	0.014	0.015
ABond (2) (p-value)	0.488	0.484	0.503	0.507	0.500	0.504	0.517
Sargan test (p-value)	0.139	0.023	0.016	0.527	0.148	0.097	0.220

*, **, *** - indicate significance at 10%, 5% and 1% level
Source: Author's calculation

Our results are consistent with previous research such as Daude and Stein (2007) and Alfaro et al. (2008), which confirm the importance of differences in fundamentals, more specifically institutional quality, as a theoretical explanation of the Lucas paradox. Therefore, the main challenge for less developed countries to attract capital is to improve institutional quality, which should ultimately lead to economic growth and development.

5. Conclusion

Research has classified theoretical explanations of the Lucas paradox into two groups of factors: (i) differences in fundamentals and (ii) international capital market imperfections. Among these factors, research over time has emphasised the importance of institutional quality factors. Nevertheless, as we have shown in the Introduction, there are studies that reject the importance of institutional quality. Therefore, in this paper, we resolved this ambiguity by examining different dimensions of institutional quality. Using dynamic panel data analysis, this paper has attempted to fulfil the existing literature on the theoretical explanation of the paradox. In addition, the paper has analysed the importance of fundamental factors, particularly the importance of institutional quality as a factor in attracting FDI as a prerequisite for economic growth and development. Our results have shown that all dimensions of institutional quality are important and that they play a key role in attracting FDI. In addition, our results have shown that rule of law and corruption control are of paramount importance. These results imply that countries should improve their institutions first and foremost in order to remain attractive locations for FDI and their development prospects. Without institutional quality, macroeconomic variables will not allow the market mechanism to function as economic theory suggests. Finally, future research should seek to examine the importance of portfolio inflows as non-negligible part of capital flows.

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DUTCH DISEASE – THE CASE OF CROATIA: COUNTY LEVEL ANALYSES

ABSTRACT

The term Dutch Disease was first used by "The Economist" in 1977 to describe the sharp increase in wealth in the Netherlands in the 1960s caused by the discovery of large gas reserves. After the discovery, there were negative effects on the Dutch economy, mainly due to the subsequent appreciation of the real exchange rate. Namely, as revenues from exports increased, the Dutch guilder appreciated, which had a detrimental effect on other industries. Similarly, the rapid growth of the tourism sector may also have potential negative effects. The availability of natural resources (national and nature parks, beaches, etc.) becomes a comparative advantage of the tourism product with subsequent specialization in tourism, neglecting other sectors, with all the negative aspects such as real appreciation of the domestic currency (decline in competitiveness), low growth rates of industrial production, artificially high real wages, reallocation of production factors from the tradable to the non-tradable sector, the decline in the relative productivity of the tradable sector, and the like. Such a scenario could occur due to the tourism boom in the Croatian coastal part, and therefore the aim of this work was to investigate possible evidence of Dutch Disease in the Adriatic region of Croatia at the county level. Examining the data and conducting a Granger causality test shows that there are indications of Dutch Disease regarding reallocation of production factors and that policy makers should take the necessary policy decisions to manage the negative consequences in time and prevent slower economic growth in the future.

Keywords*: Dutch Disease, Croatia, county level.*

1. Introduction

Tourism in Croatia represents a significant part of the country's GDP. The gross value added of tourism industries in 2016 amounted to 69 648 million kuna and the share of direct gross domestic product of tourism in the gross domestic product was 11.40% (DZS, 2017). Some projections show that the indirect effect is up to 17% of GDP. Moreover, in 2018, the tourism sector employed 7.4% of total employment, while its share in exports was 36.4% (Rašić Bakarić, 2019, 3). Therefore, it can be concluded that the tourism sector contributes significantly to economic growth and development. In comparison, the average share of tourism in the GDP of EU countries is 2.3%. The number of foreign visitors has increased from 9 035 292 arrivals in 2005, which generated 50 095 064 nights, to 17 353 458 arrivals in 2019, which generated 84 147 631 nights (DZS, 2020). Of the total number of arrivals and nights, 86.50% and 94.56% respectively were realized in seven counties on the coast of the country (DZS, 2020). More specifically, 28.92% of overnight stays were recorded in Istarska County, 19.69% in Splitsko-dalmatinska County, 19.78% in Primorsko-goranska County,

10.82% in Zadarska County, 9.13% in Dubrovačko-neretvanska County, 6.08% in Šibensko-kninska County and finally 3.13% in Ličko-senjska County.

Moreover, the government is initiating new investments in the tourism sector with the aim of additionally accelerating economic growth and improving income levels. Positive effects of the tourism sector are visible, but on the other hand, tourism also leads to environmental and socio-economic costs, as well as deindustrialization, which reduces the level of economic diversification of the country and makes it more vulnerable to external and internal shocks.

Croatia has been recognized as a tourist destination mainly because of its natural resources (national and nature parks, beaches, sunny days, historical heritage, cultural heritage...), which are mainly located in the coastal area of the country. Thus, the natural resources in the coastal area became a comparative advantage that led to a tourism boom. However, this boom may have adverse effects on other sectors leading to a redistribution of resources from the manufacturing sector to the tourism sector. Namely, in the booming sector (tourism), the demand for labor increases, leading to a decrease in employment in the lagging tradable sector. This reallocation of labor is called direct deindustrialization. There is also an increase in demand for labor in the non-tradable sector (due to higher demand for products and reallocation of labor to the booming sector), which also leads to a decline in employment in the lagging tradable sector. This is defined as indirect deindustrialization. So, the purpose of this paper is to analyze whether the Croatian coastal part suffers from Dutch Disease due to the tourism sector and whether there is any evidence of the resource movement effect. There are not many works that have looked at Dutch Disease in general, especially when tourism is considered as a disease trigger. In addition, no study has been conducted at the regional/county level in Croatia. It is hoped that this work will contribute to studies on tourism in Croatia, analyze whether resources have been diverted from other sectors, leading to deindustrialisation, and alert policy makers to possible symptoms and negative externalities caused by an uncontrolled tourism boom.

The rest of the paper is organized as follows. The next section presents the literature review on Dutch Disease. The third section explains the methodology and data collection, while the fourth section presents and discusses the empirical results. The final section is the conclusions, which summarize the findings and provide recommendations for policy makers and suggestions for future research.

2. Dutch Disease – literature review

Brahmbhatt et al. (2010, 1) define Dutch Disease as a phenomenon that reflects changes in the structure of production caused by a shock, such as a major discovery of a natural resource, an increase in the international price of an export commodity, or the presence of permanent foreign remittances or capital inflows. Dutch Disease is possible in a situation where a country's export depends mainly on only one sector/product, leading to appreciation of the domestic currency. Moreover, due to the appreciation, all other domestic products also suffer from an increase in prices and ultimately from a decrease in competitiveness. The end result is the stagnation of other sectors of the economy (Jošić and Maček Pandak, 2017, 126). For example, Dwyer et al. (2014, 5) have explained the economic impact of a boom in the mining industry in Australia, which drove up labor costs, making it difficult for other sectors, including tourism, to recruit and retain staff.

The term Dutch Disease is also used to describe other types of foreign exchange inflows, such as remittances and development assistance. In all cases, the result is a real appreciation of the

currency and a redistribution of resources from the tradable to the non-tradable sector. According to Bresser-Pereira (2008, 60), the main symptoms of Dutch Disease are currency overvaluation, low manufacturing growth rates, artificially high real wages and high unemployment. Nevertheless, there are also possible positive effects of Dutch Disease, as Corden (2012, 5) states. Namely, an overvalued currency has positive effects on the non-tradable goods sector, more specifically on workers who receive higher wages. Moreover, as a result of currency appreciation, consumers enjoy lower prices for imported goods (relative to domestic prices). Finally, the government benefits from taxing the booming sector, as suggested by Copeland (1991, 527).

Chao et al. (2006) have discussed possible negative effects of the rapid growth of the tourism sector. According to them, the expansion of tourism increases the prices of non-tradable goods (services), which lead to an increase in revenue. Since tourism "converts" non-tradable goods into export goods, the price increase can be considered as an improvement in the terms of trade. However, the increase in the price of non-tradable goods encourages the reallocation of resources from the manufacturing (tradable) sector to the non-tradable sectors. The end result is the onset of Dutch Disease and de-industrialization. The presence of externalities will further enhance the de-industrialization effect, making tourism a sector that has a negative impact on the overall economy. Due to the data availability at the county level, this paper focuses on the signs of de-industrialization considering the sectoral employment structure at the county level.

The availability of natural resources becomes a comparative advantage of the tourism product and explains why destinations with these elements often specialize in tourism (Capó et al., 2007, 616). The strengthening of the tourism sector at the expense of other sectors is characteristic of coastal and island countries. Some examples of such countries are Spain, Greece and Croatia. Capó et al. (2007, 615), in a study of two different Spanish regions, the Balearic Islands and Canary Islands, whose economies are heavily oriented towards tourism, concluded that both islands show signs of Dutch Disease and therefore their economic growth may be at risk in the coming years. Tuncay and Özcan (2020, 112) conducted a panel data analysis for the period 1996-2015 for 17 Mediterranean countries and concluded that Dutch Disease exists in several countries, including Croatia. In addition to Croatia, they also identified Dutch Disease in Albania, Bosnia and Herzegovina, Egypt, Greece, Italy, Morocco and Turkey.

Similar to Croatia, the tourism sector in Thailand is also a major contributor to overall GDP. Nevertheless, according to Kenell (2008, 3), no Dutch Disease has emerged in Thailand. Indeed, Thai production is relatively more diversified with a wide range of export goods, with industrial production contributing significantly to GDP and capital inflows. Therefore, Thailand is not solely dependent on tourism for foreign capital inflows. Analyzing the relationship between the real exchange rate, tourism revenues and de-industrialization, Deskar Škrbić (2017) concludes that there are no symptoms of Dutch Disease in Croatia yet, but does not rule out the possibility of its occurrence if the growth of the tourism sector continues. Kožić (2019) also concluded that the tourism sector has a negative impact on the willingness to continue education, so that more and more young people living in attractive tourist destinations lose motivation to study. These trends may have a long-term negative impact on human capital and slow down potential economic growth (Kožić, 2019).

Copeland (1991) suggests that the government should play an important role in relation to the role of tourism. Namely, the government should either offset undesirable changes in relative

income levels or ensure that the economy realizes the benefits of tourism. In terms of macroeconomic policies that can be activated to address the negative impacts of Dutch Disease, Ebrahimzadeh (2017) points out that macroeconomic policy depend on the sector and whether the source of Dutch Disease is temporary or permanent in nature. If a newly discovered resource is temporary, government assistance to vulnerable sectors may be introduced. The exchange rate can also be managed through foreign exchange intervention, which controls the value of the local currency and thus insulates the economy. Also, the central government should spend unexpected public revenues wisely and transparently and manage them through a special fund. On the other hand, if a newly discovered resource is to be permanent, the country will experience inevitable structural changes in the economy to ensure economic stability. Measures to increase the productivity of the non-tradable sector can be privatization, restructuring, and investment in worker retraining. Another possible measure is to diversify exports to reduce dependence on the growing sector and protect the economy from external shocks such as a sharp drop in commodity prices or a natural disaster. For example, Dwyer et al (2014, 10) have pointed out that a slowdown in the mining industry boom would have a positive impact on the expansion of other sectors (manufacturing, agriculture, tourism) and eventually strengthen the Australian economy.

Although there is no statistically significant evidence that natural resources directly affect state governance or the quality of institutions, there is evidence that the quality of institutions determines the quality of economic policy in situations where natural resources are discovered on a large scale. Indeed, there is empirical evidence that government spending is correlated with increases in natural resource revenues (Brahmbhatt et al., 2010, 5). Moreover, in order to limit the increased government expenditures caused by the increase in tourism or other revenues generated by the boom, a special fund should be established to mitigate the negative effects. The special reserve fund and the fiscal surplus are thus macroeconomic measures that can mitigate or completely eliminate potential problems associated with Dutch Disease in the case of Croatia (Deskar Škrbić, 2017). If the country continues to face the adverse effects of Dutch Disease, it is necessary to focus on investments that contribute to increasing the productivity of other sectors. Some possible solutions are investing in transport and logistics infrastructure, expanding investment in education, and helping to master the skills to use new technologies and innovations (Brahmbhatt et al., 2010, p. 5). Finally, there is a need for a balanced economy, the integration of agriculture and tourism (through marketing, use of local products, agri-tourism, etc.), and the need to attract new businesses, especially those related to new technologies in tourism areas. These are all part of sustainable tourism development (Capó, et al., 2007, 625).

3. Methodology and data sample

The above research problem is investigated by examining data and conducting a Granger causality test. The sample covers the period from 2010 to 2018. The analysis will cover seven Croatian coastal counties: Dubrovačko-neretvanska County, Splitsko-dalmatinska County, Šibensko-kninska County, Zadarska County, Ličko-senjska County, Primorsko-goranska County and Istarska County, as those are tourism oriented counties.

All data are taken from Croatian Bureau of the Statistics. The data on overnight stays and tourist arrivals are taken as an indicator of the possible cause of Dutch Disease. The effect of resource movement is approximated by the share of tradable and non-tradable sector employment in total employment and by the share of agriculture, forestry and fishing, manufacturing and accommodation and food service activities in total employment. In order

to test for causality, a simple Granger non-causality test for heterogeneous panel data models proposed by Dumitrescu and Hurlin (2012) is applied. This test is applicable also for samples with very small T and N dimensions, what is the case in this paper. Therefore, to test the causality between sectoral employment and nights following equations are considered:

$$NIGHTS_{i,t} = \alpha_i + \sum_{k=1}^{K} \gamma_i \, NIGHTS_{i,t-k} + \sum_{k=1}^{K} \beta_i \, SECEMPLOY_{i,t-k} + \varepsilon_{i,t} \qquad (1)$$

$$SECEMPLOY_{i,t} = \alpha_i + \sum_{k=1}^{K} \gamma_i \, SECEMPLOY_{i,t-k} + \sum_{k=1}^{K} \beta_i \, NIGHTS_{i,t-k} + \varepsilon_{i,t} \qquad (2)$$

where $NIGHTS_{i,t}$ stands for tourist nights - each registered night spent by a person (tourist) in an establishment providing accommodation services, and SECEMPLOY stands for share of tradable and non-tradable sector employment in total employment. After evaluating the model, to test Granger non-causality following hypotheses were tested:

H0: there is no causal relationship for any of the cross-section units of the panel
H1: there is causal relationship for any of the cross-section units of the panel.

The definition of the tradable and non-tradable sector is applied as in Deskar-Šrbić (2017). Therefore, according to the statistical classification of economic activities (NACE), the tradable sector consists of agriculture, forestry and fishing (A) and industry excluding construction (B-E), and the non-tradable sector is other sectors.

4. Results and discussion

Nights and employment for all counties are shown in Figure 1 and Figure 2-4. Figure 1 generally shows the growth trend of nights for all counties, with Istarska, Splitsko-dalmatinska and Primorsko-goranska counties being the leading counties.

Figure 1: Overnight stays at the county level
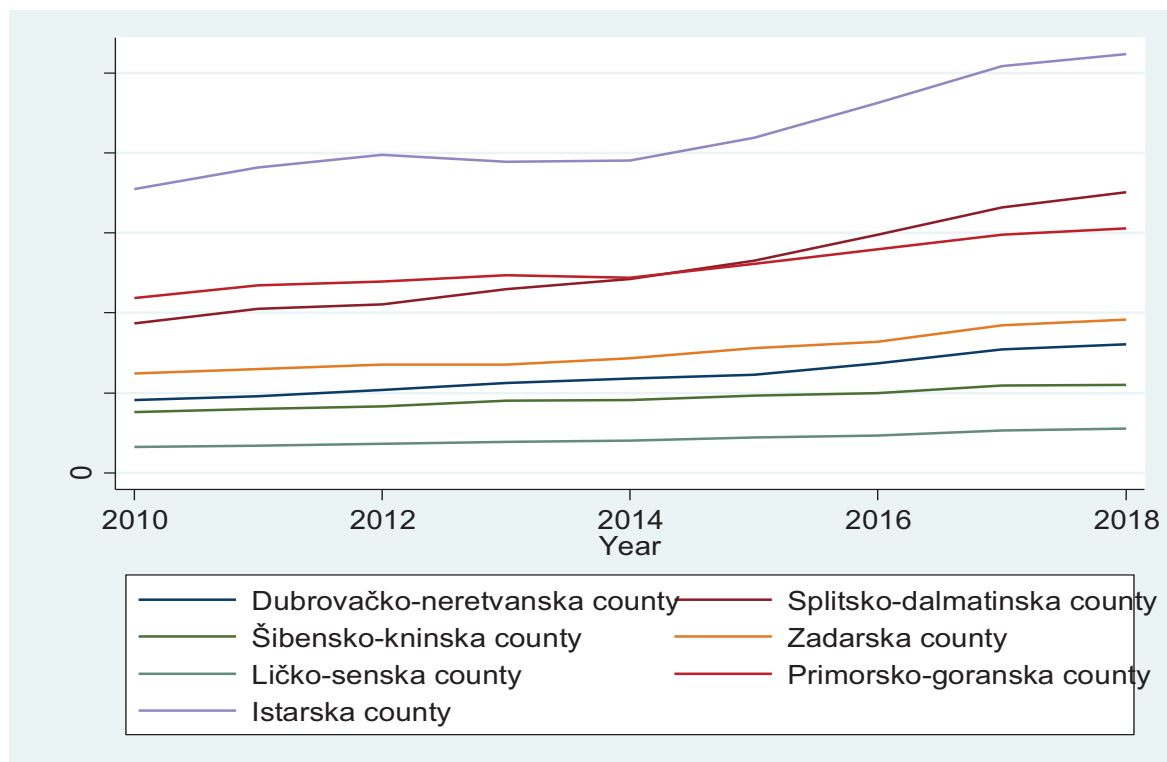
Source: Authors' calculation

Figure 2 shows the share of employment in the tradable and non-tradable sectors in total employment, implying possible signs of Dutch Disease. Indeed, it can be seen that the share of the non-tradable sector is increasing, while the share of the tradable sector is decreasing in parallel. This is particularly visible for Primorsko-goranska County (-5.03 pp. and -22.16% in terms of number of employees), Dubrovačko-neretvanska (-2.93 pp.; -21.29%) and Splitsko-dalmatinska (-4.44 pp.; -19.10%). On the right side of Figure 3, this can also be confirmed, as the above-mentioned counties show the most visible growth in employment in the non-tradable sector from 2010 to 2018. However, when the number of employees is taken into account, the largest growth is in Zadarska (17.73%), Šibensko-kninska (12.50%) and Istarska (10.82%) counties.

In order to scrutinize data Agriculture, forestry and fishing, Manufacturing, and Accommodation and food service activities were additionally separately presented. Thus, figure 3 shows the share of employment in agriculture, forestry, fishing and manufacturing in total employment and separately the share of manufacturing. Regarding manufacturing, the decreasing trend is visible in all counties, but especially in Dubrovačko-neretvanska (-29.50%), Primorsko-goranska (-26.06%) and Splitsko-dalmatinska (-22.05%). In Figure 5 it can be seen that the share of employees in the accommodation and food service activities sector is growing in all counties with an average growth rate of 51.57%, with the largest increase in Zadarska County (90.59%), followed by Istarska (53.20%) and Splitsko-dalmatinska (50.23%) counties. On the other hand, Ličko-senjska and Primorsko-goranska counties have recorded growth of 25.10% and 26.63% respectively.

Figure 2: The share of tradable (left) and non-tradable (right) sector employment in total employment
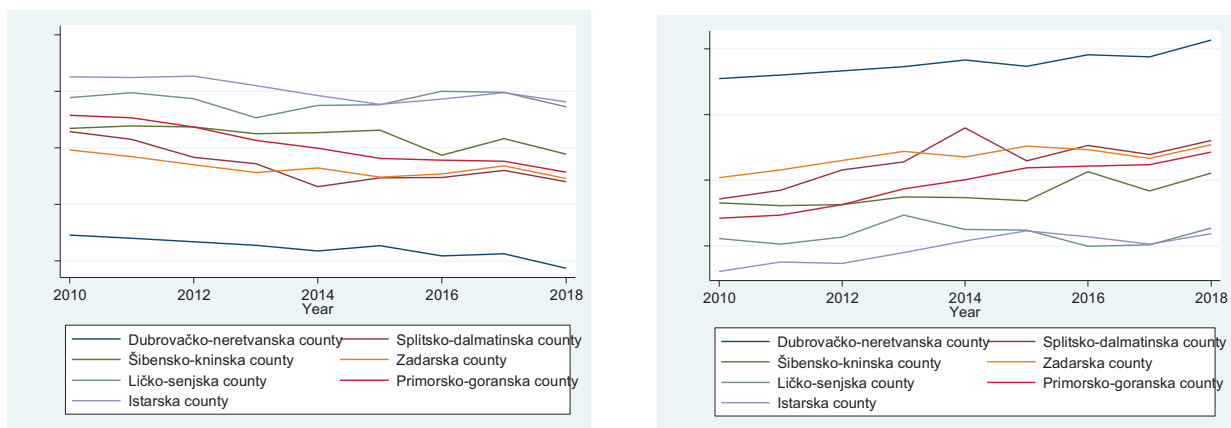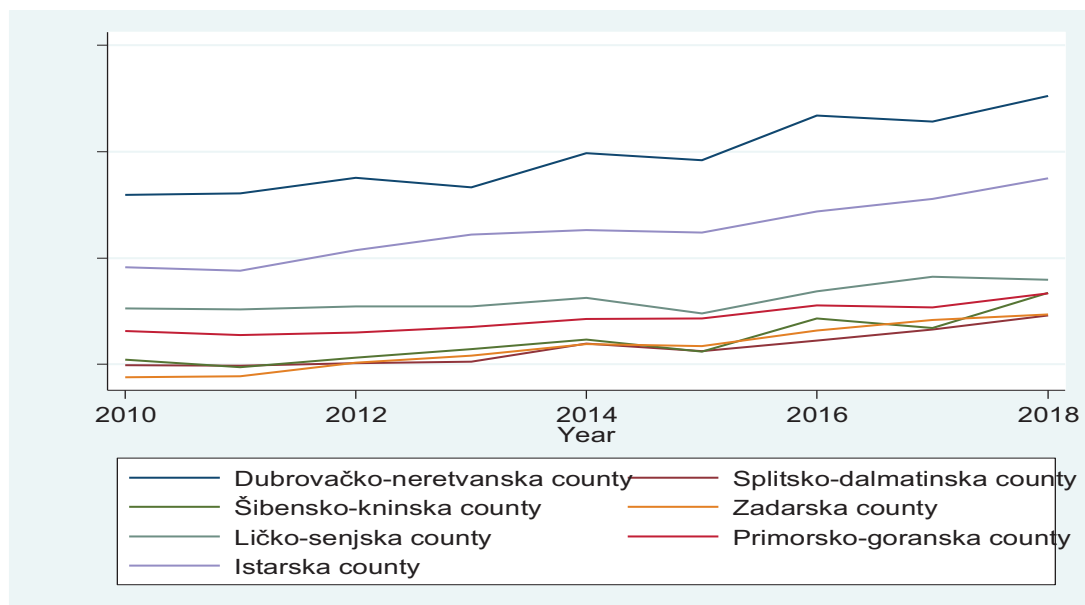

Source: Authors' calculation

Figure 3: The share of Agriculture, forestry and fishing and Manufacturing employment (left) and Manufacturing sector employment (right) in total employment
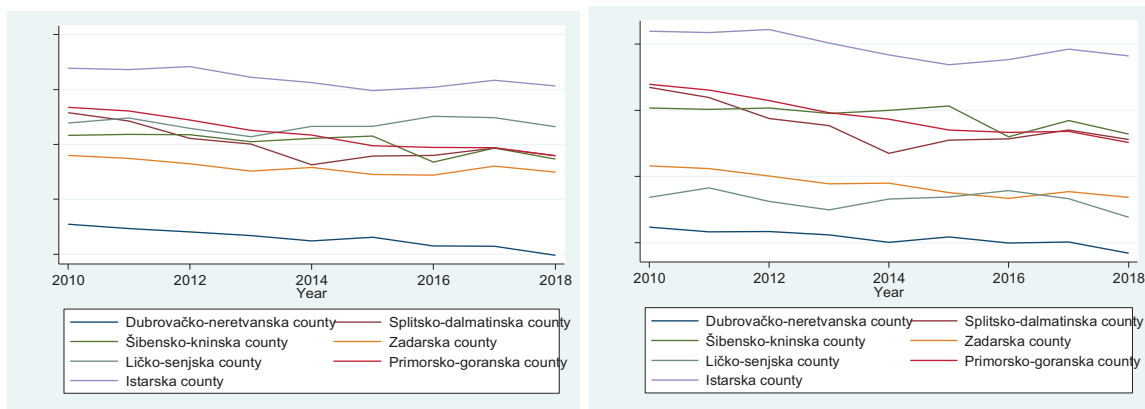
Source: Authors' calculation

Table 1 shows summary statistics of the variables. As can be seen from Table 2, the number of observations is 63, which means that the database is balanced. Regarding the variable NIGHTS, it can be noted that the maximum was recorded in 2018 in Istarska County with 26 178 763, while the minimum was recorded in 2010 in Ličko-senjska County (1 618 941). The maximum share of employment in the non-tradable sector (90.66%) and the minimum share of employment in the tradable sector (9.34%) was recorded in Dubrovačko-neretvanska County in 2018.

Figure 4: The share of Accommodation and food service activities employment in total employment

Source: Authors' calculation

In terms of industry and manufacturing, the average is 14.76% and 12.25% respectively, the maximum is 22.09% and 21.10% (Istarska County in 2012), while the minimum is 4.91% and 4.20% (Dubrovačko-neretvanska County in 2018). For accommodation and food service activities, the average is 8.43%, the maximum is 17.63% (Dubrovačko-neretvanska County in 2018) and the minimum is 4.40% (Zadarska County in 2010).

Table 1: Summary statistics

	Mean	Std. Dev.	Min	Max	N
NIGHTS	9645735	6274592.562	1618941	26178763	63
TRAD	19.78%	4.44%	9.34%	26.34%	63
NONTRAD	80.20%	4.46%	73.06%	90.66%	63
IND	14.76%	4.22%	4.91%	22.09%	63
MANUF	12.25%	4.63%	4.20%	21.10%	63
TOURISM	8.43%	3.34%	4.40%	17.63%	63

Source: Author's calculation

Further analysis was oriented to testing Granger causality between night and share of employment in total employment in tradable and non-tradable sector. In order to solve the problem of non-stationarity of variables logarithmic transformation was applied and unit root test was conducted. Hadri LM test for stationarity in heterogeneous panel data was performed (Hadri, 2000). The results are given in table 2 and it can be seen that panel does not contain unit root meaning that variables are stationary. Therefore Granger-causality test can be performed.

Table 2: Unit root test results

Variable	LM test
NIGHTS	11.0587***
TRAD	8.4600***
NONTRAD	7.9908***

*** $p<0,001$
Source: Author's calculation

The research results regarding Granger causality are given in Table 3. It can be observed that nights do Granger-cause the share of tradable sector and the share of non-tradable sector employment in total employment which is in line with theoretical predictions of Dutch disease indicators. Estimated parameters are statistically significant at the level of 1%. Therefore, the existence of causality from night to the employment shares indicates resource movement effect which is a sign of Dutch disease. Regarding results of the causality from employment shares to nights it can be observed that employment shares do not Granger cause nights so there is no bidirectional causality. Namely, estimated parameters are statistically insignificant. Similar results are also obtained when tourist arrivals are applied in the model instead of nights (in appendix). Additionally, scatter diagrams available in appendix of this paper also indicate the existence of resources movement effect for all counties except Ličko-senjska.

Table 3: Granger non-causality test results

Direction of causality	Zbar tilde
TRAD → NIGHTS	0.1671
NIGHTS → TRAD	12.4399 ***
NONTRAD → NIGHTS	-0.2070
NIGHTS → NONTRAD	8.1101***

*** $p<0,001$
Source: Author's calculation

In conclusion, graphical representations of the data as well as the results of Granger causality test have confirmed that resource movement effect which is a sign of Dutch Disease can be observable in coastal part of Croatia. Namely, tourism as a booming sector increases demand for labor, leading to an increase in employment in non-tradable sector and to a decrease in employment in the tradable sector. This is especially observable in Dubrovačko-neretvanska, Splitsko-dalmatinska and Primorsko-goranska counties. This result confirms the result of Tuncay and Özcan (2020), who confirmed the existence of Dutch Disease in Croatia.

5. Conclusion

In this paper, the signs of Dutch Disease in Croatia were analysed at the county level for the period 2010-2018, when Adriatic Croatia experienced a tourism boom. The importance of Dutch Disease stems from the possible consequences for the national economy: currency appreciation, lower manufacturing growth rates, artificially high real wages and resource allocation. Indeed, one of the effects of Dutch Disease is the resource movement effect, which reallocates labour from the lagging to the booming sector (direct deindustrialisation) and from the lagging to the non-trading sector (indirect deindustrialisation). Thus, there is a risk of reallocation of resources from the tradable to the non-tradable sector, leading to a shortage of quality resources (skilled labour) in the tradable sector and hampering economic growth and development.

This paper has shown that there is a sign of a Dutch Disease in the coastal part of Croatia. Namely, graphical representations of the data and the results of Granger causality test have indicated signs of Dutch Disease in context of resource movement effect. Specifically, tourism as a booming sector increases demand for labor, leading to a movement of labor from tradable sector to non-tradable sector. The effect of the resource reallocation can be observed in all counties, but especially in Dubrovačko-neretvanska, Splitsko-dalmatinska and Primorsko-goranska counties, where the share of employment in the non-tradable sector has increased the most, while the share of employment in the tradable sector has decreased. In addition, these three counties have also experienced the largest decline in the share of employment in agriculture, forestry and fishing, and manufacturing in total employment. Nevertheless, Primorsko-goranska County (26.63%) recorded the second slowest growth in employment in accommodation and food services compared to Splitsko-dalmatinska County, which increased its share of employment by 50.23%. The largest growth was recorded in Zadarska County, with an increase of 90.59% in the analysed period.

These results indicate that it is necessary to rethink the economic policy of these counties, but also of Croatia as a whole. Indeed, the boom of the tourism sector can hinder economic growth by adversely affecting human capital and limiting the development of other industries. Therefore, the government should respond and use economic policy to improve the business climate for the manufacturing sector in order to increase its competitiveness. Also, the establishment of Special Reserve Fund, financed by the booming sector (tourism) can generate resources that can be used to finance investment in physical infrastructure, education and innovation that can generate higher productivity and lead to economic growth.

Finally, considering the recommendations for future research, emphasis should be placed on expanding research on other signs of Dutch Disease (for example analysing level of wages) on the county level and including all Croatian counties in the analyses which will provide data series for more profound analysis. This could contribute to a better understanding of Dutch Disease effects. In addition, due to the COVID -19 pandemic, future research should focus on

the ability of counties in Croatia to recover quickly from the current economic difficulties. Finally, as the main limitation of the research is data availability, databases at the county level should be improved and then more in-depth econometric and statistical methods can be applied.

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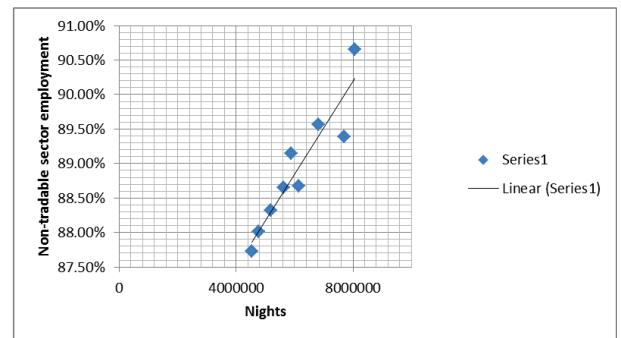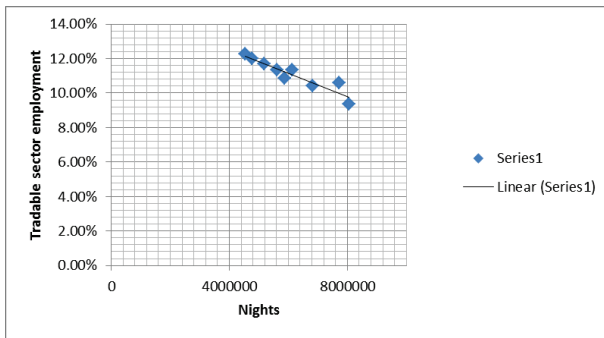
Appendix 1: Granger non-causality test results

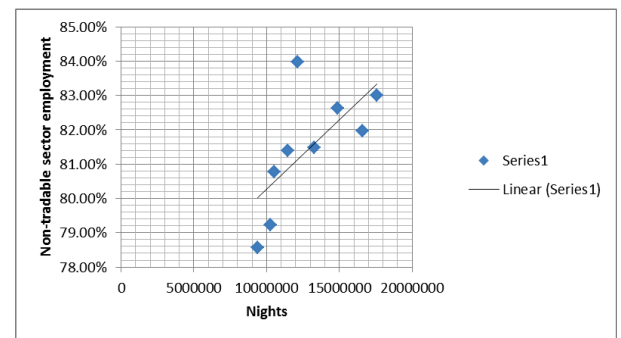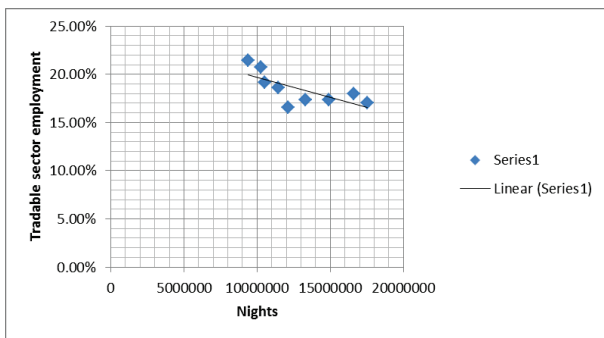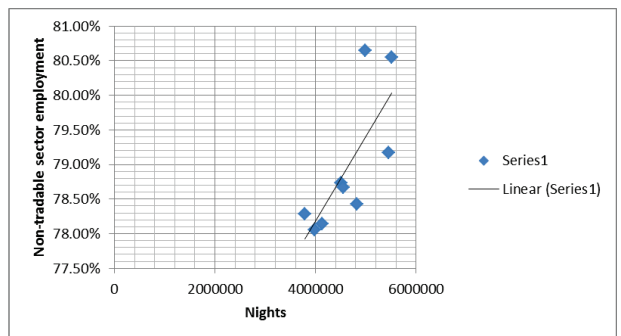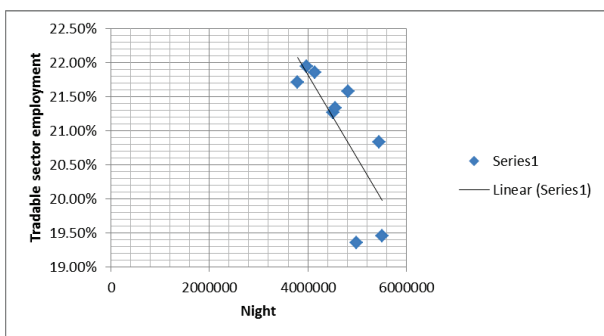| Direction of causality	Zbar tilde
TRAD → ARRIVALS	0.6236
ARRIVALS → TRAD	4.3228 ***
NONTRAD → ARRIVALS	0.2182
ARRIVALS → NONTRAD	3.6662 ***

*** p<0,001

Source: author's calculation

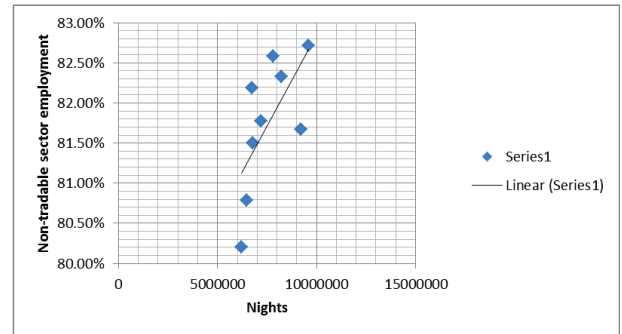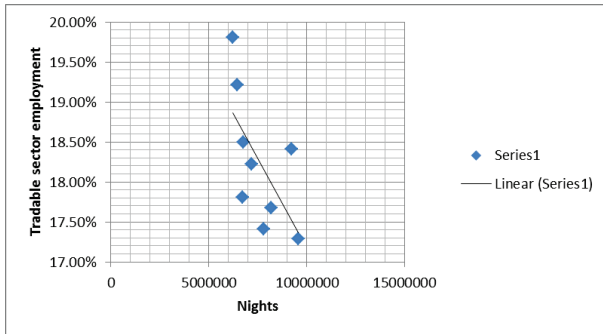**Appendix 2:** Scatter diagrams – nights and tradable and non-tradable sector employment share in total employment
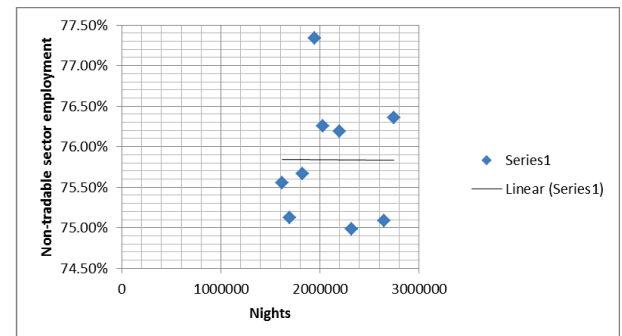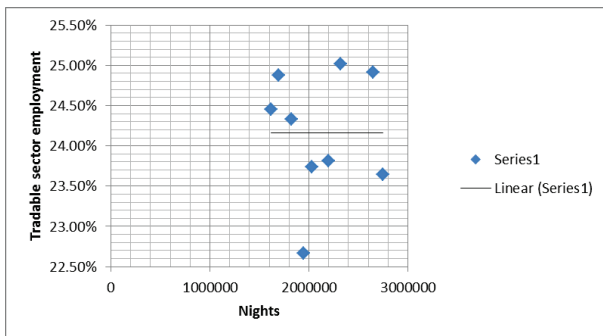

Dubrovačko-neretvanska county
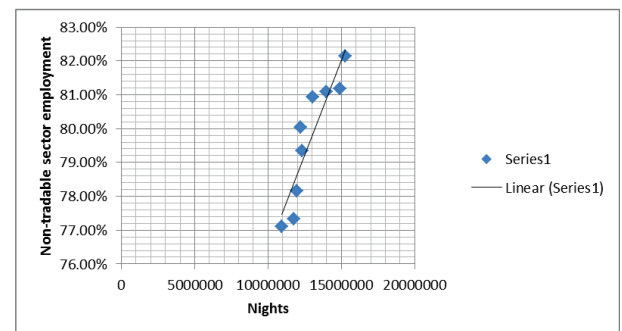

Splitsko-dalmatinska county
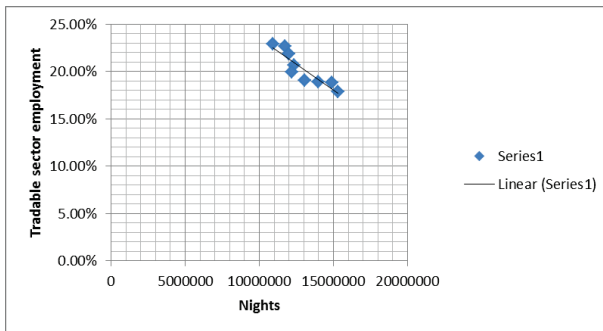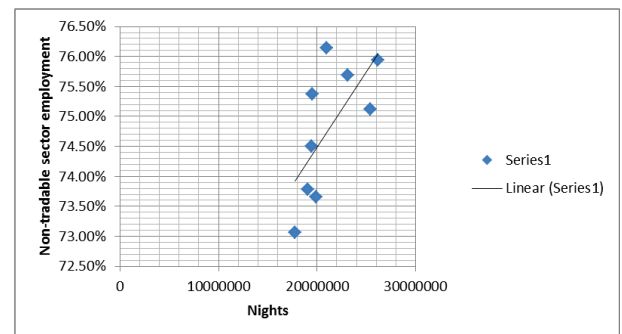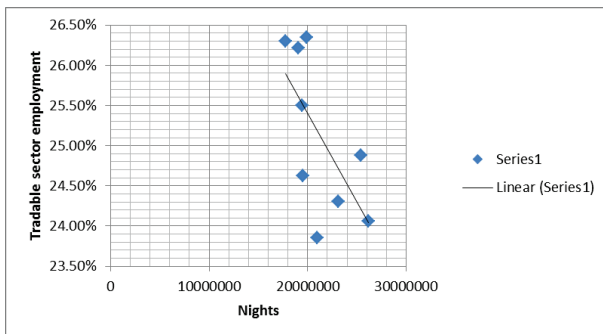

Šibensko-kninska county

Zadarska county

Ličko-senjska county

Primorsko-goranska county

Istarska county

Source: Author's calculation

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TARGET COMPANY'S EMPLOYEES – WHAT CHANGES AFTER A TAKEOVER?

ABSTRACT

Takeovers change involved companies and their multiple effects have been studied for decades. However, this paper is focused solely on employees of target companies since managers and scientists should pay more attention to this takeover effect. The research analyses whether managers have put an effort into appropriately and in timely manner informing employees about forthcoming takeover. Further, the goal is to detect employees' general attitude toward the takeover and their job satisfaction analysed though job various segments. Additionally, in order to indirectly measure strength of employees' emotions towards the takeover and a current job in general, employees have been asked to state whether they plan to change their employer in the next year or two.
Case study methodology has been used to analyse the impact of a takeover on employees of two Croatian target companies. Due to sensitivity of the situation and the fact that this type of study on Croatian companies is rare, a precondition to gather data was to keep companies' identities hidden. Both companies belong to the same sector according to statistical classification of economic activities, they have a different acquirer and these companies are not related to each other. Data obtained from employees of both companies have been gathered during 2019 and 2020 via survey few months after respective takeovers.
Acquired results indicate that in both takeovers a significant portion of employees have not received a formal notice about probable or ongoing acquisition process (18.2% of employees in company X and 27% in company Y). While attitude on 13 different job aspects varies as expected, in both companies employees are mostly indifferent or have negative attitude towards respective takeovers. Further, almost 30% (29.1%) of employees in company X stated that they plan to change employer, while in company Y this portion is 18.9%.

Keywords: *Takeover, Employees, Target Company, Job Satisfaction, Case Study.*

1. Introduction

For decades takeovers[1] have been capturing scientific attention and it is almost a cliché to talk about growing number and value of M&As while at the same time many of them fail to succeed. However, since there are various perspectives[2] how to study takeovers and their consequences, there are still segments of this issue that can be further analysed. In that sense, this paper focuses solely on the impact of takeovers on employees having in mind that it is impossible to neglect interdependence between various aspects of business. In other words, although, for example, takeovers affect employees' productivity, which is directly related to profitability, presented research path is not followed here, yet the focus is on so-called human side of takeovers. However, there are numerous issues related to impacts of M&A on employees and just the obvious ones and most often studied will be mentioned here.

During takeover as a form of restructuring company's resources are reallocated and this creative destruction often implies changes in number of employees, their wages as well as the optimal number of employees. After a takeover, an optimal number of employees is often lower than before when involved companies were separate entities and this is one of the reasons for cutting down number of employees. However, while heading towards this optimal level it is important to balance between costs caused by quick adjustment and costs caused by doing business out of optimal level of employment (Conyon et al., 2002a, 35). Even though the issue of change of employment level is not thoroughly addressed in this paper, there are some aspects of the theme that should be mentioned while analysing impact of takeovers on employees. In that sense takeovers are often seen as a way to impose new work contracts and working conditions which are less favourable for employees, yet it depends how managers see employees - as a cost that should be minimized or as an asset that's should be developed (Cascio, 2003).

Layoffs and lower wages are most often perceived as negative consequences of takeovers but working conditions can be changed in many different ways. For example, being demoted and assigned less important/interesting function also has its consequences. In other words, changes resulting from a takeover affect employees in many different ways. Beside tangible, easily measurable effects (e.g. number of employees, wage, working hours etc.) these changes have various intangible, psychological effects on employees' moral, motivation, loyalty, stress level and consequently on their behaviour. This human side of M&A activities has been capturing attention for many years and one might say that it started when Marks and Mirvis (1985) identified "the merger syndrome" related to stress and uncertainty almost four decades ago. Ever since, researchers study numerous segments of this complex issue combining psychology, sociology and economics while analysing effects of takeovers on employees. In that sense, Seo and Hill (2005, 425) identified and analysed six theories (anxiety theory, social identity theory, acculturation theory, role conflict theory, job characteristics theory, and organizational justice theory) that explain problems in managing the organizational change process that are related to M&A. Their work makes an excellent starting point for research on

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[1] By OECD definition, a takeover is an acquisition of control of one company by another or occasionally by an individual or group of investors and it may be complete or partial and may not necessarily involve merging the operations of the acquired and acquiring firms. In this sense, in theoretical part of the paper term takeover is used as a general term substituting a merger or an acquisition (M&A), while in an empirical part of the paper it denotes acquisition of a target company. (Takeover, Glossary of Industrial Organisation Economics and Competition Law, OECD).

[2] Larsson and Finkelstein (1999, 3) distinguish five different approaches depending of researcher's primary interest – strategic management, economics, financial expert, organizational and human resource management approach.

M&A integration process since it systematizes possible sources of problems, predicts outcomes and relates prescriptions how to prevent these problems all observed from perspective of six theories. Sarala et al. (2019, 308) go even further and beside a comprehensive literature review they offer interesting possible future research paths hoping to encourage cross-fertilization between practice research and studies on the human side of global M&As.[3]

Variety of themes related to human side of takeovers found within an existing theoretical framework can be analysed from different angles. For example, besides detecting the impact of M&A on productivity and wages (e.g. Conyon et al., 2002b; Siegel & Simons, 2008; Kubo and Saito, 2012 etc.) analysis can also include domestic vs cross-border perspective (Bellak, 2004) and whether involved companies are manufacturing or non-manufacturing (Lehto & Böckerman, 2008). Aspect of temporality is also interesting. Whittle (2002, 4) for example used ethnographic approach and conducted in-depth interviews with employees from acquired organization during the 18-24 month post-integration period and in his work he referred to studies showing there was still residual anger at being taken over even as long as twenty years after a merger. Guerrero (2008, 222) used a single questionnaire administered repeatedly over a five-year period to the employees of three different firms. On the other hand, Bebenroth and Ismail (2014, 38) administered the same survey on three occasions over one year while analysing the difference in perception between Millennials and senior employers in cross-border takeovers.[4]

Presented issues are just a fragment of effects of takeovers on employees and present possible research paths. There are various combinations of aspects that can be analysed and over the years findings in this field have been mainly related to a particular segment of the respective issue. In that manner, this paper is focused on communication about the takeover in a minor extent and employees' attitudes and satisfaction in a greater extent. Case study methodology has been used to analyse impact of a takeover on employees of two Croatian target companies. Performed survey analysis has been structured within a frame of role conflict, job characteristics and organizational justice theory. More precisely, the research analyses whether managers have put an effort into appropriately and in timely manner informing employees about forthcoming takeover. Further, the goal is to detect employees' general attitude toward the takeover and their job satisfaction which has been analysed though various segments of their job. Additionally, in order to indirectly measure strength of employees' emotions towards the takeover and current job in general, employees have been asked to state whether they plan to change their employer in the next year or two.

Although this research is a case study analysis focused on employees of just two target companies, there are several issues that arise from obtained results and make distinctive features of this paper. First, it seems that it is not enough just to directly analyse employees' satisfaction or attitude. Namely, results show that although general attitude towards takeover is neutral[5] a significant portion of respondents plan to change their employer so it is necessary to deepen the analysis on attitude towards takeover. In other words, obtained results emphasize the importance of finding an alternative, indirect measure of attitude on takeovers since the urge to change the employer reflects a strong need to react on changes caused by

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[3] An extensive review of research on post-merger integration organized around strategic integration, sociocultural integration, and experience and learning can be found in Graebner et al. (2017).
[4] Just to get the idea how diverse these studies can be there is even data on emotional support from employees' spouse during takeover (Whittle, 2002, 71).
[5] In terms of mean, median and mode value.

takeover.[6] Second, this analysis used a wider set of job characteristics including variables that are usually neglected but influence job satisfaction as well. For example, vacation planning is not the first thing which comes to our mind when talking about the impact of M&A on employees, but its significance is raising, especially in context of new flexible working models and growing awareness of importance of personal well-being that reflects on work. Third, obtained results on job satisfaction indicate that it is necessary to distinguish between job segments that are completely personal and related to an individual and those that are shared with colleagues. These results shed a new light on future job satisfaction analysis. Further, this research emphasizes the necessity of raising awareness of companies involved in takeovers about the importance of research of human side of takeovers so these companies carry out analysis on their own or at least allow external in-depth analysis in scientific purposes. More and more companies are aware how complex is this issue, but still seem to hesitate when allowing even fully anonymous research on their employees, even though they can benefit from results as well. Finally, this paper adds to the field by investigating takeover effects on employees in a country with under investigated M&A activity, especially when it comes to human issues. Although it might seem redundant to emphasize country of origin of the sample, authors of this paper had severe problems obtaining anonymized and generalized data. Namely, while at the same time research on impact of M&A on employee has grown and developed in a way which, for example, involve distinction between different types of justice that employees feel (Melkonian, 2011, 810), or offer a framework for workplace recovery after organizational transition that relates to the feeling of pain that employees feel after a change (Marks 2006, p. 388), there are still areas where managers strongly hesitate to allow gathering even perfunctory data. In that sense, raising awareness of possible benefits of in-depth analysis of M&A process is considered beneficial.

2. Method and results

Case study methodology has been used to analyse the impact of a takeover on employees of two Croatian target companies. Due to sensitivity of the situation, a precondition to gather data was to keep companies' identities hidden. Since M&A activities in Croatia do not happen very often, in order to maintain complete anonymity of involved companies it is not possible to reveal industry, company size or the total number of employees. However, both companies belong to the same sector according to statistical classification of economic activities, they have a different acquirer and these companies are not related to each other. Data obtained from employees of both companies have been gathered during 2019 and 2020 via survey written on Croatian language few months after respective takeovers. Following chapters will provide information on the sample, obtained results and related discussion.

2.1. Sample description

The sample includes solely employees of a two target companies (company X and company Y), more precisely 55 employees from company X and 37 from company Y. Women make up the majority with approximately three quarters of the sample in company X (76.4%) and 56.8% in company Y. Age structure reveals that in company X almost 50% (49.1%) of employees are between age 30 and 40, while 21.8% are between age 41 and 50. In company Y most employees (43.2%) are between age 41 and 50, while 27% belong to a younger decade group. Regarding their education, in company X more than half (56.4%) employees

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[6] Here it is important to have in mind that Croatian labour market is not as flexible as for instance American (where this urge to change employer is likely to be related to other factors besides takeover) yet it is rather stagnant.

have finished graduate study, 23.6% have a four-year secondary school education and 10.9% finished undergraduate study. One employee has finished a three-year secondary school education[7] while four of them have some form of postgraduate diploma. Education structure in company Y is more uniform with equal percentage of employees with finished graduate study and a four year secondary school education (43.2%) and five employees with finished undergraduate study.

Regarding employees' position in company hierarchy, in company X 80% of the sample consists of employees who are at the lowest level of the hierarchy and just one employee belonging to higher-level managers. Company Y, on the other hand, has a more balanced structure with approximately 60% employees belonging to the lowest hierarchy level and just over 24% from the middle hierarchy level.

2.2. Results and discussion

As stated earlier, aim of the research is to provide an insight into four different segments related to takeover effects on target company's employees. In that manner, this section covers results and discussion on each of these themes and it is divided into three following segments. First segment deals with the communication issue i.e. informing employees about the takeover. Second segment elaborates attitude on respective takeovers and job satisfaction while the third segment relates to the theme of employee turnover.

2.2.1. Information about the takeover

Communication is important in every company, but it is extremely important when it comes to informing employees during mergers and acquisitions. Therefore, this research reflects on the issue of formal and informal information about respective takeovers. The idea was to see: a) whether management team in charge for integration period found it important that each employee gets a formal notice about the takeover and b) how did employees receive the official information about M&A. Additionally, since the issue of rumours accompanying takeovers process is well known in literature when it comes to theme of communication in M&A, employees have been asked questions about informal news on takeover as well. In other words, goal was to find out whether team leading the takeover saw providing formal information important to avoid rumours (Georgiades and Georgiades, 2014, 108).

Results presented in Table 1 indicate that in company X 18.2% of employees have not received a formal notice about probable or ongoing acquisition process, while for company Y these results are even more alarming since 27% of employees have not been formally notified. On the other hand, as expected, 89.1% i.e. 86.5% (49 employees in company X and 32 employees in company Y) gained this information from informal communication as well and majority of employees in both companies got the information about the takeover from their colleagues.

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[7] Secondary school education in Croatia has programs lasting for three or four years and those lasting for three years are solely vocational programs.

Table 1: Information about the takeover

	Formal notice			Informal notice	
Mode of information	**Company X %**	**Company Y %**	**Source of information**	**Company X %**	**Company Y %**
In person by superiors	51.1	81.5	Colleagues	71.4	75
Via e-mail	33.3	7.4	Former colleagues	6.1	9.4
In written	8.9	3.7	Current or former business associates /clients	6.1	6.3
Other	6.7	7.4	Other people from employee's private	10.2	3
			Other	6.1	6.3
Total (N$_X$=45; N$_Y$=27)	100	100	Total (N$_X$=49; N$_Y$=32)	100	100

Source: Authors

Takeovers inevitably cause change and change is stressful even when it is accompanied with all necessary information. Therefore, communication is important, especially in integration period since "it reduces employee fears and concerns while it increases employee motivation, cultural integration, and trust" (Sarala et al., 2019, 316). Yet, concerns about appropriate and timely communication with and between employees should be constantly in management's focus. However, employees' well-being is not the solely issue while discussing the importance of communication - indirect impact of communication on success of M&A deals is often found more important. Namely, studies show there are strong relationships found between level of employee knowledge, communication and success of the acquisition (e.g. Harrison and Farrell, 2007, 199) and Bruner (2004, 903) even suggests that companies which gave priority to communication were 13% more likely than average to have successful deals.

Although it seems rather simple to learn from real life examples and scientific results about the importance of communication, here obtained results indicate that managers leading the integration process have not found it important to provide each employee with a formal information about the takeover. Neglecting this important segment of integration process allowed or encouraged rumours about the takeovers. Possible explanation for this kind of behaviour can be found in a fact that the acquirers had previous experience in takeovers and their communication strategy obviously haven't harmed the expected success of M&A processes. Along with rumours inside the companies,[8] it would be interesting to further investigate the impact of rumours on the image of the respective takeover processes since significant portion of employees in both companies gained information about the takeover from individuals outside the company. Further, beside communication about the takeover itself, there are numerous issues that need to be communicated before and after the integration period and delicate process of sharing information is becoming even more complex, especially if we take into consideration advances in communication technology that create new phenomena, such as social media, multicultural virtual teams, and distance work (Sarala

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[8] 71.4% of employees in company X and 75% in company Y got information about the acquisition from their colleagues.

et al., 2019, 313). Further, Sarala et al. (2019, 318) emphasize another important perspective - how communication is interpreted across different languages and cultures and the issue of "unintended" communication. Angwin et al. (2016, 2389), along with an extensive literature review on communication issue in M&A process, add to the field by exploring the link between the process of communication (captured by its timing, content and richness) and mergers' outcomes (captured by employee commitment and mergers' survival). Therefore, there are many directions for analysing communication in takeovers and it would be interesting to deepen this analysis[9] in Croatian companies especially when, to the authors' best knowledge beside the work of Grgić et al. (2017), this is the only paper dealing with respective theme.[10]

2.2.2. Attitude towards the takeover and job satisfaction

Issue of communication that has been narrowly presented in the previous section serves as a supporting segment to the core of the research presented here. Namely, attitude towards the takeover and job satisfaction form a backbone of the paper and they are perceived through the prism of role conflict, job characteristics and organizational justice theory. Role conflict theory refers to ambiguous and conflicting roles employees face due to M&A integration process. Changes during this process involve disrupting the existing cultural, structural, and job arrangements and creating new arrangements and consequently create stress, which may lead to lower work motivation and higher job dissatisfaction (Seo and Hill, 2005, 430). Job characteristics theory in its basic form suggests that core job characteristics (skill variety, task identity, task significance, task autonomy, and task feedback) influence motivation and job satisfaction (Seo and Hill, 2005, 431). In align with Seo and Hill (2005), a broader view of job characteristics has been adopted in a way to include additional dimensions of the work environment, such as following nine aspects that have been included in the questionnaire: workload, complexity of work tasks, clarity of instructions and rules, working hours, vacation planning, interpersonal relationships among employees, additional training, workplace location and workplace conditions (equipment, sanitation and hygiene conditions etc.). Additional four aspects of the job have been tested as well and they reflect standpoint expressed in organization justice theory. Namely, position in the corporate hierarchy, monthly salary, other forms of compensation and promotion prospects have been selected to test for perception of fair treatment of surviving employees. These thirteen elements have been analysed in observed target companies. Namely, respondents had to express their satisfaction with each of the thirteen elements and then estimate the impact of the takeover on these respective elements.[11] Additionally, their general attitude towards respective takeover has

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[9] Authors also performed Mann-Whitney test and it showed that attitude on respective takeover does not differ depending on the fact whether employees have received a formal notice on takeover in both companies (results obtained by SPSS can be provided at request). Even though obtained results do mitigate the importance of a proper and timely communication, yet they call for further deeper and more comprehensive analysis.

[10] Grgić et al. (2017, 21) performed survey analysis on 100 employees from companies in Belgium, Czech Republic, France, Hungary and Croatia that went through the process of M&A investigating how did the management attitude towards M&A and the way they presented it affect employees' attitude towards the takeover. Beside this paper there are other papers dealing with intangible (and not easily measurable) effects of M&A in Croatia. However, they have different focus. For example Tomašević Lišanin, Jakovčević and Palić (2004) gave attention to best practice in corporate communications directed toward different groups of stakeholders including company's shareholders, legal authorities, own employees, clients and media. Filipović, Podrug, and Kandžija (2017) focused on the impact of strategy, organizational structure, and corporate culture in the change process in target company. Kaštelan Mrak, Sokolić and Vretenar (2012) analysed how financial data, employment and productivity changed in Croatian target companies after cross-border M&A.

[11] However, these job elements are often used to analyse employees' motivation. In this context, they can be grouped as tangible and intangible motivation factors (Erceg and Šuljug, 2016, 89).

been analysed by using 5-category Likert scale. Employees had to choose between 1 denoting very negative and 5 denoting very positive attitude. Statistics on this variable are presented in Table 2 and results indicate that employees are mostly indifferent or have negative attitude towards this takeover (only 18.1% in company X i.e. 13.5% in company Y have positive or very positive attitude).

Table 2: Attitude towards the takeover

Statistics	Company X			Company Y		
	Values	Likert scale	% of employees	Values	Likert scale	% of employees
N Valid	55	1	21,8	37	1	2.7
Missing	0	2	16,4	0	2	10.8
Mean	2,6182	3	43,6	2.9730	3	73
Median	3	4	14,5	3	4	13.5
Mode	3	5	3,6	3	5	0
Std. deviation	1,09698	Total	100	0,6003	Total	100
Variance	1,203			0,3506		
Minimum	1			1		
Maximum	5			4		

Source: Authors

In order to gain addition information about the target companies' employees, the questionnaire included segment referring to **job satisfaction** and employees had to express their attitude on thirteen mentioned aspects of their job using 5-category Likert scale where 1 denotes very unsatisfied and 5 denotes very satisfied.[12] As presented in Table 3 job satisfaction differs among selected aspects of a job. To a larger extent employees of both companies are unsatisfied with promotion prospects and monthly salary. Additionally, employees in target company X were mainly unsatisfied with additional training possibilities and their position in corporate hierarchy, while in target company Y employees felt this way about other forms of compensations and clarity of instructions and rules. In both companies employees are mainly satisfied with workplace location, workplace conditions and working hours. However, employees in company X are also mainly satisfied with compensations (other than salary) while in company Y vacation planning possibilities were regarded as favourable.

Table 3: Job satisfaction

	Very unsatisfied (1)	Unsatisfied (2)	Neutral (3)	Satisfied (4)	Very satisfied (5)	Sum
Workload	14.5%	9.1%	40.0%	23.6%	12.7%	100%
	2.7%	10.8%	27%	51.4%	8.1%	100%
Complexity of work tasks	9.1%	10.9%	45.5%	21.8%	12.7%	100%
	2.7%	13.5%	29.7%	45.9%	8.1%	100%
Clarity of instructions and rules	12.7%	14.5%	18.2%	36.4%	18.2%	100%
	2.7%	18.9%	37.8%	29.7%	10.8%	100%
Position in the corporate hierarchy	16.4%	25.5%	27.3%	23.6%	7.3%	100%
	2.7%	13.5%	32.4%	35.1%	16.2%	100%

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[12] Cronbach's alpha, as a measure of internal consistency, is 0,9 for company X and 0,923 for company Y, indicating a good reliability.

	Very unsatisfied (1)	Unsatisfied (2)	Neutral (3)	Satisfied (4)	Very satisfied (5)	Sum
Working hours	0.0%	1.8%	34.5%	43.6%	20.0%	100%
	2.7%	8.1%	13.5%	27%	48.6%	100%
Monthly salary	23.6%	25.5%	32.7%	16.4%	1.8%	100%
	5.4%	18.9%	37.8%	29.7%	8.1%	100%
Other forms of compensation	5.5%	9.1%	20.0%	40.0%	25.5%	100%
	27%	24.3%	37.8%	10.8%	0%	100%
Vacation planning	9.1%	10.9%	23.6%	34.5%	21.8%	100%
	2.7%	5.4%	27%	16.2%	48.6%	100%
Interpersonal relationships among employees	5.5%	9.1%	29.1%	41.8%	14.5%	100%
	2.7%	5.4%	27%	35.1%	29.7%	100%
Promotion prospects	25.5%	25.5%	25.5%	16.4%	7.3%	100%
	5.4%	10.8%	40.5%	32.4%	10.8%	100%
Additional training	27.3%	21.8%	25.5%	16.4%	9.1%	100%
	2.7%	5.4%	43.2%	35.1%	13.5%	100%
Workplace location	7.3%	3.6%	20.0%	20.0%	49.1%	100%
	5.4%	2.7%	24.3%	18.9%	48.6%	100%
Workplace conditions	5.5%	5.5%	20.0%	40.0%	29.1%	100%
	2.7%	5.4%	27%	24.3%	40.5%	100%

Note: For each job characteristic first row refers to data for company X and the second row refers to data for company Y.

Source: Authors

Same aspects of a job have been analysed in the context of the **impact of takeover**. In that sense employees had to estimate the strength of a takeover impact on each segment of a job using Likert scale where 1 denotes strong negative and 5 denotes strong positive impact. However, they could also choose X denoting they are not able to estimate the impact of takeover on a particular job segment.

**Figure 1:** Impact of a takeover on different aspects of a job – company X
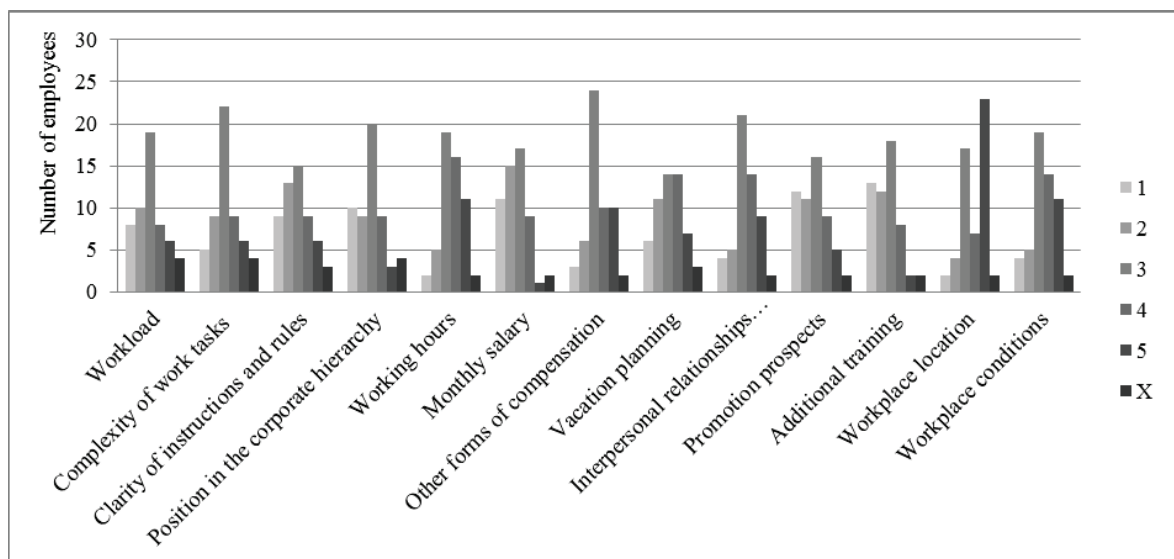
Source: Authors

As presented in Figure 1, for each job segment, except for workplace location mostly perceived as improved, majority of respondents stated that a takeover had a neutral impact. When analysing opinion of respondents who did not find the takeover impact neutral, more

employees have positive impression about the effect of the takeover on working hours, workplace conditions and interpersonal relationships among employees. On the other hand, negative impact is emphasized when it comes to salary, possibility to get additional training, promotion prospects, clarity of instructions and rules as well as position in the corporate hierarchy.

Figure 2: Impact of a takeover on different aspects of a job – company Y
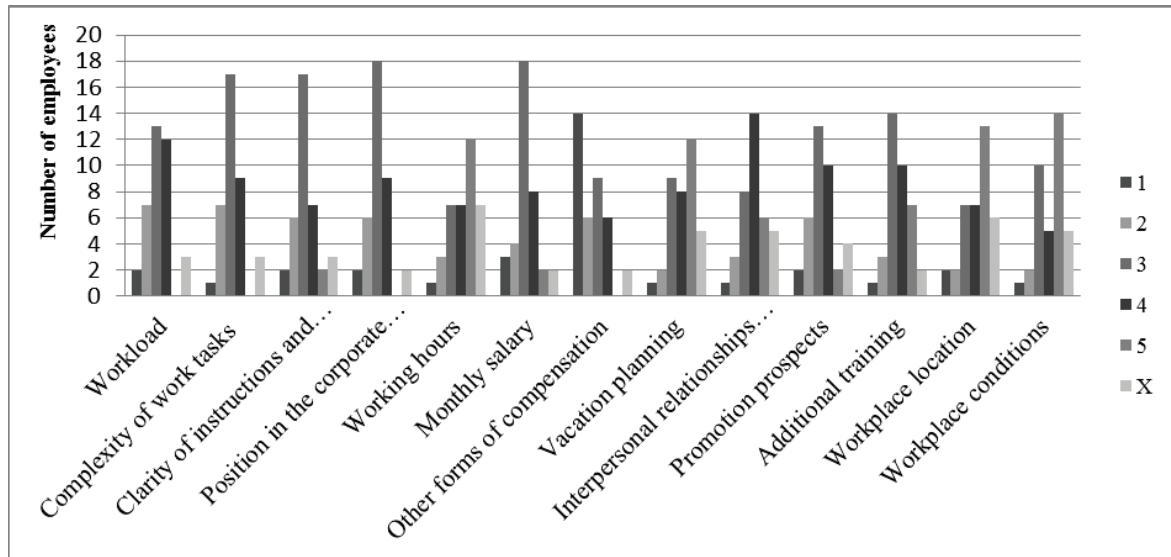
Source: Authors

Unlike in company X where majority of employees stated that the takeover had neutral impact on twelve out of thirteen job characteristics, in company Y employees expressed less ambiguous opinions. As presented in Figure 2, 38.8% of employees stated that the takeover had strong negative impact on other forms of compensations. However, at the same time they observed improvements regarding working hours, vacation planning, workplace location and conditions.

When all obtained results are observed together, organizational justice theory seems to explain why most employees are indifferent or have negative attitude towards respective takeovers. Namely, it seems that the takeover had more negative effect on job characteristics that are very personal such as salary, other forms of compensations, possibility to get additional training or promotion while majority of employees perceived positive effect on job characteristics that are shared with other colleagues such as working hours, work place conditions and interpersonal relationships among employees. Hence, it is understandable that significant portion of employees experienced a feeling that they have not been treated fairly when it comes to their own situation, but when they look at the collective in general they see some improvements. However, we should be careful while discussing justice since justice is a three-dimensional concept and includes distributive (defined as the fairness of outcome distributions), procedural (refers to the fairness of decision procedures) and interactional justice (focuses on the fairness of interpersonal treatment received during the enactment of organizational decisions) (Melkonian, Monin, and Noorderhaven, 2011, 810). Additionally, it would be interesting to incorporate the sense of loss that acquired employees might feel (Hassan, 2010, 36) since adapting to new working environment affects achieving organizational goals. In that sense, presented results should be considered as a starting point for future in depth analysis.

2.2.3. Changing jobs

Although former section covered employees' attitudes and job satisfaction issues, in order to study them more deeply an indirect measure has been applied as well. In other words, in order to indirectly measure strength of their negative emotions towards takeover and current job in general, employees have been asked to state whether they plan to change their employer and what are the most significant reasons for such decision. Almost 30% (29.1%) of employees in company X and 18.9% in company Y stated that they plan to change the employer during current and next year and characteristics of these employees follow the same distribution as the one of the whole sample so there are no particularities on that side. However, an insight into the aspects of a job that have been marked as the most significant for this decision reveals that in company X position in the corporate hierarchy is the least important (average grade 3.6) while clarity of instructions and rules (average grade 4.9) as well as interpersonal relationships among employees (average grade 4.6) are the most significant. At the same time, in company Y working hours (average grade 3.95), monthly salary (average grade 3.86) and vacation planning (average grade 3.86) moderately stand out in terms of their importance, while complexity of work tasks is the least important (average grade 3.35) and it is followed by the position in the corporate hierarchy (average grade 3.37).[13]

The urge to change the employer is closely related to attitude towards takeover and job satisfaction.[14] Additionally, high quality of work life is essential for organizations not just to retain existing employees yet to attract new employees (Erceg and Šuljug, 2016, 88). Having that in mind, and taking into account empirical results, complexity of human feelings and behaviour related to takeover process is evident and asks for further attention. In that sense, when it comes to M&A and related uncertainty that negatively affects employees there are possible solutions to this problem. Honest and timely communication in its basic form is mostly[15] perceived as beneficial and there is also a possibility to go a step further and to provide "realistic job preview" so employees would know more about what they could expect after the takeover. Further, acknowledging and developing employee resilience in the context of mergers and acquisitions could contribute to individual and sustainable organizational performance (Cooke et al., 2020, 6)[16]. However, in order to achieve high level of management's dedication to employees' well-being positive correlation between these efforts and financial results should be more deeply analysed and distributed outside academic circles. Consequently, behavioural[17] due diligence, next to financial, will become a legitimate and inevitable segment of due diligence (Marks and Mirvis, 2011, 162). In other words, while

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[13] Employees had to validate the same 13 aspects of a job using 5-category Liker scale (1 denoting extremely irrelevant and 5 extremely relevant). Additional data can be obtained at request. Before making general conclusion about employees' attitudes and satisfaction it is necessary to stress that reasons that trigger possible employee turnover relate only to those employees that stated they plan to change their employer.

[14] Kruskal Wallis test performed in SPSS revealed that for company X decision to change the employer does not vary depending on attitude toward the takeover, while for company Y same test revealed the opposite. Results can be obtained at request.

[15] Schweiger and DeNisi (1991, 111) in their work present opposite opinions from different authors suggesting that management should avoid communicating realistically with employees during M&A since it might alert competitors or cause employees to leave an organization rather than endure painful changes.

[16] Cooke et al. in the same paper (2020) provide an excellent overview of human resource management issues related to M&A processes.

[17] Probably one of the most known failed M&As is the one of Daimler and Chrysler. Due diligence prior to this M&A surely involved all sorts of tangible aspects but it failed due to neglected human side of the story. Although its failure is usually mentioned in the context of cultural clash, there is more to it than just cultural issues. Therefore, behavioural due diligence with all its aspects should be used to support economic decisions.

dealing with employees organizations should switch from plain HR (human resources) to RH (respect for humanity) at work and remodel human resource system.[18]

3. Conclusion

There is a vast literature on takeover effects when it comes to employee side of the story but due to complexity of the theme, there are still many ways to add to the field of study. In that sense, this paper uses employees' intention to change their employer as an indirect measure of attitude since the urge to change the employer might reflect a strong need to react on changes caused by takeover. Further, authors used a wider set of job characteristics including variables that are usually neglected yet influence job satisfaction as well, such as vacation planning. Additionally, obtained results on job satisfaction indicate that it is necessary to distinguish between job segments that are related to an individual and those that are shared with colleagues. Finally, this paper studies under-investigated effects of takeovers on employees in Croatia.

However, there are several limitations of this study that will be used as a guiding line while forming future analysis on the subject. It is a case study analysis on just two target companies so results are not appropriate to support general conclusions. Further, the sample in company X included just one high level manager so it was not possible to compare impressions about the takeover between hierarchy levels. Additionally, survey analysis has been made few months after the integration and it would be reasonable to expect different results if analysis had been made later after the integration. Also, this study focused more on issues related to job characteristics and organizational justice theory and there is room for improvement when it comes to communication issues. Further, additional enhancements could be made by expanding analysis to include cultural aspect in order to prevent results to be culturally-biased. Finally, this study shares a limitation with numerous similar studies on takeover effects that companies often regard as *l'art pour l'art*. More precisely, it would be much easier to convince companies to participate in in-depth analysis of takeover effects if they saw a correlation between obtained results and financial consequences of measured attitudes and job satisfaction. In that sense, most significant enhancement and a prolific future research path would involve combining emotional effects of takeovers with companies' financial performance.

Altogether, this paper could serve researchers dealing with takeover effects, especially those interested in countries with less fruitful takeover history. Further, companies planning or dealing with takeovers could benefit from obtained results in a way they might help them perceive how complex is a takeover impact on employees. For example, it might show them that even though a takeover can negatively change some job segments these might be different from triggers that cause employee turnover.

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[18] Along with extensive literature review on HR, Cleveland et. al. (2015, 157) offer suggestions on how to improve human resource system.

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A scientific paper

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APPEALS IN PROCEDURES FOR OBTAINING A CONSTRUCTION PERMIT AND A CERTIFICATE OF OCCUPANCY

ABSTRACT

According to the European Commission, the construction industry is a very important part of the overall economy of the European Union. In the EU territory, this sector provides 18 million jobs and contributes to about 9% of the Union's GDP. Accordingly, in order to facilitate the earliest possible start of construction without undue delays, it is important to make the procedure for obtaining a construction permit and an occupancy certificate as efficient as possible. Effective oversight mechanisms also contribute towards this objective. This paper aims to analyse effectiveness and efficiency of the oversight mechanism of appeals as an ordinary remedy specifically in the special administrative procedures for obtaining a construction permit and an occupancy certificate in the Republic of Croatia.
For the purpose of a scientific approach to the researched subject, this paper employs analysis and synthesis as well as inductive and deductive research methods for the theoretical part of the paper. A portion of the results of an empirical research conducted in development of the author's doctoral thesis is also analysed for the purposes of the paper and the analysis employs descriptive statistical methods. In order to gather relevant information for the purposes of the paper, secondary data was requested from the Ministry of Construction and Physical Planning of the Republic of Croatia through an information access request submitted by the author in compliance with provisions of the Right to Access Information Act. In the paper logical and teleological interpretation methods are used. An analysis of overall research results, within concluding considerations, offers recommendations for improvements of the system intended to render future appeals in the procedure for obtaining a construction permit and an occupancy certificate a more effective and more efficient remedy.

Keywords: *appeal, construction permit, occupancy certificate, administrative proceedings.*

1. Introduction

Since their dawn, humans build, tear down, and rebuild to shape their natural environment to their liking. Construction means design development, execution of buildings (under Article 1(1)(10) of the Construction Act (Official Gazette No 153/13, 20/17, 39/19, and 125/19) construction is execution of civil and other works (site preparation, earthworks, structural, installation, and finishing works, placing of construction products, plant or equipment) to build a new structure, or rebuild, maintain or remove an existing one) and professional supervision of construction which must pose no danger to life and limb, environment, nature, other structures and property, or stability of surrounding soil (Radujković & Izetbegović & Nahod, 2008, 8). It is therefore one of fundamental activities in every economy and the society because it requires considerable material assets, provides income for many employees in the sector and

mutually complementary activities while changing the natural environment and affecting the quality of human living. The construction industry is an important part of the overall economy of the European Union. In the EU, this sector directly employs 18 million and generates about 9% of its GDP. It also accounts for Euro 800 billion worth of indirectly related products sourced from other industrial sectors. Therefore, the European Commission aims to help this sector become competitive, efficient, and sustainable. To sustain this industry's significance for economic growth and development, it is important to achieve consistent conduct of administrative procedures for obtaining of construction permits and occupancy certificates through consistent application of all principles by competent administrative bodies. This paper particularly focuses on effective conduct of appeals by the Competent Ministry of Physical Planning, Construction and State Assets (hereinafter the Competent Ministry) as the second-instance body.

This paper aims to test effectiveness of appeal proceedings in the process of issuing of construction permits and occupancy certificates and to examine if the desired improved effectiveness in resolution of appeals in the administrative proceedings has been achieved by the Competent Ministry as the second-instance body. Namely it is pointed out in explanations of provisions of the Final draft of the General Administrative Procedure Act (hereinafter the GAPA) that the provisions are designed to urge the second-instance bodies to decide on merits of the case following appeals in administrative matters – which was rarely done in the past. Since the procedures to obtain construction permits and occupancy certificates are special administrative proceedings, the following affirmative hypothesis is put forward in compliance with the above aim of efficiency: The number of second-instance decisions by the Competent Ministry on merits following appeals against decisions on construction permits or occupancy certificates is greater than the number of cases in which it grants the appeals, revokes the permits or certificates in part or in full or remits the cases to the first instance. Accuracy of the hypothesis and its theoretical basis will be tested using results of empirical research conducted by the author of the paper for the purposes of her doctoral thesis and information provided by the Competent Ministry under information access requests submitted in November 2019 and September 2020.

Construction permits and occupancy certificates are products of special administrative proceedings regulated by special substantive law – the Construction Act (Official Gazette No. 153/13, 20/17, 39/19, and 125/19). It is worth reminding that administrative bodies conduct administrative proceedings where they unilaterally and authoritatively decide on specific rights, obligations, or legal interests of persons in administrative matters. Accordingly, a decision in administrative proceedings stems from interplay of the GAPA and the substantive law (the Construction Act in this instance), other rules and decisions, and the facts to produce a decision referred to in compliance with the GAPA or special legislation. According to the Construction Act, decisions regulating construction and use of a structure are referred to as construction permits and the occupancy certificates, respectively. Since they are generated by application of the GAPA rules, efficiency of the GAPA rules should also be viewed through the lens of issuing of construction permits and occupancy certificates.

2. The right to lodge an appeal as an effective remedy in administrative proceedings

In this part of the paper, the right to appeal is analysed with regard to international, EU and national sources of law that guarantee the same right in the context of the effectiveness/working of this remedy. Namely, according to the Croatian Language Portal, "effective" means fruit bearing, fruitful, working, efficient (Croatian Language Portal,

http://hjp.znanje.hr/index.php?show=search_by_id&id=f19iWhR9) so these words will be treated and interpreted in this paper as synonyms and it is important to point out that the above words are also treated as synonyms in normative documents and case-law examined below. The case law of the Constitutional Court of the Republic of Croatia and the European Court of Human Rights is analysed in an appropriate manner and with regard to relevant examples.

The right to appeal is enshrined in the Croatian legal system as a constitutional right (Constitution of the Republic of Croatia, Official Gazette no. 85/10 – consolidated text, 05/14, Article 18) representing an instrument of protection against infringements of rights of parties by first-instance courts or other public law bodies. This right may only be excluded exceptionally under individual acts if other forms of legal protection are provided. (Đanić Čeko, Kovač, 2020) This nearly absolute right is a part of the Croatian legal tradition, also enshrined in Article 13(1) of the Convention for the Protection of Human Rights and Fundamental Freedoms ((European) Convention for the Protection of Human Rights and Fundamental Freedoms, Official Gazette – International Treaties, no. 18/97, 6/99, 14/02, 13/03, 9/05, 1/06, 2/10 - hereinafter the Convention) guaranteeing the right to an effective remedy in cases of violation of Convention rights and liberties before a national state authority. It is foreseen, as an effective remedy, by the basic substantive and procedural legislation in the field of administration in Croatia. The need for appeal and effective legal safeguards within administrative procedures is also foreseen by normative acts on administrative procedures taken at the level of EU institutions and offices.

As noted above, the right to lodge an appeal is a part of Croatian administrative tradition. This is particularly apparent in the fact that the right to lodge an appeal in administrative proceedings was regulated by the 1930 General Administrative Procedure Act of the Kingdom of Yugoslavia (in turn based on the 1925 General Administrative Procedure Act of the Republic of Austria), and the 1956 General Administrative Procedure Act enacted by the socialist Yugoslavia and adopted by Croatia in its consolidated version in 1986. The latter was adopted and amended by the Republic of Croatia in 1991 and 1996, respectively. (Koprić, 2011, Medvedović, 1995, Medvedović, 2003, Medvedović, 2006, Medvedović, 2010, Đerđa, 2010, Krbek, 1962, Babac, 1998, Borković, 2002) Ultimately, the right to lodge an appeal is also regulated by provisions of the most recent General Administrative Procedure Act representing the fundamental procedural legislation applicable to administrative matters which took effect on 1 January 2010 (Official Gazette 47/09). Article 12(1) and Articles 105 through 121 of the Act regulate the right to lodge an appeal and set out requirements and methods of enforcement of this right. The GAPA thus prescribes the principle of decision-making at two instances, enforced through the right to lodge an appeal as one of the basic and constitutional rights of citizens. (Turčić, 2010) In addition to being an inseparable part of the Croatian legal tradition, this paper ties the right to lodge an appeal to the principle of efficiency as a fundamental principle of the GAPA in all stages of administrative proceedings – including appeal proceedings.

Article 13(1) of the Convention also guarantees the right to an effective remedy before domestic bodies even in cases of violations of Convention rights and freedoms by persons acting in an official capacity. *Causa* for this emphasis on "effectiveness" pertains to the parties' right to use the remedy and to enjoy effective legal protection before public law bodies and in all procedures entered by the parties to protect their Convention rights and freedoms – and the domestic legal system is required to provide this effective protection. Accordingly, in several judgments rendered by the European Court of Human Rights concerning administrative procedures before domestic bodies in the Republic of Croatia, the court has pointed to the need for availability of remedies and their efficacy. In *Vajagić v. Croatia* of 20 July 2006 (European Court of Human

Rights judgment of 20 July 2006, *Vajagić v. Croatia*, no. 30431/03, § 53) concerning a case of an expropriation procedure, the court found, *inter alia*, that Article 13 of the Convention guarantees availability, at the national level, of the a remedy necessary for enjoyment of the substance of Convention freedoms and rights regardless of the form it is provided in the domestic legal order, referring to an earlier judgment in *Kudła v. Poland* of 26 October 2000. (European Court of Human Rights judgment of 26 October 2000, *Kudła v. Poland*, no. 30210/96, § 157) The above judgment therefore guarantees availability of the type of remedy essential for enforcement of the substance of the Convention rights and freedoms at the national level in any form which might be provided in the domestic legal system. Effects of Article 13 therefore require provision a domestic remedy addressing the substance of the complaint and affording appropriate protection under the Convention. In *Božić v. Croatia* judgment of 29 June 2006 (European Court of Human Rights judgment of 29 June 2006, *Božić v. Croatia*, no. 22457/02, §§ 32 and 45), concerning proceedings to recognise the right to family pension and in *Štokalo and Others v. Croatia* judgment of 16 October 2008 (European Court of Human Rights judgment of 16 October 2008, *Štokalo and Others v. Croatia*, no. 15233/05, § 65) concerning restoration of or compensation for nationalised property, the European Court of Human Rights determined the requirement of effectiveness of the remedy which shall only be effective if it is capable of covering all stages of proceedings (therefore also including appeal proceedings) indicated in the complaint taking into consideration their overall duration. In those cases, disputes involved, *inter alia,* duration of the proceedings and administrative silence.

Decisions of the Constitutional Court of the Republic of Croatia relying on Article 18 of the Constitution also support the position that the right to lodge an appeal is a right safeguarded by the Constitution. In addition to the above *causae*, the following judgments of the Constitutional Court of the Republic of Croatia particularly pointed out the requirement to facilitate enforcement of the right to lodge an effective appeal and an effective remedy in conduct of administrative proceedings. In its decision U-III/4621/2007 of 23 April 2008, the Constitutional Court quashed a judgment rendered by the Administrative Court of the Republic of Croatia and a decision of the Security and Intelligence Agency of the Republic of Croatia and remitted the case to new proceedings. The Constitutional Court determined, *inter alia*, that there were "… omissions of such nature that they may not be deemed acceptable from the standpoint of constitutional law and protection of the applicant's constitutional right to an effective remedy enshrined in Article 18(1) of the Constitution…" in administrative proceedings instituted in response to an impugned decision on transfer of the complainant (due to needs of the service, as an official of the Security and Intelligence Agency of the Republic of Croatia to the Ministry of Finance). Furthermore, in its decision U-III/1187/2006 of 24 March 2009, the Constitutional Court quashed an Administrative Court judgment, a decision of the Ministry of Finance, and a decision of the Finance Minister while remitting the case to the Ministry of Finance for new proceedings (the Ministry of Finance dismissed an appeal lodged by the complainant against the Finance Minister's decision to remove her from the position of the head of the Customs Offence Proceedings Department) finding, *inter alia*, "… that there were omissions in the proceedings concerning the impugned decisions of the Ministry of Finance of the Republic of Croatia in response to the complainant's administrative action and that the nature of the omissions is such that they cannot be deemed acceptable in light of the complainant's constitutional right to an effective remedy guaranteed under Article 18(1) of the Constitution…". Thus, the Constitutional Court confirmed the obligatory nature of an effective remedy in protection of citizens' subjective rights through its case-law.

Legislature has defined *effectiveness* as a term applied to administration through applicable regulations. Article 2 of the State Administration System Act (Official Gazette 66/19) states that the purpose of the state administration system lies in lawful, purposeful, effective, and

efficient discharge of state administration tasks defined in Article 3(1). Furthermore, the GAPA views the principle of effectiveness in the framework of Article 10 and the basic provisions of this act jointly with the principle of economy defining the principle by emphasising that administrative matters are conducted as simply as possible and promptly, but without affecting determination of facts and circumstances pertinent to the administrative matter. In accordance with the above, the legislature regulates importance of effective conduct of the state administration itself through the above basic substantive and procedural legislation, particularly by applying the principle of efficacy to all stages of administrative proceedings. Therefore, appeals and all activities of appeal proceedings must be prompt and as simple as possible regardless of the type of administrative proceedings. A part of the empirical research results taken for the purposes of this paper and data provided by the Competent Ministry will be used to test if this holds true.

Appeal as an effective remedy should also be considered from the point of view of EU-level administrative procedures and sources of law regulating them. Even though administrative procedural rules are not identified and codified in the EU law (Đerđa & Jerčinović, 2020, 87– 88, Vitez Pandžić, 2018, 259), this does not mean they do not exist. The administrative procedural rules are dispersed through various sources of the EU law and therefore exceedingly difficult to apply. However, the existing sources of law regulate the need for effective legal protection and the general right to an effective legal remedy, and several sources of the EU law regulating the matter will be pointed out in this part of the paper.

Article 19 of the Treaty of the European Union on the structure of the Court of Justice of the European Union, a part of the primary EU law, (Official Journal of the European Union, 26.10.2012, EN) , states: "Member States shall provide remedies sufficient to ensure effective legal protection in the fields covered by Union law." and this certainly encompasses all administrative areas including administrative procedures therein. Another primary source of law regulating the administrative procedure is the Charter of Fundamental Rights of the European Union (Official Journal of the European Union, 26.10.2012, EN) specifically as the right to good administration. Another Charter right associated with administrative procedures is the right to an effective remedy set out in Article 47. (Đerđa, 2012, 118)

Furthermore, since all EU Member States are also member states of the Council of Europe, acts of this body are applied across the EU territory and are thus binding for the Member States and EU bodies and institutions. The Resolution (77) 31 on the protection of the individual in relation to the acts of administrative authorities' sets administrative procedural rules and its Article 5 requires indication of remedies and time-limits for their use in administrative acts violating the rights, liberties or interests of a particular individual (Resolution (77) 31 on the protection of the individual in relation to the acts of administrative authorities, https://rm.coe.int/16804dec56). In 2007, the Council of Europe adopted the Recommendation CM/Rec (2007)7 of the Committee of Ministers to member states on good administration and its Article 13 foresees remedies against decisions of public authorities or lack thereof.

The general legal principles are deemed a significant source of EU law. It is deemed impossible to foresee every legal situation at the level of this international organisation and the Court of Justice of the European Union is authorised to create legal rules in its case-law derived from the EU law and Member States' legal systems. Legal rules created in this manner be the basis for conduct of administrative proceedings. Thus, Case C-72/12 *Gemeinde Altrip, Gebrüder Hört GbR, Willi Schneider v. Land Rheinland-Pfalz* judgment reaffirms the principle of the right to a remedy.

European Ombudsman's European Code of Good Administrative Behaviour should also be touched upon here (European Ombudsman, 2005). It has been adopted by the European Parliament in a resolution of 6 September 2001. (Đerđa & Jerčinović, 2020, 94–95) This Code details what the right to good administration referred to in Article 41 of the Charter of Fundamental Rights means in practice. The right to good administration is developed through principles and Article 19 sets out that the (EU) institutions must provide the right to appeal to parties whose requests or subjective rights are adversely affected by indicating the nature of the remedy, the body deciding on the appeal and applicable time-limits. This article also sets out the possibility of judicial protection before the Court of Justice and the right to submit a complaint to the European Ombudsman referred to in Articles 230 and 195 of the Treaty Establishing the European Community and Articles 263 and 228 of the Treaty on Functioning of the European Union (Official Journal of the European Union, 7.6.2016 HR, 216 C C 202/1). The above therefore ensures effective legal protection primarily regulating ordinary path of legal protection using appeals.

All above sources determine the need to regulate ordinary legal protection, but omit details thereof, leaving them to be provided in each individual case where a party's subjective rights are decided upon. In response to years of significant efforts to establish unified administrative procedural rules at the EU level (especially by the European Parliament and the Council) regarding operation of EU agencies, institutions, bodies, and offices, a regulation for an open, efficient, and independent European Union administration was drafted. It was proposed within the framework of the resolution of 9 June 2016 for an open, efficient, and independent European Union administration. (European Parliament resolution of 9 June 2016 for an open, efficient and independent European Union administration, https://www.europarl.europa.eu/doceo/document/TA-8-2016-0279_EN.html). However, the Commission has not yet put forward any legislative initiative regarding the above regulation even though the European Parliament's 2018 Impact Assessment of possible action at EU level for an open, efficient and independent EU administration presented conclusions favouring adoption of the above regulation. (Đerđa, Jerčinović, 2020, 97) Article 20 of the draft regulation sets out the right to administrative review in somewhat greater detail than the normative acts noted above. The method of enforcement of this right is laid down as well as the need to indicate time-limit for review in the administrative act itself even though the above time-limit is not regulated by this article, leaving it to individual areas and cases. As confirmed by its title, this article does not use the word "appeal", but considering the normative determination specifying that parties may seek review of administrative acts adversely affecting their rights and interests by submitting a request to the hierarchical superior authority (devolved action) and alternatively to the same authority which adopted the act, it is clear that the administrative review has the character of ordinary legal protection i.e., an appeal in administrative proceedings.

Protection of citizens' subjective rights after adoption of an administrative act is therefore reflected in ordinary legal recourse consisting of an appeal which must be effective to fulfil its purpose. The above is a part of the Croatian legal tradition and applicable normative regulations of the Republic of Croatia. The same is therefore reflected in the case-law of the European Court of Human Rights and the Constitutional Court of the Republic of Croatia as well as the existing EU-level administrative procedural rules.

3. Remonstrative and devolved powers following an appeal

Appeal is the only ordinary remedy against decisions in administrative matters. It is a procedural remedy allowing a party to institute a procedure before a second-instance body to

review lawfulness and regularity of a first-instance decision affecting their rights and obligations (Borković, 2002, 458, Đerđa, 2010, 240).

Krbek points out that appeals as ordinary remedies against administrative acts differ from informal acts (petitions) because the appellant is entitled to a formal decision on the request and the ordinary remedy must comply with specific legal requirements while a petition may be lodged informally at any time. (Krbek, 1962, 97) Accordingly, an appeal is a submission in compliance with provisions of the applicable GAPA and it must contain all elements found in any other submission as well as an indication of the impugned decision, the name of the body which adopted the decision and the reason for dissatisfaction with the decision. (Đerđa, 2010, 248) Even though appeals do not have to have statements of reasons, it is important to point out that well-presented facts and legal reasons for the appeal certainly contribute to success in appeal proceedings. Nonetheless, statements of reasons are required in cases where new facts and evidence are presented in appeals allowing the appellant to explain why they did not use them in the first-instance proceedings and what prevented them from being aware of such facts and evidence. In analysis of contents of appeals, it is impossible not to think about grounds for the appeals. Even though other pieces of procedural legislation specify grounds for appeals against individual acts (e.g., judgments) within appropriate legal protection proceedings, no grounds for appeal are specified for administrative proceedings i.e., for the GAPA (Official Gazette no. 47/09). However, considering the reasons for failings of an administrative act (Krišković et al., 2003, 60), material and non-material errors in administrative acts (Ivančević, 1983, 342) and grounds to challenge decisions in appeal proceedings (Đerđa, 2010, 246), by consistently analysing provisions of the GAPA, legal theory finds five groups of reasons allowing appeals to challenge decisions: (1) The administrative act/decision is adopted by a body which is not competent for the subject-matter; (2) The first-instance decision violated procedural rules affecting resolution of the administrative matter; (3) The facts are incorrectly or only partially determined or correctly and fully determined facts were used do draw an incorrect conclusion; (4) Substantive law was incorrectly applied; and (5) The aim or the purpose entails unlawfulness or there was an error in application of a discretionary assessment. (Borković, 2002, 73-77)

Regardless of the reason for an appeal, according to the GAPA (Official Gazette no. 47/09), the appeal must be submitted within 15 days following delivery of the decision to the party, although it is possible to prescribe a longer time-limit through special substantive legislation. If there are multiple parties to the proceedings, the 15-day time-limit applies to each party individually depending on the date of delivery to the party. The party may address an appeal to the second-instance body as indicated in the instruction on remedies included in the decision and submit it to the first-instance body which adopted the administrative decision. As noted in the introduction, the decisions regulating construction and use of a structure are "permits" and "certificates" and Article 96(2) of the GAPA (Official Gazette no. 47/09) allows introduction of such special terms. Construction permits and occupancy certificates for specific structures are issued by the ministry competent for construction affairs (currently the Ministry of Physical Planning, Construction and State Assets) in special administrative proceedings under Article 99 of the Construction Act (Official Gazette no. 153/13, 20/17, 39/19, and 125/19), an administrative body of a major city, the City of Zagreb, and counties competent for construction affairs. Therefore, appeals are submitted precisely to the above bodies, except if the Competent Ministry issued the permit or certificate. In the latter case, the decision may not be appealed, but an administrative dispute may be instituted. Appeals against corresponding permits or certificates are addressed to the Competent Ministry and submitted to the competent administrative body of the major city, the City of Zagreb, or the county if the above bodies have

rendered the first-instance decision. Since the Construction Act (Official Gazette no. 153/13, 20/17, 39/19, and 125/19) foresees no special time-limit for submission of appeals, the GAPA-imposed time-limit of 15 days following delivery of the corresponding permit or certificate to the party applies. According to provisions of Article 115(1) of the Construction Act (Official Gazette no. 153/13, 20/17, 39/19, and 125/19) "parties to the proceedings for issuing of construction permits are developers, owners of the real property referred to in the construction permit and holders of other property rights related to the same or to real property adjacent to the real property referred to in the construction permit" while Article 138 of the same act states that "parties in the proceedings for issuing of occupancy permits are developers and owners of the structure who instituted the proceedings to obtain the occupancy certificate". Each of the above parties may appeal the corresponding permit or certificate. The applicable Construction Act does not specifically distinguish procedural remonstrative powers of the above authorities regarding appeals and therefore, according to the GAPA, when the administrative body receives an appeal against a construction permit or an occupancy certificate, an official will first assess its formal elements to determine if it is timely and allowed, i.e. if it was submitted by an authorised person or a party to the proceedings or a party entitled to participate in the proceedings who was denied that right. If the official cannot determine if the appellant is entitled to be a party to the proceedings, the appeal and the corresponding case file are forwarded to the Competent Ministry for further processing. If the appeal complies with the above formal requirements, it is forwarded to other parties for their observations if multiple parties were involved in the proceedings, and appropriate time-limit for appeal will be provided to them. After consideration of the appeal allegations, the official may determine them well-founded and he or she will appropriately update facts of the case, obtain required documents, perform required procedural actions and replace the impugned permit or certificate if necessary unless it affects third parties' rights. There are three cases in which the first-instance administrative body submits the construction permit or occupancy certificate with the case file to the Competent Ministry for adjudication:

- It is impossible to assess if a person is a party to the proceedings.
- It has assessed that the first-instance proceedings to issue the construction permit or occupancy permit are lawfully and properly concluded.
- It has assessed that issuing of a new construction permit or occupancy certificate in compliance with grounds for the appeal would infringe upon the rights of third parties.

When the Competent Ministry receives an appeal and the case file (except in cases of appeals against administrative silence when there is no case file) as the second-instance body, it will also examine if the appeal against the construction permit or the occupancy certificate is timely and submitted by an authorised person. Upon fulfilment of the three formal requirements (otherwise, a decision is adopted to reject the appeal), the official of the Competent Ministry examines lawfulness and purposefulness of the impugned permit or certificate while confining the examination to the appeal allegations, but not the reasons for the appeal because the competence and grounds for voiding of decisions are examined *ex officio*. (Đerđa, 2010) If the applicant points to incomplete or incorrect determination of facts in the first-instance proceedings, the official of the Competent Ministry determines the facts according to the case file and the general design in proceedings to obtain a construction permit or according to technical inspection of the structure in cases of obtaining of an occupancy certificate, but they will also determine facts not determined in the first-instance proceedings either independently or through the first-instance body. By application of Articles 115 through 117 of the GAPA (Official Gazette no. 47/09), the Competent Ministry may dismiss the appeal (in cases where the first-instance proceedings were properly completed and the permit or certificate is lawful or when there are defects, but none which would lead to a different permit or certificate or where

the permit or certificate issued through the first-instance proceedings is lawful for reasons not stated therein) or grant the appeal and partially or fully revoke or modify the permit or certificate. In consistent application of the above provisions of the GAPA, the Competent Ministry shall void the decision and issue a construction permit or an occupancy certificate if it determines that facts were incorrectly or incompletely ascertained in the first-instance proceedings, or that the first-instance proceedings did not take into account procedural rules affecting issuing of the permit or the certificate, or that the operative part thereof is unclear or contradictory with the statement or reasons, or that regulations the permit or the certificate rely upon were incorrectly applied. Under Article 117(2) of the GAPA, the second-instance body sets decisions aside and remits cases to the first-instance body only when direct resolution is necessary considering the nature of the administrative matter. Article 103 of the existing Construction Act details the above provisions further by specifying that the lower-instance body is required to comply with the Competent Ministry's decision on appeal and defines unjustified non-compliance of officials as a severe breach of official duty. However, the final draft of the proposed General Administrative Procedure Act (Final draft of the proposed General Administrative Procedure Act, https://www.sabor.hr/sites/default/files/uploads/sabor/2019-01-18/075903/PZE_168.pdf) sets out, in explanation of its provisions, that second-instance bodies have rarely decided on merits of administrative matters following appeals, leading to prolonged administrative procedures, and that it is deemed that the solution proposed in paragraphs 1 and 2 of Article 117 would increase efficiency of the proceedings. In their paper offering an analysis of the provisions of the final draft of the proposed General Administrative Procedure Act, Đerđa and Pičuljan (Đerđa & Pičuljan, 2009, 279) stated the following on remedies: "it is assumed that direct resolution of administrative matters by second-instance bodies would provide parties with more expedient enforcement of rights and prevent repeated remittance of the same administrative matter to the first-instance body." Fulfilment of the legislature's intention to increase efficiency in relation to resolution of appeals by the second-instance bodies will be examined in the part of the paper examining the results of the empirical research and information provided by the Competent Ministry on processing of the appeals against construction permits and occupancy certificates in a four-year period.

Provisions of Article 117(2) whereby the second-instance body sets decisions aside and remits cases to the first-instance body only when its direct involvement is necessary considering the nature of the administrative matter should also be reviewed at this point. Specifically, it concerns the question of the nature of the administrative matter in the proceedings to obtain construction permits and occupancy certificates. Namely, the issue of the nature of the matter stems from an unspecific explanation and numerous discussions. Viewed either as an argument or as a source of law, it is impossible to provide any satisfactory definition of that term. The *nature of a matter*, as a term, has origins in Roman philosophy and jurisprudence (Cicero, Lucretius), and it is taken over by the *Digest* and the Christian law doctrine (Thomas Aquinas) and later by Montesquieu and Savigny. (Vrban, 2003, 351) Vrban points out that the "argument of the nature of the matter, used also as a source of law, relies therefore on a presumed sense or generally accepted meaning of manifestations subject to legal regulation". Rajko defines the nature of the matter as a "set of ethical, experiential, and practical imperatives acting as a source of law rationally supplementing, perfecting, supplanting, or correcting legal regulations". (Rajko, 2008, 25) Miličić relates the nature of the matter to specific value contents relying on actual societal relations and classifies it as a substantive source of law containing in itself numerous options of actual values/non-values. (Miličić, 2008, 83) Proceedings for issuing of construction permits and occupancy certificates are procedures naturally related to real property, so when the second-instance body sets a permit or certificate aside and remits the case to the first-instance because of necessity considering the nature of the matter, it may be deemed

worthwhile to resort to this argument specifically when certain defects in the procedure are related to the real property thus requiring determination of actual state of the matter *in situ* making repeated adjudication of the case by the first-instance body more effective and more economical. In other cases, there is nothing to prevent the Competent Ministry to decide on the merits following an appeal. The following chapter will provide an indication, using data of the Competent Ministry, of the share of cases remitted to the first-instance body following appeals and the share of the appeals resulting in a decision on merits of the case.

4. Empirical research methodology and analysis of results

As indicated in the introduction, this paper aims to examine effectiveness of appeal proceedings in the process of issuing of construction permits and occupancy certificates. In this paper, a part of results of the empirical research conducted by the author of this paper for the purposes of her doctoral thesis is analysed along with data received from the Ministry of Physical Planning, Construction and State Assets (previously the Ministry of Construction and Physical Planning) in response to information access requests submitted in November 2019 and September 2020. The empirical research was conducted using survey questionnaires designed to test hypotheses of the author's doctoral thesis aimed at determination of shortcomings in regulations and procedures used to obtain construction permits and occupancy certificates. The research was conducted on two groups of respondents. The first group of respondents consisted of selected competent county and city administration departments of local and regional self-government units and their branch offices issuing construction permits and occupancy certificates, while the second group consisted of members of the Croatian Chamber of Architects. The survey questionnaire was administered on-line (Google Drive), and two types of questionnaires were prepared and delivered to the two sets of respondents by e-mail. The sample included 116 competent county and city administrative departments of local and regional self-government units and their branch offices, and 1000 members of the Croatian Chamber of Architects. Ultimately, the responses were received from 41 competent offices (35.35% response rate) and 104 architects (10.4% response rate). Such response rates are deemed appropriate. Graphical representation of the data and an analysis of obtained percentages are presented in relevant sections of the results. The research was conducted from November 2016 to January 2017.

Chart 1 represents the data obtained through the responses provided by the first group of respondents. In those cases, heads of the competent county or city administrative departments of the local and regional self-government units or heads of their branch offices responded to the survey questionnaire. They were asked, *inter alia*, how often the then Ministry of Construction and Physical Planning decided following appeals and revocation of construction permits or occupancy certificates issued by competent county and city administrative departments and their branch offices by issuing a new permit or certificate without remitting the case to the competent county or city administrative department or their branch office for new proceedings (using its legal authority). The responses shown in the Chart 1 indicate that this hardly ever happens.

Chart 1: Issuing of permits and certificates by the Ministry of Construction and Physical Planning following an appeal without remitting the case to the first-instance body
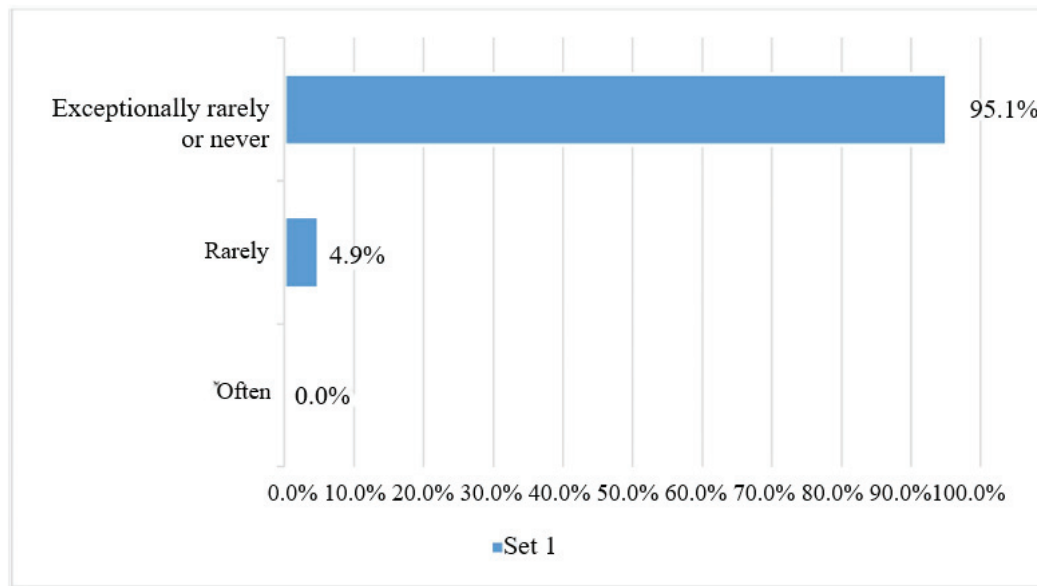
Source: Data processed by the author according to the results of the empirical research

Furthermore, Chart 2 represents the data obtained considering the responses provided by the second group of respondents. In those cases, the architects were asked to indicate how often the then Ministry of Construction and Physical Planning decided on appeals they lodged in relation to construction permits or occupancy certificates on behalf of developers, or those lodged by the developers themselves, by issuing a new permit or certificate without remitting the case to the administrative body which rendered the first-instance decision (using its legal authority). Judging from the data shown in Chart 2, this happens rarely or exceptionally rarely.

Chart 2: Issuing of a permit or certificate without remitting the case to the first-instance body
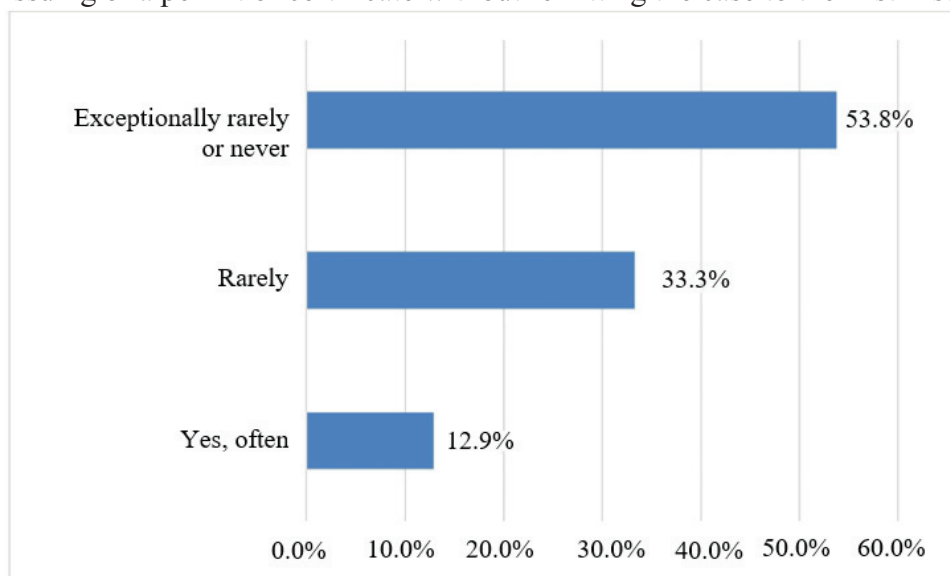
Source: Data processed by the author according to the results of the empirical research

Considering thus obtained data, the following question was asked: If the legislative intention was, according to Articles 117(1) and 117(2), to increase effectiveness of the appeal proceedings by obtaining second-instance body decisions on merits in cases where the first-

instance decisions (permits or certificates) are set aside by the second-instance bodies and the cases are remitted to the first-instance bodies with an indication of further course of action only when necessary, what led to this kind of results received from the two groups of those respondents regarding these special administrative proceedings? Are these special administrative proceedings perhaps different from other administrative proceedings considering the possibility of adjudication on appeals by the second-instance body? To further test the data, an information access request was submitted to the Ministry to glean insight into decisions rendered in response to appeals related to construction permits and occupancy certificates from 1 January 2016 to 31 December 2019 – in a period spanning the time of performance of the empirical research and a subsequent period. Information on actions of the Competent Ministry is shown in the following Table.

Table 1: Actions of the Competent Ministry in response to appeals lodged in relation to construction permits and occupancy certificates in the period from 01.01.2016 to 31.12.2019

Type of action	Construction permits	Occupancy certificates
Appeal rejected	13	3
Appeal dismissed	1001	290
Decision set aside (the case remitted for repeated proceedings)	659	263
Decision set aside, Article 117(1) of the GAPA	34	10
TOTAL	**1707**	**566**

Source: Ministry of Physical Planning, Construction and State Assets

In the observed four-year period, out of 1707 appeals related to construction permits, 59.40% of the appeals are rejected or dismissed. Likewise, out of 566 appeals received in relation to occupancy certificates, 51.77% are rejected or dismissed. Accordingly, in cases of dismissal of appeals against construction permits or occupancy certificates, it may be concluded that the first-instance bodies acted lawfully in a significant number of cases, complying with procedural and substantive rules, and correctly determining facts. On the other hand, the decisions were set aside in 40.60% of cases involving construction permits and 48.23% of cases involving occupancy certificates pointing to adoption of decisions (issuing of permits or certificates) contrary to provisions of the law or using incorrectly determined facts. Testing of the hypothesis set out in this paper requires a review of data concerning the number of cases where construction permits or occupancy certificates were revoked on appeal and the Competent Ministry rendered second-instance decisions – permits or certificates – deciding on merits of the cases. An analysis of the total number of cases where a construction permit was set aside reveals that the Ministry decided on merits in just 4.91% of the cases. It rendered decisions on merits in mere 3.66% of the cases where occupancy certificates were set aside. In other cases, construction permits, and occupancy certificates were partially or entirely revoked, and the cases remitted to first-instance bodies for repeated proceedings. Considering the intention expressed in the Final draft of the GAPA as the basic procedural law governing administrative procedures in the Republic of Croatia and its application on appeal proceedings before second-instance bodies where it aimed to prevent repeated remittance of the same administrative matter to the first-instance body and thus achieving an increased efficiency of the proceedings, it cannot be deemed that the intention was fulfilled in the framework of these special administrative proceedings. The share of cases where decisions on merits were rendered in appeal proceedings

instituted in the process of obtaining of construction permits or occupancy certificates cannot support a conclusion that this course of action was efficient.

5. Conclusion

The method of enforcement of legal protection in administrative proceedings instituted by means of appeals lodged with second-instance bodies is determined by the GAPA (Official Gazette no. 47/09) and somewhat modified compared to the previous legislation with the aim of protection of the subjective rights of citizens. The need for effective enforcement of citizens' rights in administrative proceedings instituted by means of appeals has been argued for at the level of protection of the right within the framework of the case-law of the European Court of Human Rights and the case-law of the Constitutional Court of the Republic of Croatia as well as conduct of administrative proceedings in the Republic of Croatia and within institutions of the European Union. The GAPA relates effectiveness of actions in all stages of the administrative proceedings including remonstrative and devolved powers following an appeal. The same is particularly recognised in the framework of devolved powers of second-instance bodies in appeal proceedings. Importance of efficacy in this stage of appeal proceedings is pointed out within the framework of the Final draft of the GAPA seeking to avoid affecting the subjective rights of citizens by delays of enforcement brought about by implementation of provisions of the old GAPA.

Nonetheless, in the first phase of the research, it was determined that both groups of the respondents indicated that the Competent Ministry exceptionally rarely or never decides on such administrative matters itself (by issuing new permits or certificates) without remitting the case to the first-instance bodies for new proceedings after revocation of construction permits and occupancy certificates. In the second stage of the research, after an analysis of data provided by the Competent Ministry, it was determined that there were decisions on merits rendered in only 4.91% of appeal proceedings related to construction permits and in 3.66% of appeal proceedings related to occupancy certificates after the second-instance body had set aside relevant first-instance decisions. Such low numbers of cases involving decisions on merits in the appeal proceedings conducted by the Competent Ministry are not indicators of the desired efficient conduct set out in the explanation of provisions of the Final draft of the GAPA. Furthermore, even though these are special administrative proceedings, the applicable Construction Act does not detail any devolved powers of the Competent Ministry regarding the appeals and the provisions of the GAPA are fully enforced in this area. Therefore, the explanation of intentions of the Final draft of the GAPA regarding efficacy of appeal proceedings are pertinent to these special administrative proceedings as well. In compliance with all the above, the hypothesis set out in the introduction of this paper is disproved because the research results demonstrated that the Competent Ministry, as the second-instance body, in most cases renders no decisions on merits of these administrative matters. In most cases, it grants appeals, revokes permits or certificates in full or in part, and remits the cases to first-instance bodies instead.

It is to be concluded that the provisions of the GAPA concerning the devolved powers of the second-instance bodies in appeal proceedings afford appropriate level of protection to all parties to the proceedings while also providing them efficacy of conduct of the proceedings. In accordance with the above, it is deemed necessary to additionally examine cases where the Competent Ministry decides on appeals against construction permits and occupancy certificates and revokes them to ensure that the Ministry decides on such administrative matters on its own and issues a new permit or certificate whenever it is not necessary to remit the case to the first-instance body. It is fair to say that the Competent Ministry and the relevant minister must be the drivers of the above improvements, providing incentive to such enhanced administrative

practice through instruments at their disposal – ultimately leading to effective protection of the subjective rights of parties to the administrative proceedings.

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THE SHADOW ECONOMY IN CROATIA

ABSTRACT

The shadow economy is a global phenomenon, regardless of the state of development of the country. However, the volume differs from country to country. Although there are different definitions of the shadow economy, it can be considered as unregistered economic activities that would contribute to the officially accounted gross national product if these activities were recorded. The paper presents the results of past papers that examine the causes and effects of the shadow economy, which they show that a strong presence of the shadow economy has been identified in Croatia, whose volume of shadow economy often tops charts in the European Union. According to some research estimates, it is calculated that the shadow economy comprises around a quarter of GDP and more. The main goal of this research is to examine the connection between the shadow economy and employment, unemployment, employee earnings and economic performance in Croatia. Correlation and multiple regression analysis were used to estimate the correlation of the mentioned variables and the shadow economy. Constrained by the availability of comparable data, the analysis covered the period from 2000 to 2019. The missing data in the panel were imputed using Fully Conditional Specification, where each incomplete variable is imputed by a separate model. Results unexpectedly showed that the growth of the shadow economy in Croatia is related to the growth of wages and GDP per capita, which can be explained by the negative migration balance in Croatia.It was determined that less workload of workers during the working week is associated with a higher level of the shadow economy.The expected increase in the shadow economy is associated with a decline in GDP growth.The result is indicative that a higher number of working hours in a working week is associated with lower gross and net wages and GDP per capita. The increase in employment is related to the lower level of the shadow economy, but also a higher share of the unemployed in the total population leads to a reduction in the shadow economy.

Keywords: shadoweconomy, employment, unemployment, Croatia, wages, growth.

1. Introduction

Previous literature has provided a number of definitions of the shadow economy, what it contains and methodsof its measurements. According to Feige (1990), the shadow economy

includes the illegal economy - production and distribution of goods and services prohibited by law, undeclared economy - undeclared income for tax evasion, unregistered (unrecorded economy) - activities not reported to official statistics, but should be, informal economy - activities that violate administrative rules governing property rights, employment contracts, credit agreements, social security system. According to the above, part of the mentioned activities are the resultof illegal activities, but in the scope of measurement, part of the shadow economy is related to legal, economic activities. Using the definitions of his predecessors (Lippert and Walker, 1997), Schneider (2003) summarizes the definition of the shadow economy and says that the shadow economy includes undeclared income from the production of legal goods and services paid for or replaced by barter - therefore, all economic activities that would be taxable if they were reported to the state (tax) authorities.Feige (2005) gives a more extensivedefinition of the shadow economy and considers that the shadow (informal, black, unreported) economy comprises economic activities that circumvent costs and are excluded from the benefits and rights incorporated in the laws and administrative rules covering property relationships, commercial licensing, labour contracts, torts, financial credit, and social systems.The most commonly used definition of the shadow economy (Frey and Pommerehne, 1984; Lubell, 1991; Feige, 1994) is that the shadow economy encompasses all unregistered economic activities that contribute to officially calculated GDP. In short, according to Medina and Schneider (2018), the shadow economy includes all economic activities which are hidden from official authorities for monetary, regulatory, and institutional reasons.

The shadow economy causes can be categorized into three groups: economic, policy-related, and regulatory and institutional factors. Among the key factors is access to financing, political stability, public services provision, tax burden, labour market regulations and institutional quality Wu and Schneider (2019).

In this paper, based on the estimated level of the shadow economy according to Kelmanson et al. (2019) examined will be the correlation between the shadow economy and employment, unemployment, hours at work, the level of employee wages and economic performance in general. The multiple regression model examined the relationship between these variables in Croatia from 2000 to 2019. The imputation of missing data was performed.

It is assumed that the level of employment and the shadow economy do not go in the same direction, unlike unemployment. It is also assumed that GDP per capita and GDP growth are negatively related to the shadow economy level. The results are not unambiguous.

It is also assumed that higher wages in legal activities lead to a reduction of the shadow economy. The results did not confirm this assumption. Although a shorter working week leads to a better quality of life for workers, the assumption in this paper is that a shorter working week leads to an increase in work in the shadow zone, i.e. undeclared work. Primarily that would be the case in countries where wages are as low as in Croatia. The results confirmed this assumption.

2. Theoretical background and approaches to calculating the shadow economy

Previousresearch (Karajić, 2002; Gerxhani, 2003; Schneider, 2003; Lovrinčević, et al., 2006; Williams and Schneider (2016); Dybka et al., 2017; Medina and Schneider, 2018; Wu and Schneider, 2019) are showed that the shadow economy leads to erosion of the economy because it includes unacceptable activities such as production and distribution of prohibited products, prostitution, smuggling, usury (colloquially called "loan sharks" in contemporary language),

theft, reduces the state budget and local community budget, prevents measurement of real economic activities, threatens property rights of individuals and businesses, workers' rights and social security of citizens. The study Federal Program for Financing Development in Bosnia and Herzegovina (2008, 7) lists the negative aspects of the shadow economy: reduction of public revenues, difficult functioning of public revenues, endangers the standard of state budget users, accelerates social stratification, reduces the authority of political power, increases business indiscipline, encourages the construction of the mafia, endangers the legal order, increases the competitiveness of the illegal sector in relation to the legal, leads to irrational use of resources.

In addition to the negative, numerous studies have shown the positive aspects of the shadow economy by having an expansive fiscal policy that has a positive effect on the overall economy (Adam and Ginsburgh, 1985), develop the market (Asea, 1996), increases consumption (Bhattacharyya, 1999; 2000), improve the welfare of workers in the absence of work in the formal sector and help the economy to maintain an untapped reservoir of labour supply (Wu and Schneider, 2019). The authors also emphasize the positive social dimension of the shadow economy, which acts as a social shock absorber, especially in transition countries. When suppressing the shadow economy, should be careful because, as Wu and Schneider (2019, 21) point out, if the long-run trend of the shadow economy can be reversed with economic development, then it is key to be aware of the current state of the economy and remain alert to the policy effectiveness. If the economy is less-developed or experiences a catch-up phase, its shadow economy is expected to go through a downsizing process. In this period, the authorities can harness the trend to attract more firms and workers out of the shadow economy by promoting financial development, containing inflation, stabilizing the political situation, and expanding educational spending. By contrast, when the economy has reached the threshold of GDP per capita and starts to show the positive relationship between GDP per capita and the shadow economy, the authorities should put additional efforts to make working in the formal sector more beneficial, for example, by reducing labour market rigidities to improve market efficiency and simplifying tax compliance procedures with recent technology innovations. According to the Federal Program for Financing Development (2008, 5), the spread of the shadow economy is not only the responsibility of citizens and businesses but primarily of the authorities who must understand that paying public revenues (taxes) does not only pay tribute to the authorities through public institutions. According to the results obtained by Bovi (2002, 17), if a country is relatively corrupt, its hidden economy is large even if its regulations and tax burdens are not particularly heavy. On the contrary, if institutions were very efficient and uncorrupt, high tax rates and onerous regulations would not be correlated with the shadow economy. According to Bovi (2002, 18), countries with the largest unofficial economy do not necessarily have the highest tax burdens. Also, according to him, the variables, which are influencedbytheauthorities, canlead to twokindsofbalance. One is characterized by good institutions, light regulations, little black economy, wide tax base and considerable tax revenue; the other is characterized by bad institutions, intrusive regulations, sizeable black economy, narrow tax base and reduced tax revenue. Radman-Funarić (2013; 2018), Borozan and Radman-Funarić (2016), Štulhofer and Rimac (2002), Štulhofer (2004) presented their results on the connection between corruption, non-compliance with norms and distrust in institutions with economic effects in Croatia.

When calculating the shadow economy in previous research, different calculation methods have been used (Schneider, 2002), such as direct approaches (official state statistics, Gyomai and van de Ven, 2014; Medina and Schneider, 2018), indirect approaches (Madžarević-Šujster and Mikulić, 2002; Bovi, 2002; Wu and Schneider, 2019), and a model approach is based on the

Multiple Indicator, Multiple Causes (MIMIC, different approaches to causes variables and indicator variables of the shadow economy) (Hassan and Schneider, 2016; Medina and Schneider, 2018; Kelmansonetal., 2019; Franić, 2019), differentstatisticalmodels (Medina and Schneider, 2018) and different combinations of the macro method of currency demand analysis (CDA), Predictive Mean Matching Method (PMM) and MIMIC estimates (Dybka et al. ., 2017; Medina and Schneider, 2018). In recent research, the most commonly used model for estimating the shadow economy is MIMIC estimates (macro MIMIC, adjusted MIMIC). The so-called macro approaches provide upper bound estimates as they include crime activities, do-it-yourself activities and voluntary activities in the shadow economy because these are at least partly performed for the same reasons as "pure" shadow economy activities. Gyomai and van de Ven (2014) say that MIMIC estimates on average are three times as large as the estimates for the non-observed economy in the System of National Accounts. According to Medina and Schneider, 2018, 27), a promising approach is the structured hybrid approach by Dybka et al. (2017), who contribute to the CDA and MIMIC method in a new way avoiding many econometric problems. The result is that they achieve much lower sized shadow economy estimates. In his research, Schneider (2003) uses the DYMIMIC model (dynamic multiple-indicators multiple-causes), which consists of two parts: the measurement model links unnoticed variables with observed indicators, and the model of structural equations determines the cause-and-effect relationships of unnoticed variables. According to Medina and Schneider (2018, 12), the MIMIC model is a theory-based approach to confirm the influence of a set of exogenous causal variables on the latent variable (shadow economy) and also the effect of the shadow economy on macroeconomic indicator variables. Exogenous variables are considered as drivers of the shadow economy; fiscal freedom (tax burden on the economy), institutions (the rule of law and control of corruption because of lack of respect for the law or high corruption which encourages informal economic activity), unemployment, trade openness (as international trade increases, harder to hide it), GDP per capita, size of government, government stability. Latent variables are indicators of the shadow economy; currency (people engaged in the informal economy usually conduct their activities in cash), labour force participation (the official employment rate), GDP per capita growth.

The Medina and Schneider (2018) study in 158 countries in the period from 1991 to 2015 showed a strong statistically significant influence between the shadow economy and all analyzed causes (Trade Openness, GDP per capita, Unemployment Rate, Size of Government, Fiscal Freedom, Rule of Law, Control of Corruption, Government stability and Initiators (Currency, Labor Force Participation Rate, Growth of GDP per capita). The results showed, in the analysis of all 158 countries, group of 105 developing countries and 26 advanced countries, that the unemployment rate positively affects the shadow economy, although not large, and GDP per capita, as a cause, negatively affects the shadow economy, especially in advanced countries.The shadow economy negatively affects GDP per capita growth, as an indicator, in all countries, especially in developing countries, while in advanced countries, this impact is positive.Similar results were obtained by Hassan and Schneider (2016), researching the size and development of the shadow economies of 157 worldwide countries from 1999 to 2013, Wu and Schneider (2019) in the period from 1996 to 2015 and Kelmanson et al. (2019) in 47 European countries for the period of 1999–2016, using the MIMIC model.

Overall, the results of previous research (Schneider, 2003; Medina and Schneider, 2018) indicate that the most important drivers of the volume and growth of the shadow economy are the increased burden of taxes and contributions, as well as increasing state regulation activities. The shadow economy is a complex phenomenon, and it exists in both industrially developed and underdeveloped industrial societies. The results of extensive research by Johnson et al.

(1997) confirmed that countries with higher statutory economic determinations generally have a higher share of the informal economy in GDP. An increase of one rank in the regulatory index (ranging from 1 to 5, where 5 means the most regulations), along with other unchanged conditions, leads to an increase of 8.1% in the share of the shadow economy in GDP per capita, according to Friedman et al. (1999) this increase is 10%. Simultaneously, the escape into the shadow economy results from an extensive range of legal regulations, not a quality implementation of legal regulations.

Franić (2019) survey Undeclared Economy in Croatia during the 2004–2017 Period: Quarterly Estimates Using the MIMIC Method indicate that despite Croatia being one of the most active in the EU when it comes to combating the undeclared economy, not much is known about the effectiveness of these measure since joining the EU.Results show that the undeclared economy remained stable with value added ranging from HRK 24.1 billion to HRK 26.9 billion, accounting for 7.8% of total GDP in 2017. That indicates a growing trend, which indicates the inefficiency of political approaches in the fight against undeclared economies.In his research, Franić (2019) found that increased unemployment leads to a decrease in the undeclared economy and assumes that the reason for this is that employed individuals are the main stakeholders.

3. Shadow economy estimation

According to the results obtained by Schneider (2003), during 2000-2001, the shadow economy averaged 38% of added value and employed 30.2% of the total labour force in 22 transition countries and constituted 16.7% of official GDP and 15.3% of employees in 21 OECD countries. Greece (28.5%), Italy (27.0%) and Portugal (22.5%) had the largest share of the shadow economy in official GDP. Germany, with a share of 16.3%, Ireland with 15.7% and France with 15.0%, were in the middle. The USA had the lowest share (8.7%), followed by Switzerland (9.4%) and Austria (10.6%). The share of the shadow economy in the nine transition countries of Central and Eastern Europe increased from 23.4% of official GDP in the period 1990-1993 to 29.2% in the period 2000-2001. In the period 2000-2001, the largest share of the shadow economy in the official GDP had Macedonia (45.1%), Bulgaria (36.4%) and Romania (33.4%). The Slovak Republic (18.3%) and the Czech Republic (18.4%) had the lowest shares. From 1990 to the beginning of the century, the share of the shadow economy in GDP in 22 transition countries increased by 9.9%, and the increase in OECD countries was 3.5% (an increase from 13.2% to 16.7%).

Observing 158 countries of the world, according to the research of Medina and Schneider (2018), the level of shadow economy ranges from 34.51% (1991) to 31.57% (2015), with a decrease of just under 30% in some years of the period. According to the results of Hassan and Schneider (2016), the estimated average level of the shadow economy in Advanced Economies is 20.5% in 2013, and according to Schneider (2015), the estimation gave a lower result, 15.8%. According to Kelmanson et al. (2019), the shadow economy level in advanced economies in 2016 was 20.7%, and it is above 40% of GDP in most of the CIS countries and even higher in some cases.

There is no ideal or leading method to measure the shadow economy, each having some conceptual or practical strengths and weaknesses (Wu and Schneider, 2019, 6). Depending on the assessment methods and the level of the shadow economy estimate is different. Using a unique CDA-MIMIC model with different statistical methods (three different regression analyzes), Dybka et al. (2017) came up with different results. For Croatia in 2015, these three

regressions showed that the share of the shadow economy in GDP was 13.4%, 14.4%, 8.2%, while, according to the Statistical Offices, the shadow economy in Croatia took part of 6.9% in official GDP. Medina and Schneider (2018) compared the results using the Predictive Mean Matching Method (PMM, developed by Rubin 1987), according to which the size of the shadow economy in Croatia is 18.7%, and according to MIMIC estimates 28.8%, both average over 1991-2015. According to the results of a survey (Švec, 2009, 441) conducted for the period from 2002 to 2007, using data from the Croatia Bureau of Statistics, Croatia ranks seventh among EU countries in terms of unofficial employment. It was also noticed that by increasing the number of employees in the official economy, the number of employees in the informal economy also increases, i.e. a certain number of people participate in both economies simultaneously. According to Hassan and Schneider (2016, 7) estimated shadow economy in Croatia is 28.94% of the GDP average from 1999 to 2013. In 2016 according to the results of Wu and Schneider (2019, 26), it was 35.00% according to Wu and Schneider (2019, 26).

The data of Lovrinčević et al. (2006, 52) that in Croatia in 2002, according to Eurostat data, the size of the shadow economy was 15.8% of GDP and the average of all other methods was 34%, which is 2.15 times more than the Eurostat estimate. Part of the results obtained is shown in Table 1 and Figure 1.

Table 1: Size of the shadow economy in Croatia - estimated by different methods

Average 1990-1993	Average 1994-1995	1998	2000/2001	2002	2013	2015
23.5[1]	28.5[1]					
24.6[2]			32.4[2]			
		32.9[3]				
					31.61[4]	
	36.62[5]	34.22[5]	31,46[5]	29.6[5]	25.28[5]	22.96[5]
						14.92[6]
			33.4[7]	32.9[7]	36.7[7]	36.4[7]
						6.9[8]
				15.8[9]		

Source: Authors according to:[1] Method of physical input (electrical energy) using values (Johnson, Kaufmann and Shleifer, 1997), [2]DYMIMIC (Schneider, 2003), [3]Lacko (1998),[4]MIMICHassan and Schneider (2016) [5]MIMIC macro (Medina and Schneider, 2018), [6]MIMIC adjusted (Medina and Schneider, 2018), [7]MIMIC (Kelmanson et al., 2019), [8]Statistical offices (Medina and Schneider, 2018), 9 Eurostat (2014).

Figure 1: Size of the shadow economy in Croatia from 1991 to 2016
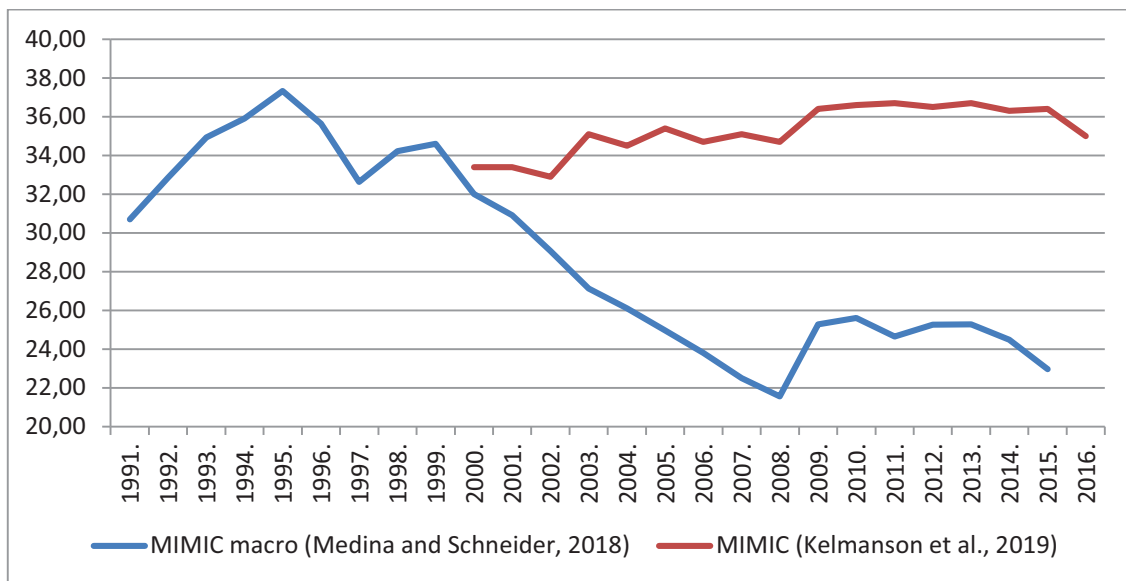
Source: Authors according to Medina and Schneider (2018) and Kelmanson et al. (2019)

4. Data and methodology

Guided by the previously presented research and theoretical contribution, this paper assumes the correlation and causal link between the informal economy and employment, unemployment, employee wage levels, and general economic performance. Hassan and Schneider (2016), Medina and Schneider (2018, 12) and Kelmanson et al. (2019) explained the causal relation between the shadow economy and variables using causes variables and indicator variables of the shadow economy. This paper examines the correlation between the shadow economy and these variables and uses a multiple regression model to examine their relation in Croatia from 2000 to 2019. The paper also examines the relation between hours at work, net and gross earnings with shadow economics, which has not been examined in previous research.

Data of the shadow economy level in Croatia are taken from the research of Wu and Schneider (2019, 25-26) obtained by the authors using the MIMIC method, which Kelmanson et al. (2019), despite its weakness, considered appeal due to broad coverage and the internal consistency of the dataset. The available data on the level of the shadow economy refers to the period from 2000 to 2016. For independent variables (Table 1), data from 2000 to 2019 were used. Data on employment and unemployment from 20 to 64 years, number of usual weekly hours of work and GDP growth were obtained from Eurostat, net earnings and gross were obtained from Croatia Bureau of Statistics and GDP per capita from The World Bank (World Bank, 2020).

The limitation is insufficient data on the average number of usual weekly hours of work in the main job and average monthly gross earnings for 2000 and 2001 and insufficient data on the shadow economy from 2017 to 2019. Insufficient data were compensated by conducting the imputation of missing data.

Table 2: Variables in the study

Abbreviations	Variable name	Measure unit
Dependent variable		
SE	Shadoweconomyestimate	%
Independent variable		
TE	TE - Total employment (resident population concept - LFS) from 20 to 64 years - Percentage of the total population	%
TUE	TUE - Total unemployment – annual data [UNE_RT_A] from 20 to 64 years - Percentage of the total population	%
WHW	The average number of usual weekly hours of work in the main job, by sex, professional status, full-time/part-time and economic activity - Weekly hours of work	Hours
NE	Average monthly paid off net earnings per person in paid employment in legal entities	kuna (HRK)
GE	Average monthly gross earnings per person in paid employment in legal entities	kuna (HRK)
GDPpc	GDP per capita current	US$
GDP growth rate	Real GDP growth rate - volume - Percentage change on the previous year	%

Source: Authors

In thefirststepof the analysis, Pearson correlation coefficients were calculated that examine the correlations of the shadow economy with the variables employment, unemployment, weekly workload, employee earnings, and economic performance at the national level. The second part is multiple regression analysis, where the shadow economy is a dependent variable, and other variables presented are independent. Precisely due to this limitation, the lack of available data for 2002 and 2019, before regression analysis, imputation of missing data such as Medina and Schneider, 2018 was performed using the MICE algorithm (van Buuren, 2012), which creates multiple imputations, i.e. replacement values, a total of seven measurements. Which allowed the research to cover the period from 2000 to 2019. The formulas for the multiple regressions can be expressed as

$$SE = a + \beta_1 TE + \beta_2 TUE + \beta_3 WHW + \beta_4 NE + \beta_5 GE + \beta_6 GDPpc + \beta_7 GDPgrowth + e$$

SEis a dependent variable, and others are independent variables, e is the error term involved in using the linear model to predict the value of Y, a is the intercept of the slope, and β is the coefficient of the independent variable (Kamki, 2016).

5. Results and discussion

The results of the correlation analysis are shown in Table 3.

Table 3: Correlation matrix

	Shadow econ	Employment	Unemployment	Hours at work	Net earnings	Gross earnings
Shadow econ	1.00					
Employment	0.22					
Unemployment	0.08	-0.89***				
Hours at work	-0.64*	-0.29	-0.02			
Net earnings	0.85***	0.63**	-0.35	-0.89***		
Gross earnings	0.79***	0.51*	-0.21	-0.85***	0.98***	
GDPpc	0.77***	0.81***	-0.42	-0.61**	0.88***	0.87***
GDPgrowth	-0.66**	-0.10	-0.03	0.27	-0.38	-0.52*

Note: Significance *p<0.1, **p <0.05, ***p<0.01
Source: Authors

Unexpectedly, the correlation analysis showed a statistically significant strong positive connection of the shadow economy with net earnings (r = 0.85, p <0.01) and gross earnings (r = 0.79, p <0.01) and GDPpc (r = 0.77, p <0.01). Thus the growth of the shadow economy is linked to the growth of wages and GDP per capita. The results related to GDP per capita contradict the results obtained by Wu and Schneider (2019). There was no statistically significant correlation between the shadow economy and employment and unemployment per capita. However, employment is positively related to net earnings (p <0.1) and gross earnings (p <0.05).

Unsurprisingly, the result shows a statistically significant strong negative correlation between the shadow economy and the average number of usual weekly work hours (r = -0.64; p <0.1). That is, less workload of workers during the workweek is associated with a higher level of the shadow economy. The results can be explained by the free time that allows undeclared work to be done outside working hours. The expected increase in the shadow economy is associated with a decrease in GDP growth (r = -0.66; p <0.05).

Indicative is the result that the number of working hours in a working week is statistically significantly strongly negatively related to the level of gross and net wages and GDP per capita. The reason for this can be found in the official reduction of weekly working hours with a simultaneous increase in salaries in the legal sector, which may be the result of realized but unregistered overtime work, which is a challenge for further research.

Table 4: Multiple Regression Results

	Dependent variable
	Shadow_econ
Independent variable:	
Employment	**-0.428*****
	(0.145)
Unemployment	**-0.403****
	(0.159)
Hours_at_work	-0.190
	(0.767)

	Dependent variable
Net_earnings	**0.001[*]**
	(0.001)
Gross_earnings	-0.001
	(0.001)
GDP_growth	**-0.231[***]**
	(0.062)
Constant	70.432[*]
	(35.076)
R^2	0.613
Adjusted R^2	0.484
Residual Std. Error	0.820 (df = 18)
F Statistic	4.749[***] (df = 6; 18)

Note: Significance[*]p<0.1, [**]p <0.05, [***]p<0.01. Standard errors are reportedinparentheses.
Source: Authors

Adjusted R^2 shows that model is high effect sizes (0,484) and explains changes in the outcome variable. Regression model is statistically significant (F Statistic 4.749, df = 6; 18).

Regression analysis provided several statistically significant results. It showed that in Croatia, the share of employees in the total population has a negative impact on the shadow economy, i.e. an increase in employment is expected to lead to a decrease in the shadow economy, which is in line with the results of Medina and Schneider (2018), although in their work the Labor Force Participation Rate is an indicator variable. However, it was found that the share of the unemployed in the total population also negatively affects the shadow economy, i.e. the result shows that increasing unemployment leads to a decrease intheshadoweconomy. The same resultisgivenintheFranić (2019) study,andoppositearetheresultsof Hassan and Schneider (2016) and Medina and Schneider (2018).

GDP growth is connectedto the decrease in the shadow economy. Although in this analysis, GDP growth is not treated as an indicator of the shadow economy, and it is not the result of structural equations modelled on Kelmanson et al. (2019) and Wu and Schneider (2019), expectedly there is a negative correlation between GDP growth and the level of the shadow economy, which is in balance with their research.

Previous research (Radman-Funarić, 2020) showed that the migration balance in Croatia from 2009 to 2018 has a frequent negative sign with an average annual increase in the negative migration balance, which may explain the differentsign of the GDP per capita ratio (r = 0.77, p <0.01) and GDP growth (r = -0.66, p <0.05; β = -0.231, p <0.01) with shadow economy. The negative migration balance in Croatia may also explain the differences compared to previous research. Specifically, even with the smallest increase in GDP in the case of population emigration, GDP per capita increases, which creates the image that the shadow economy and GDP have the same trend. The negative migration balance in Croatia can also explain the opposite effect of unemployment on the shadow economy (β = -0.403, p <0.05).

6. Conclusion

So far, the research on the level of the shadow economy has been conducted using various methods that prevent the best comparison. Each of them contains weaknesses but also convenient elements. Despite the wide range of results obtained by researchers, there are many common points of view. In particular, the shadow economy indicators are trade openness, GDP per capita, unemployment rate, government size, fiscal freedom, the rule of law, control of corruption, government stability and initiators are currency, labour force participation rate, GDP growth.

The results unexpectedly showed that the growth of the shadow economy in Croatia is strongly positive related to the growth of net and gross earnings and GDP per capita. The negative migration balance may explain this result. Due to the emigration of the population in Croatia, even with the smallest increase in GDP in the case of GDP per capita increases, which creates the image that the shadow economy and GDP are going in the same direction. It was found that less workload of workers during the workweek is associated with a higher level of the shadow economy. The results can be explained by the free time that allows undeclared work to be done outside of working hours. The expected increase in the shadow economy is associated with a decline in GDP growth. The result is indicative that a higher number of working hours in a working week is associated with lower gross and net wages and GDP per capita. The reason for this can be found in the official reduction of weekly working hours with a simultaneous increase in salaries in the legal sector, which may be the result of realized but unregistered overtime work, which is a challenge for further research. The expected increase in employment is connected to the lower level of the shadow economy. However, it was found that a higher share of the unemployed in the total population leads to a decrease in the shadow economy. However, according to the results in Croatia, the reduction of the shadow economy is related to GDP growth.

Considering the results of these and previous research, it follows that with the aim of economic and social development that taking harsh measures with a view to dramatically reducing or even to eradicating the shadow economy is not a first-best solution and the appropriateness of the policy depends on the level of economic development. As suggested by previous researchers, Croatia's development policy should go in the direction of creating a convenient business environment, free of corruption and a large number of tax regulations, with the aim of greater participation in the formal sector. A greater range of available relevant data important to such research will contribute to the increase for further research and developemet of statistical methods. Ad herence to social norms, improved human capital, education about the negative effects of the shadow economy would, undoubtedly, lead to a reduction of the shadow economy to the benefit of all participants in society.

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BLENDED LEARNING CONCEPTUALIZATION IN THE DEVELOPMENT OF BUSINESS EDUCATION

ABSTRACT

This paper focuses on the conceptualization of blended learning (combined learning) and its impact on the development of business education. The development of business education is considered in the context of the relationship and the level of students' acceptance of and satisfaction with blended learning. The impact of the conceptualization of blended learning on students' preferences towards traditional classroom learning, blended learning and combined learning is comparatively analyzed.

Research on the impact of blended learning conceptualization on students' preferences for traditional classroom learning, blended learning and combined learning, was conducted on a sample of 400 students of the Faculty of Economics undergraduate and graduate study of business economics. The research was conducted through a questionnaire in which questions were asked about the attitudes and assessments of students that are considered in relation to each other: 1) students' preferences for traditional classroom learning, blended learning and combined learning, 2) information and communication technology (ICT) factors in blended learning and 3) goals and effects of online learning. Students were divided into two groups from the point of view of the level of conceptualization of blended learning.

Statistical methods of hypothesis testing and correlation analysis were used to investigate the influence of blended learning on the affinity (preferences) of students for blended learning, classical learning and hybrid (combined) learning. The statistical significance of the difference between the arithmetic means of the first and second groups of students on the significance level of 1% was tested. Correlation analysis examined the relevant links within and between 1) students' preferences for traditional classroom learning, blended learning and combined learning, 2) information and communication technology (ICT) factors in blended learning and 3) goals and effects of online learning .

Keywords: *blended learning, conceptualization, model, hypothesis testing, correlation analysis.*

1. Introduction

The use of a new generation of information and communication technologies (ICT) based on user-oriented and conceptualized applications and tools in blended learning creates the preconditions for increasing the quality and efficiency of learning. Through the systematic use of sophisticated applications, technologies and tools, students evaluate their knowledge and abilities during class, learn by solving concrete examples in collaboration with other students, and promptly receive feedback. Strategically oriented IT education and conceptualization of education based on the systematic introduction and development, innovation, creativity and use of modern information systems and technologies makes blended learning more interesting and motivates students to learn and research (Čičin-Šain, Vukmirović, Čičin-Šain, 2013). Well-organized and systematically thought-out learning can motivate and interest students to the extent that efforts and commitments evolve into fun, entertainment, and satisfaction.

In the first part, Introduction, the basic features of this paper are presented. The second part discusses the theoretical features of the conceptualization of blended learning in the context of the development of business education. The third part investigates the impact of the conceptualization of distance learning and blended learning on students satisfaction by statistical method of hypothesis testing. The fourth part investigates the relationship between information and communication technologies (ICT), the characteristics of learning content and the goals of conceptualized blended learning in the context of the development of business education. In the fifth part, Conclusion, a synthesis of the entire paper is presented, and the most important research results are presented.

2. The theoretical features of the Conceptualization of Blended Learning

The term Blended learning (BL) is ill defined and inconsistently used. While its popularity is increasing, its clarity is not. Under any current definition, it is either incoherent or redundant as a concept.

Building a tradition of research around the term becomes an impossible project because without a common conception of this meaning, there can be no coherent way of synthesizing the findings of studies, let alone developing a consistent theoretical framework that addresses the uniqueness of BL environments (Oliver and Trigwell, 2005, Graham, 2013 as cited in Duarte, 2016). Researchers have recommended that the conceptualization of BL be rebuilt using grounded learning theory, therefore shifting the emphasis from teacher to learner (Oliver and Trigwell, 2005 as cited in Duarte, 2016.). Similar concerns are echoed by organizations such as OLC (formerly Sloan-C) and Picciano (2006) attempted to re-conceptualize blended learning using a more grounded learning theory.

Hoic-Bozic et al. cited by Ozadowicz, A. (2020) explain that the BL incorporates online and traditional learning environments, technologies and digital media for learning content delivery, taking into account various teaching and learning methods (both online and traditional). Moreover, group and individual learning activities are considered for effective BL implementation with synchronous and asynchronous interactions between all actors in the learning and teaching processes. That approach allows the building of a variety of frameworks and structures for courses, with high commitment of students and active, mentoring role of teachers and lecturers.

Blended learning is the concept that includes framing teaching learning process that incorporates both face to face teaching and teaching supported by ICT. Blended learning

incorporates direct instruction, indirect instruction, collaborative teaching, individualized computer assisted learning. According to Lalima and Dangwal (2017), the main features of blended learnong are: a) Face to face teaching, b) Student interaction with course content, c) Peer group interaction, d) Accessing e-library, e) Virtual classroom, f) Online assessment, g) e-tuitions-students, h) Accessing and maintaining educational blogs, i) Webinars, j) Group discussion and exchange of ideas, k) Viewing expert lectures in YouTube, l) Online learning through videos and audios, m) Virtual laboratories.

Osguthorpe and Graham (2003) cited by Comey, W. L. (2009) have written extensively about the blended learning environment. In their writing they emphasize that each course or class may be blended in a different manner as an instructor seeks the right balance or mix of online and face-to-face components. The aim of using blended learning approaches is to find a harmonious balance between online access to knowledge and face-to-face human interaction. The important consideration in creating a blended class is to ensure that the "blend involves the strengths of each type of learning environment and none of the weaknesses". The ultimate goal of which is to develop a blend of instructional strategies tailored specifically to improve student learning.

Anderson and Garrison (1998), as cited in Anderson (2003), described the three more common types of interaction discussed in the distance education literature involving students (student-student; student-teacher; student-content), and extended the discussion to the other three types of interaction (teacher-teacher; teacher-content; content-content). Blended learning based on the use of sophisticated applications, technologies and tools and learning management system (LMS) facilitate those types of interaction. Blended learning programs integrate face-to-face programs (classroom) and online programs, so it can present material through an asynchronous format, but can also present material through a synchronous format (Driscoll & Carliner, 2005). According to Rossett, Douglis & Frazee, 2003, as cited in Klink, 2003, blended learning programs blend material presented from the traditional classroom and live virtual classroom (synchronous) and asynchronous instruction. Model of interaction in blended learning scenarios, based on the modes of interaction in distance education from Anderson and Garrison (1998) and adopted by Mader, E. et. Al, 2008, et. al. is shown in Figure 1.

Figure 1: Model of interaction in blended learning
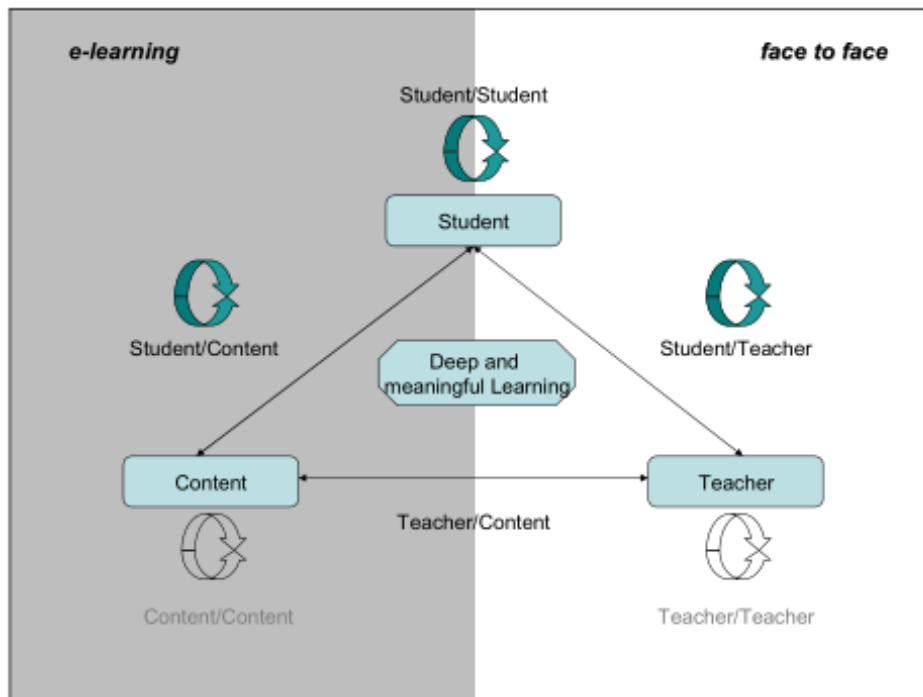
Source: Mader, E. et. al. (2008)

Conceptualization of blended learning include a shift from episodic access, to clusters of instructional resources, to integrated perpetual learning, with a separation of learning and certification of mastery, and a reconceptualized role for faculty - from deliverers of content to mentors and facilitators of learning The most pervasive of these changes is the shift from a "provider focus" to a "learner focus," with its attendent mass customization through individualized learning systems (Parker, 2008.).

The Figure 2 shows the model of blended learning conceptualization. The diagram shows the systematization of the levels of combined learning, which are presented and defined in the form of four quadrants. The first level of blended learning shown in the upper left quadrant and defines the use of basic and simple technologies in classical classroom learning. The second level of is shown in the upper right quadrant and involves the use of basic and simple technologies needed to conduct blended learning. The third level is shown in the lower left quadrant and defines the use of advanced technologies in traditional (conventional) classroom learning. The fourth, highest level of blended learning conceptualization is shown in the lower right quadrant and defines the use of advanced technologies that are fully integrated and conceptualized in the function of supporting blended learning.

Figure 2. Blended Learning Conceptualization
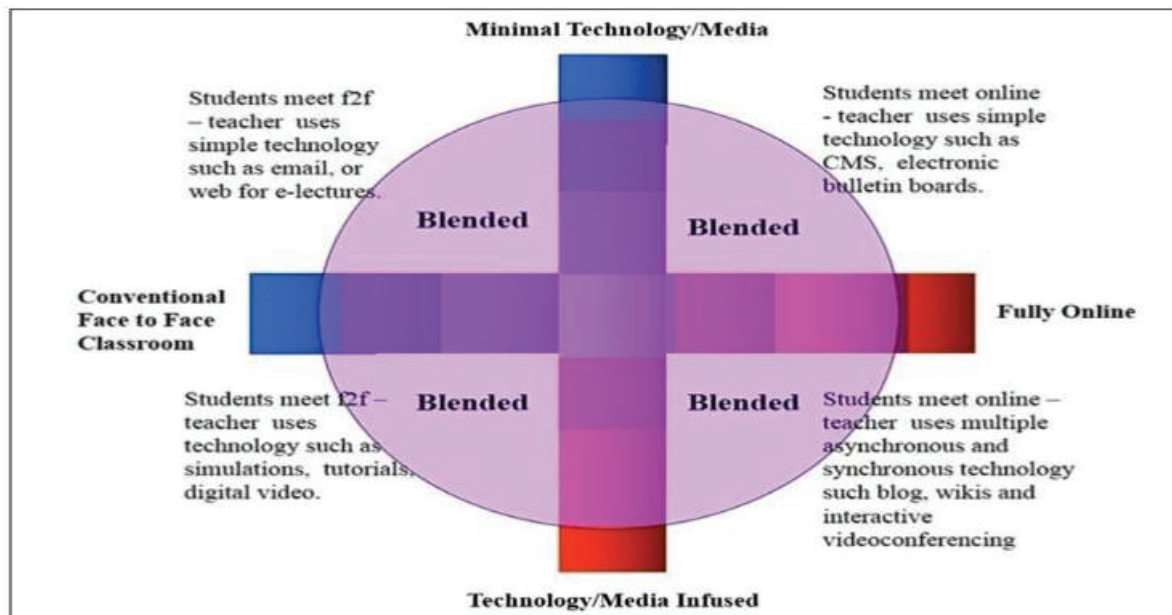
In the context of this paper, the most important are the third level and fourth level of conceptualization of learning, shown in the third quadrant (lower left) and fourth quadrant (lower right). There is presented blended learning based on the systematic use of sophisticated applications concepts, technologies and tools such as: videoconferencing, tutorials, integration of classroom and online learning and instruction, asynchronous and synchronous technologies, discussion groups (Google groups). work and collaborative document management (Google Docs) and digital skills development tools (Google Garage). Blended learning conceptualization also include using of simple (basic) applications, technologies and tools such as content management systems (CMS), e-mail, and electronic bulletin board (BBS) that are shown in the upper quadrants.

3. Research on the impact of the conceptualization of blended learning on students satisfaction

Research on the impact of conceptualization of combined learning on student satisfaction with blended learning, was conducted on the sample of 400 undergraduate and graduate students of the Faculty of Economics and Business of the University of Rijeka. The research was conducted through a questionnaire in which questions were asked about the attitudes and assessments of students that are considered in relation to each other: 1) students' preferences for traditional classroom learning, blended learning and combined learning, 2) information and communication technology (ICT) factors in blended learning and 3) goals and effects of conducting online learning.

Students were divided into two groups from the point of view of the level of conceptualization of blended learning according to the model that is shown in the Figure 2. The model shows the systematization of the levels of blended learning, that are presented and defined in the form of four quadrants. The first group of students participated in conceptualized blended learning based on the systematic use of sophisticated applications, technologies and tools such as video conferencing, asynchronous and synchronous technologies, discussion groups (Google

Groups), collaboration tools and collaborative document management (Google Documents) and digital skills development tools (Google Garage). Another group of students participated in blended learning based on simple (basic) applications, technologies and tools such as content management systems (CMS), e-mail, and bulletin board system (BBS).

Statistical methods of hypothesis testing and correlation analysis were used to investigate the influence of discussion groups on the level of student satisfaction with blended learning. The statistical significance of the difference between the arithmetic means of the first and second groups of students at the significance level of 1% was tested. Correlation analysis analyzed the relevant relationships between the level of satisfaction with blended learning, the factors of information and communication technologies (ICT) in blended learning and the goals that students perceived during blended learning.

The main hypothesis of the paper is that the conceptualization of blended learning has significant impact of the encouragement and increase of student satisfaction, interest and innovation in the context of the development of business education.
The questionnaire comprised of seven research questions, which defined the hypotheses with a view to analysing the significance of the impact of conceptualized blended learning on student satisfaction. The answers are in the form of grades from 1 to 5, based on the Likert scale for measuring attitudes. The main hypothesis is defined by the first research question (H1): "Synergy and connection of classroom education and online education enables a significant increase in the students' satisfaction, interest and innovation." The first research question (H1) confirms or rejects the main hypothesis, whereas research questions from 2 to 7 represent auxiliary hypotheses supporting the principal hypothesis. The hypotheses were framed as follows:
H1. The synergy and connection of classroom education and online education enables a significant increase in satisfaction, curiosity and innovation.
H2. Online education is more interesting and innovative than conventional classroom classes.
H3. Online education is more effective than conventional classroom classes.
H4. The learning content websites are functional.
H5. Students can employ user-friendly programmes and applications for online learning.
H6. There is a thought-out and optimal selection of information and communication technologies (technologies on Merlin, Google Meet, Discussion Groups – Google Groups, WhatsApp application and the like).
H7. There is constructive and efficient integration of information and communication technologies (ICT) in conducting online learning.

The statistical method of hypothesis testing (t-test) was used in the analysis of the research results. Based on the t-test, the significance of the difference between the mean values of answers to questions between groups of students formed on the basis of participation in conceptualized blended learning was analyzed. Table 1 shows the means, values and variances of the hypotheses.

Table 1: Hypothesis, Means and Variances

Hypothesis	Mean (G1)	Variance (G1)	Obs (G1)	Mean (G2)	Variance (G2)	Obs (G2)
H1.	**3,77**	1,04	236	**3,43**	0.95	167
H2.	**3,1**	1,51	236	**2,77**	1,510	167
H3.	**2,8**	1,44	236	**2,45**	1,390	167
H4.	**4,19**	0,55	236	**3,92**	0,790	167
H5.	**4,13**	0,71	236	**3,95**	0,760	167
H6.	**4,23**	0,66	236	**3,99**	0.88	167
H7.	**4,08**	0,67	236	**3,76**	0,880	167

Source: Authors

Table 2 shows the t-test results of the hypothesis test for difference of means.

Table 2: T-Test results

Hypothesis	df	t Stat	t Critical two-tail	Sig (two-tail)	Sig. level
H1	367	3,35	2,58	0,000	**.01**
H2	358	2,64	2,58	0,008	**.01**
H3	363	2,97	2,58	0,002	**.01**
H4	315	3,2	2,59	0,000	**.01**
H5	350	2,03	2,58	0,042	**n.s.**
H6	324	2,65	2,59	0,008	**.01**
H7	327	3,59	2,59	0,000	**.01**

Source: Authors

The main hypothesis (H1) is confirmed at the significance level of Sig. level <.01. Claculated value of mean for H1 in table 1. shows high value of average grade. T-test results in Table 2 shows significant difference between values of t Stat and t Critical two-tail of H1.

T-test results in table 2. also show that the hypotheses H2, H3, H4, H6 and H7 were confirmed. Hypothesis H5 was rejected. Based on the results of the T-test, it can be concluded that the conceptualization of blended learning has impact on student satisfaction.

4. Research of the relationship between information and communication technologies (ICT), characteristics of learning content and objectives of conceptualized blended learning

In the research, through a questionnaire, questions were formulated and systematized which define and assess the factors of information and communication technologies (T), the factors of the characteristics of the learning content (L) and the objectives of conceptualized blended learning (O):

T1. A thought-out and optimal selection of information and communication technologies (technologies on Merlin, Meet Google, Discussion Groups – Google Groups. WhatsApp application ...)

T2. Constructive and efficient integration of information and communication technologies (ICT) in conducting blended learning

L1. Presentations of learning content in online learning are clear and understandable.

L2. The learning content in the online learning system is informative and interesting.

L3. Learning content in the online learning system is innovative.
O1. Fostering creativity and innovation
O2. Ability to understand complex content and solve complex tasks, quality and intensity of interaction with students
O3. Fostering and developing skills and ability to apply learned content in business practices and real situations
O4. Education is productive, with minimal time spent, maximum impact is achieved

Table 3 shows Pearson's correlation coefficient calculated by SPSS. The values of calculated coefficient indicate that there is a significant correlation between all variables, with a moderate and high level of correlation dominating (Petz, 2004; Moore et al., 2017). The table shows that there is a high level of correlation between the attributes of learning content and activities in relation to ICT factors and goals in blended learning. There is a moderate correlation between ICT factors and blended learning goals. Correlation values that show a high level of correlation greater than 0.5 (moderate to high) are highlighted in bold.

Table 3: Correlations between ICT, learning content characteristics and objectives of conceptualized learning

		T1.	T2.	O1.	O2.	O3.	O4.	O5.	O6.	O7.
T1.	Pearson Correlation	1	**,655****	**,432****	,380**	,327**	,288**	,271**	,325**	,277**
	Sig. (2-tailed)		,000	,000	,000	,000	,000	,000	,000	,000
	N	406	406	406	406	406	406	406	406	406
T2.	Pearson Correlation	**,655****	1	**,436****	**,411****	,352**	,326**	,369**	,392**	,393**
	Sig. (2-tailed)	,000		,000	,000	,000	,000	,000	,000	,000
	N	406	406	406	406	406	406	406	406	406
O1.	Pearson Correlation	,432**	**,436****	1	**,669****	**,580****	,435**	,487**	,422**	,427**
	Sig. (2-tailed)	,000	,000		,000	,000	,000	,000	,000	,000
	N	406	406	406	406	406	406	406	406	406
O2.	Pearson Correlation	,380**	,411**	**,669****	1	**,727****	**,520****	**,586****	**,564****	**,532****
	Sig. (2-tailed)	,000	,000	,000		,000	,000	,000	,000	,000
	N	406	406	406	406	406	406	406	406	406
O3.	Pearson Correlation	,327**	,352**	,580**	**,727****	1	**,604****	**,545****	,488**	**,539****
	Sig. (2-tailed)	,000	,000	,000	,000		,000	,000	,000	,000
	N	406	406	406	406	406	406	406	406	406
O4.	Pearson Correlation	,288**	,326**	,435**	**,520****	**,604****	1	**,666****	**,581****	**,601****
	Sig. (2-tailed)	,000	,000	,000	,000	,000		,000	,000	,000
	N	406	406	406	406	406	406	406	406	406
O5.	Pearson Correlation	,271**	,369**	,487**	**,586****	**,545****	**,666****	1	**,580****	**,567****
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000		,000	,000
	N	406	406	406	406	406	406	406	406	406
O6.	Pearson Correlation	,325**	,392**	,422**	**,564****	,488**	**,581****	**,580****	1	**,631****
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000		,000
	N	406	406	406	406	406	406	406	406	406
O7.	Pearson Correlation	,277**	,393**	,427**	**,532****	**,539****	**,601****	**,567****	**,631****	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	
	N	406	406	406	406	406	406	406	406	406

Source: Authors

Figure 3 shows a model of information and communication technology (ICT) interdependence, characteristics of learning content and blended learning goals. The interdependence model emphasizes a synergistic approach to the conceptualization of blended learning that focuses on connecting ICT, learning content and learning activities and goals. The model shows the impact of ICT on the goals of blended learning directly and through learning content and activities. The model was created according to the model of interaction in blended learning, shown in Figure 1, and model of blended learning conceptualization shown in Figure 2 and based on the calculated values of the correlation between ICT, learning content and learning objectives.

Figure 3: Model of information and communication technology (ICT) interdependence, characteristics of learning content and blended learning goals
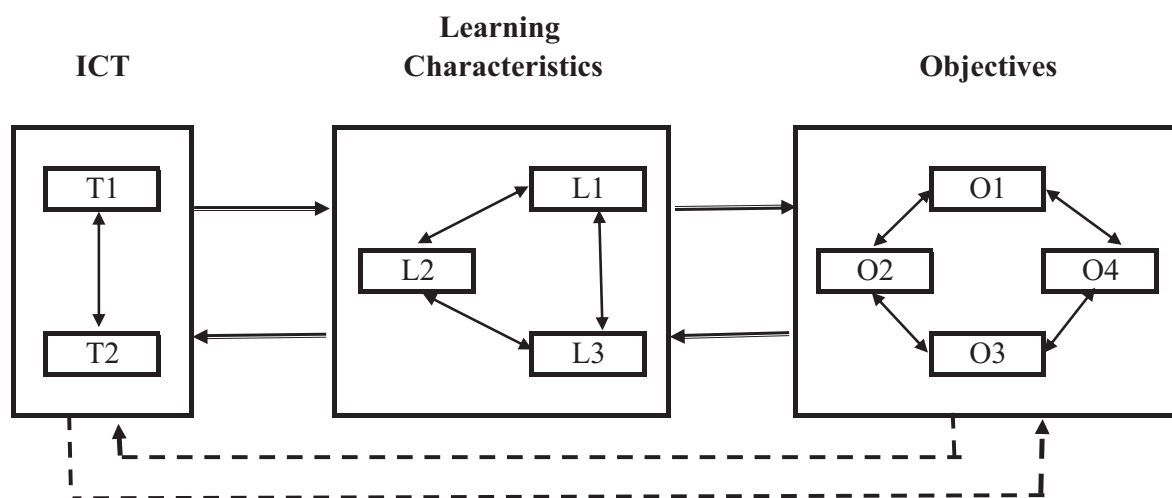
Source: Authors

The model of interdependence of information and communication technologies (ICT), characteristics of learning contents and goals of blended learning, based on research results shows a high level of influence of methods and characteristics of learning contents and activities on the goals of business education development.

5. Conclusion

Blended learning conceptualization based on the systematic use of sophisticated applications, technologies and tools makes learning more interesting and motivates students to learn and research. The paper investigates the impact of conceptualized blended learning on student satisfaction, and the relationship between information and communication technologies (ICT), the characteristics of learning content and goals in the function of business education development. The main hypothesis of the paper that the conceptualization of blended learning has significant impact of the encouragement and increase of student satisfaction, interest and innovation in the context of business education development, has been confirmed.

Statistical methods of hypothesis testing and correlation analysis were used to investigate the impact of conceptualized blended learning on the level of student satisfaction and acceptance of blended learning in the context of business education development. The statistical significance of the difference between the arithmetic means of the first and second groups of students at the significance level of 1% was tested. In the research, 7 research questions were asked through a questionnaire, on the basis of which the significance of the influence of conceptualized blended learning on student satisfaction is analyzed.

In the research, 7 research questions were asked through a questionnaire, which define hypotheses in the function of analyzing the significance of the impact of conceptualized blended learning on student satisfaction. Using the T-test method in testing the hypothesis about the significance of differences in arithmetic means, main hypothesis and 5 supported hypothesis were accepted, at the significance level of 1%, and one hypothesis was rejected.

Issues have been formulated and systematized which define and assess the factors of information and communication technologies (T), the factors of the characteristics of the learning content (L) and the goals of conceptualized blended learning. Method of Correlation analysis has been used to calculate correlation coefficients and determine the levels of correlation between the factors on the basis of which the model of interdependence of information and communication technologies (ICT), characteristics of learning content and blended learning goals in the function of developing business education. The model of relationship of information and communication technologies (ICT), characteristics of learning contents and goals of blended learning, based on research results, has been designed. Model shows a high level of influence of methods and characteristics of learning contents and activities on the goals of business education development.

This research was limited to the population of undergraduate and graduate students taking blended learning and online courses in the winter 2021 semester, in the Faculty of Economics and Business of the University of Rijeka.

Based on the results of the correlation relationships shown in Figure 3, it can be seen that there are significant correlations between ICT factors and the goals of blended teaching, at the level of weak and moderate correlation. The future work should focus on the development and using of methods, technologies and concepts of blended learning in order to strengthen the impact on the quality of blended learning to increase the correlation from weak and moderate correlations to strong correlations between ICT factors and blended learning goals. There should be research the possibilities of developing and using new technologies and concepts in blended learning, such as viewing expert lectures in user-friendly e-learning environment, online meeting and working in subgroups, virtual laboratories, and collaborative preparation of reports and concepts (Lalima, Dangwal, 2017), (Ozadowicz, 2020). Accordingly, extended and more detail surveys for students' feedback will also be carried out to collect their opinion and reflections related to their sattisfaction and effects of blended learning.

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