

# A Report on the Insights on Audit Quality Topic

---

**Aljinović Barać, Željana; Šodan, Slavko; Vuko, Tina**

*Source / Izvornik:* **Economic and Social Development: Book of Proceedings, 2022, 339 - 345**

**Conference paper / Rad u zborniku**

*Publication status / Verzija rada:* **Published version / Objavljena verzija rada (izdavačev PDF)**

*Permanent link / Trajna poveznica:* <https://um.nsk.hr/um:nbn:hr:124:167268>

*Rights / Prava:* [In copyright](#)/[Zaštićeno autorskim pravom.](#)

*Download date / Datum preuzimanja:* **2025-01-24**

*Repository / Repozitorij:*

[REFST - Repository of Economics faculty in Split](#)



Varazdin Development and Entrepreneurship Agency and Heriot-Watt University  
in cooperation with  
Ministry of Energy & Infrastructure, UAE  
University North  
Faculty of Management University of Warsaw  
Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat  
ENCGT - Ecole Nationale de Commerce et de Gestion de Tanger - Abdelmalek Essaadi University  
Polytechnic of Medimurje in Cakovec



## Economic and Social Development

88<sup>th</sup> International Scientific Conference on Economic and Social Development –  
"Roadmap to NetZero Economies and Businesses"

### Book of Proceedings

Editors:

Jelena Janjusevic, Paul Hopkinson, Irena Pandza Bajš



ISSN 1849-7535



9 771849 753006 >

Dubai, 19-20 October, 2022

**Varazdin Development and Entrepreneurship Agency and Heriot-Watt University**  
in cooperation with  
**Ministry of Energy & Infrastructure, UAE**  
**University North**  
**Faculty of Management University of Warsaw**  
**Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat**  
**ENCGT - Ecole Nationale de Commerce et de Gestion de Tanger - Abdelmalek Essaadi University**  
**Polytechnic of Medimurje in Cakovec**

Editors:

**Jelena Janjusevic, Heriot-Watt University Dubai, United Arab Emirates**

**Paul Hopkinson, Heriot-Watt University Dubai, United Arab Emirates**

**Irena Pandza Bajs, University of Zagreb, Croatia**

## **Economic and Social Development**

88<sup>th</sup> International Scientific Conference on Economic and Social Development –  
"Roadmap to NetZero Economies and Businesses"

### **Book of Proceedings**

Dubai, 19-20 October, 2022

**Title** ■ Economic and Social Development (Book of Proceedings), 88<sup>th</sup> International Scientific Conference on Economic and Social Development – "Roadmap to NetZero Economies and Businesses"

**Editors** ■ Jelena Janjusevic, Paul Hopkinson, Irena Pandza Bajz

**Scientific Committee / Programski Odbor** ■ Marijan Cingula (President), University of Zagreb, Croatia; Paul Hopkinson (Vice-President), Heriot-Watt University, Dubai, UAE); Jelena Janjusevic (Vice-President), Heriot-Watt University, Dubai, UAE); Sannur Aliyev, Azerbaijan State University of Economics, Azerbaijan; Ayuba A. Aminu, University of Maiduguri, Nigeria; Anona Armstrong, Victoria University, Australia; Gouri Sankar Bandyopadhyay, The University of Burdwan, Rajbati Bardhaman, India; Haimanti Banerji, Indian Institute of Technology, Kharagpur, India; Victor Beker, University of Buenos Aires, Argentina; Asmae Benthami, Mohammed V University, Morocco; Alla Bobyleva, The Lomonosov Moscow State University, Russia; Leonid K. Bobrov, State University of Economics and Management, Novosibirsk, Russia; Rado Bohinc, University of Ljubljana, Slovenia; Djani Bunja, University of Zadar, Croatia; Adnan Celik, Selcuk University, Konya, Turkey; Angelo Maia Cister, Federal University of Rio de Janeiro, Brazil; Mirela Cristea, University of Craiova, Romania; Taoufik Daghi, Mohammed V University, Morocco; Oguz Demir, Istanbul Commerce University, Turkey; T.S. Devaraja, University of Mysore, India; Onur Dogan, Dokuz Eylul University, Turkey; Darko Dukic, University of Osijek, Croatia; Gordana Dukic, University of Osijek, Croatia; Alba Dumi, Vloara University, Vlore, Albania; Galina Pavlovna Gagarinskaya, Samara State University, Russia; Tomislav Galovic, University of Rijeka, Faculty of Economics and Business, Croatia; Mirjana Gligoric, Faculty of Economics - Belgrade University, Serbia; Mehmet Emre Gorgulu, Afyon Kocatepe University, Turkey; Klodiana Gorica, University of Tirana, Albania; Aleksandra Grobelna, Gdynia Maritime University, Poland; Liudmila Guzikova, Peter the Great Saint-Petersburg Polytechnic University, Russia; Anica Hunjet, University North, Koprivnica, Croatia; Khalid Hammes, Mohammed V University, Morocco; Oxana Ivanova, Ulyanovsk State University, Ulyanovsk, Russia; Irena Jankovic, Faculty of Economics, Belgrade University, Serbia; Myrl Jones, Radford University, USA; Hacer Simay Karaalp, Pamukkale University, Turkey; Dafna Kariv, The College of Management Academic Studies, Rishon Le Zion, Israel; Hilal Yildirim Keser, Uludag University, Bursa, Turkey; Sophia Khalimova, Institute of Economics and Industrial Engineering of Siberian Branch of Russian Academy of Science, Novosibirsk, Russia; Marina Klacmer Calopa, University of Zagreb, Croatia; Igor Klopotan, Medjimursko Veleuciliste u Cakovcu, Croatia; Vladimir Kovsca, University of Zagreb, Croatia; Goran Kozina, University North, Koprivnica, Croatia; Dzenan Kulovic, University of Zenica, Bosnia and Herzegovina; Eduardo Leite, University of Madeira, Portugal; Robert Lewis, Les Roches Gruyere University of Applied Sciences, Bulle, Switzerland; Ladislav Lukas, Univ. of West Bohemia, Faculty of Economics, Czech Republic; Mustapha Machrafi, Mohammed V University, Morocco; Joao Jose Lourenco Marques, University of Aveiro, Portugal; Pascal Marty, University of La Rochelle, France; Vaidotas Matutis, Vilnius University, Lithuania; Daniel Francois Meyer, North West University, South Africa; Marin Milkovic, University North, Koprivnica, Croatia; Abdelhamid Nechad, ENCGT-Abdelmalek Essaadi University, Morocco; Gratiela Georgiana Noja, West University of Timisoara, Romania; Zsuzsanna Novak, Corvinus University of Budapest, Hungary; Tomasz Ochowski, University of Warsaw, Poland; Barbara Hecceg Paksic, University of Osijek, Croatia; Vera Palea, Universita degli Studi di Torino, Italy; Dusko Pavlovic, Libertas International University, Zagreb, Croatia; Igor Pihir, University of Zagreb, Croatia; Damir Piplica, Split University-Department of Forensic Sciences, Croatia; Diana Plantic Tadic, VERN' University, Croatia; Dmitri Pletnev, Chelyabinsk State University, Russian Federation; Mirosław Przygoda, University of Warsaw, Poland; Karlis Purmalis, University of Latvia, Latvia; Nicholas Recker, Metropolitan State University of Denver, USA; Kerry Redican, Virginia Tech, Blacksburg, USA; David Resende, University of Aveiro, Portugal; Humberto Ribeiro, University of Aveiro, Portugal; Robert Rybnicek, University of Graz, Austria; Luka Samarzija, University of Rijeka, Faculty of Economics and Business, Croatia; Tomasz Studzieniecki, Academia Europa Nostra, Poland; Elzbieta Szymanska, Bialystok University of Technology, Poland; Katarzyna Szymanska, The State Higher School of Vocational Education in Ciechanow, Poland; Ilaria Tutore, University of Naples Parthenope, Italy; Sandra Raquel Alves, Polytechnic of Leiria, Portugal; Joanna Stawska, University of Lodz, Poland; Stanislaw Walukiewicz, Bialystok University of Technology, Poland; Thomas Will, Agnes Scott College, USA; Bing Xu, Edinburgh Business School, Heriot-Watt University, UK; Li Yongqiang, Victoria University, Australia; Peter Zabielskis, University of Macau, China; Silvija Zeman, Medjimursko Veleuciliste u Cakovcu, Croatia; Tao Zeng, Wilfrid Laurier University, Waterloo, Canada; Snezana Zivkovic, University of Nis, Serbia.

**Review Committee / Recenzentski Odbor** ■ Marina Klacmer Calopa (President); Ana Aleksic; Sandra Raquel Alves; Ayuba Aminu; Mihovil Andjelinovic; Josip Americ; Lidija Bagaric; Tomislav Bakovic; Sanja Blazevic; Leonid Bobrov; Ruzica Brecc; Anita Ceh Casni; Iryna Chernysh; Mirela Cristea; Oguz Demir; Stjepan Dvorski; Robert Fabac; Ivica Filipovic; Sinisa Franjic; Fran Galetic; Mirjana Gligoric; Tomislav Globan; Anita Goltnik Urnaut; Tomislav Hecceg; Jelena Janjusevic; Irena Jankovic; Emina Jerkovic; Dafna Kariv; Oliver Keser; Hilal Yildirim Keser; Martina Dragija Kostic; Tatjana Kovac; Vladimir Kovsca; Eduardo Leite; Angelo Maia Cister; Katarina Marosevic; Vaidotas Matutis; Marjana Merckac Skok; Daniel Francois Meyer; Natanya Meyer; Josip Mikulic; Ljubica Milanovic Glavan; Guenter Mueller; Ivana Nacinovic Braje; Zlatko Nedelko; Gratiela Georgiana Noja; Zsuzsanna Novak; Alka Obadic; Claudia Ogrea; Igor Pihir; Najla Podrug; Vojko Potocan; Dinko Primorac; Zeljka Primorac; Sanda Renko; David Resende; Humberto Ribeiro; Vlasta Roska; Souhaila Said; Luka Samarzija; Armando Javier Sanchez Diaz; Tomislav Sekur; Lorena Skuffic; Mirko Smoljic; Petar Soric; Mario Spremic; Matjaz Stor; Tomasz Studzieniecki; Lejla Tijanic; Daniel Tomic; Boris Tusek; Rebeka Daniela Vlahov; Thomas Will; Zoran Wittine; Tao Zeng; Grzegorz Zimon; Snezana Zivkovic; Berislav Zmuk.

**Organizing Committee / Organizacijski Odbor** ■ Sime Vucetic (President); Jelena Janjusevic (Vice-President); Domagoj Cingula (Vice-President); Paul Hopkinson; Djani Bunja; Marina Klacmer Calopa; Spomenko Kesina; Erlino Koscak; Tomasz Ochowski; Mirosław Przygoda; Tomasz Studzieniecki; Vlatka Ruzic; Luka Samarzija; Michael Stefulj; Marko Sundov.

**Publishing Editor** ■ Spomenko Kesina, Domagoj Cingula

**Publisher** ■ **Design** ■ **Print** ■ Varazdin Development and Entrepreneurship Agency, Varazdin, Croatia / University North, Koprivnica, Croatia / Heriot-Watt University Dubai, Dubai, United Arab Emirates / Ministry of Energy & Infrastructure, Dubai, United Arab Emirates / Faculty of Management University of Warsaw, Warsaw, Poland / Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat, Morocco / ENCGT - Ecole Nationale de Commerce et de Gestion de Tanger - Abdelmalek Essaadi University, Tangier, Morocco / Polytechnic of Medimurje in Cakovec, Cakovec, Croatia

**Printing** ■ Online Edition

**ISSN 1849-7535**

The Book is open access and double-blind peer reviewed.

Our past Books are indexed and abstracted by ProQuest, EconBIZ, CPCI (Web of Science) and EconLit databases and available for download in a PDF format from the Economic and Social Development Conference website: <http://www.esd-conference.com>

© 2022 Varazdin Development and Entrepreneurship Agency, Varazdin, Croatia; University North, Koprivnica, Croatia; Heriot-Watt University Dubai, Dubai, United Arab Emirates; Ministry of Energy & Infrastructure, Dubai, United Arab Emirates; Faculty of Management University of Warsaw, Warsaw, Poland; Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat, Morocco; ENCGT - Ecole Nationale de Commerce et de Gestion de Tanger - Abdelmalek Essaadi University, Tangier, Morocco; Polytechnic of Medimurje in Cakovec, Cakovec, Croatia. All rights reserved. Authors are responsible for the linguistic and technical accuracy of their contributions. Authors keep their copyrights for further publishing.

## **CONTENTS**

<b>SMART TOURISM TECHNOLOGY USAGE – THE SUPPLY AND THE DEMAND PERSPECTIVE</b> .....	<b>1</b>
Marina Barkidija Sotosek, Natasa Slavic, Nikolina Seric Honovic	
<b>WHAT DRIVES LEVELS OF CO2 EMISSIONS – INTERNATIONAL COMPARISON BASED ON BROADEN KAYA IDENTITY</b> .....	<b>11</b>
Daniel Tomic, Ines Kersan-Skabic	
<b>ANALYSIS OF THE SCOPE AND USE OF VARIOUS SYSTEM STANDARDS</b> .....	<b>25</b>
Dejan Vasovic, Snezana Zivkovic, Tamara Radjenovic	
<b>THE PERSPECTIVES OF WELLNESS TOURISM DEVELOPMENT IN THE REPUBLIC OF CROATIA</b> .....	<b>35</b>
Petar Kurecic, Ema Svec	
<b>BUSINESS CONTRIBUTION OF KEY DIGITAL TECHNOLOGIES TO THE GOALS OF DIGITAL BUSINESS TRANSFORMATION</b> .....	<b>42</b>
Melita Draganic, Manal Ait Daoud	
<b>ENERGIEWENDE: ENERGY PLAN IN GERMANY</b> .....	<b>55</b>
Junran Huang, Yujia Han	
<b>MODEL FOR COSTS CALCULATION IN MANURE APPLICATION</b> .....	<b>65</b>
Ruzica Loncaric, Iva Nikolin, Boris Ravnjak, Franjo Nemet, Vladimir Ivezic, Sanja Jelic Milkovic, Rosemary Vukovic, Andrijana Rebekic, Zdenko Loncaric	
<b>SUSTAINABLE TOURISM IN EUROPE: A PRISMA-COMPLIANT SYSTEMATIC REVIEW OF DEA APPLICATIONS</b> .....	<b>75</b>
Katerina Fotova Cikovic, Marin Milkovic, Bordin Rassameethes	
<b>KNOWLEDGE AND SKILLS IN THE TIME OF DIGITALIZATION</b> .....	<b>88</b>
Nikola Staffenova, Alzbeta Kucharcikova, Maria Durisova	
<b>SITUATION AND POSSIBLE IMPROVEMENTS OF ENVIRONMENTAL PROTECTION IN EXTREMELY UNDER-DEVELOPED MUNICIPALITIES IN SERBIA</b> .....	<b>99</b>
Slobodan Milutinovic, Snezana Zivkovic, Tamara Radenovic	
<b>THE IMPACT OF MERGER AND ACQUISITION ON SHAREHOLDERS WEALTH: EVIDENCE FROM MENA REGION</b> .....	<b>108</b>
Hala Hallak	
<b>SUSTAINABLE TOURISM DEVELOPMENT, EVIDENCE BASED APPROACH</b> ..	<b>121</b>
Ljubomir Janjusevic	
<b>PERFORMANCE ANALYZES OF CROATIAN OPEN-ENDED INVESTMENT FUNDS WITH PUBLIC OFFERING (UCITS FUNDS)</b> .....	<b>134</b>
Ivona Damis, Ivana Dundek Kokotec, Marina Klacmer Calopa	

<b>LIFE SATISFACTION AND ITS DETERMINANTS – CONVERGENCE OR DIVERGENCE IN THE EUROPEAN UNION? .....</b>	<b>145</b>
Anna Skorska	
<b>MANAGING ORGANIZATIONS TOWARD NET-ZERO PERFORMANCE .....</b>	<b>155</b>
Tamara Radenovic, Bojan Krstic, Vladimir Radivojevic	
<b>EMPLOYEES' SATISFACTION IN THE CONTEXT OF REMOTE WORK .....</b>	<b>166</b>
Andzela Veselova	
<b>COMPARISON OF INTANGIBLE FACTORS OF EMPLOYEE SATISFACTION IN PRIVATE AND STATE-OWNED ENTERPRISES IN THE REPUBLIC OF CROATIA WITH MATERIAL FACTORS OF EMPLOYEE SATISFACTION IN WORKPLACES - HIGH SALARY .....</b>	<b>175</b>
Ivana Miklosevic, Ana Markuz, Stella Hrvatin	
<b>FINANCIAL INSTRUMENT PROPOSAL FOR TURKEY TO FIGHT CLIMATE CHANGE: CARBON TAX OR CARBON TRADING? .....</b>	<b>189</b>
Fatih Peksen, Mustafa Goktug Kaya, Yigit Yildiz, Perihan Hazel Kaya	
<b>ANALYSIS AND TRENDS OF MARITIME PASSENGER TRAFFIC IN EUROPEAN UNION.....</b>	<b>200</b>
Daniela Gracan, Alen Jugovic, Dea Aksentijevic, Laura Gracan, Marina Barkidija Sotosek	
<b>REGIONS WITH GEOGRAPHICAL SPECIFICITIES AND TERRITORIAL COHESION IN THE EUROPEAN UNION.....</b>	<b>214</b>
Lela Tijanic	
<b>FOSTERING INNOVATION AND SUSTAINABILITY IN BUTHAN'S NETZERO ECONOMY.....</b>	<b>223</b>
Luis Barbosa	
<b>NETNOGRAPHY AS A RESEARCH TOOL IN THE SPORTS INDUSTRY – A LITERATURE REVIEW .....</b>	<b>234</b>
Marko Sredojevic, Alica Grilec, Irena Pandza Bajcs	
<b>CHALLENGES FACED BY MUNICIPALITIES IN BULGARIA IN THE IMPLEMENTATION OF ELECTRONIC ADMINISTRATIVE SERVICES .....</b>	<b>243</b>
Elitsa Lazarova, Nadezhda Veselinova, Yuliyana Gospodinov, Mariela Stoyanova	
<b>SOCIAL ENTERPRISES AS A MEANS OF URBAN POVERTY MITIGATION: AN EXPLORATION .....</b>	<b>253</b>
Praveen Balakrishnan Nair, Daryl Loh Wei Meng	
<b>HARMONIZING THE TVET LANDSCAPE IN MALAYSIA VIA INDUSTRY-DRIVEN COLLABORATIONS: AN INDUSTRIAL PERSPECTIVE .....</b>	<b>262</b>
Gowrie Vinayan, Siow May Ling, Davindran Harikirishanan	
<b>A BIBLIOMETRIC ANALYSIS ON THE RESEARCH TREND OF INTERNATIONALIZATION WITH SUSTAINABILITY.....</b>	<b>271</b>
Aastha Soni, Pooja Sharma	

<b>CIRCULAR ECONOMY OF PLASTICS: A PRACTICAL APPLICATION IN VIETNAM.....</b>	<b>279</b>
Nika Salvetti	
<b>PRESENT AND FUTURE OF LIFESTYLE MEDIA IN MODERN SUSTAINABLE SOCIETY.....</b>	<b>299</b>
Ivona Culo, Gordana Tkalec, Mario Tomisa	
<b>COUNTRY IMAGE EFFECT AND BRAND IMAGE INFLUENCE ON CONSUMER PERCEPTION OF LUXURY FASHION PRODUCTS: A CASE OF UAE MADE LUXURY FASHION.....</b>	<b>310</b>
Anahita Naeimi	
<b>THE SIGNIFICANCE OF SOCIAL BENEFIT ORIENTATION IN MARKET ORIENTATION FOR THE REALISATION OF THE STRATEGIC MARKETING CONCEPT OF SUSTAINABILITY.....</b>	<b>320</b>
Silvije Jercinovic, Marija Ham	
<b>EXPLORING THE IMPACT OF ONLINE ADVERTISING ON STUDENTS' CONSUMER BEHAVIOUR.....</b>	<b>330</b>
Gordana Dukic, Darko Dukic, Goran Kozina	
<b>A REPORT ON THE INSIGHTS ON AUDIT QUALITY TOPIC .....</b>	<b>339</b>
Zeljana Aljinovic Barac, Slavko Sodan, Tina Vuko	
<b>THE PASS-THROUGH OF GLOBAL OIL PRICES TO CONSUMER PRICE INDEX: A PANEL DATA ANALYSIS.....</b>	<b>346</b>
Ahmed Shoukry Rashad, Mona Mostafa El-Sholkamy	
<b>SAVINGS AND DEBTS AS A SOURCES OF FINANCING CONSUMPTION OF POLISH HOUSEHOLDS.....</b>	<b>352</b>
Urszula Grzega	
<b>MANAGERS FACTORS IN DELEGATING WORK TASKS TO ASSOCIATES.....</b>	<b>361</b>
Ivana Miklosevic, Ivana Stanic, Sanja Knezevic Kusljic	
<b>THE ROAD TOWARDS SUSTAINABILITY - FACING THE PARADOX OF PROGRESS .....</b>	<b>369</b>
Nancy Diana Panta	
<b>SOCIALLY AND ENVIRONMENTALLY RESPONSIBLE BUSINESS PRACTICES IN SMES: A CASE STUDY OF CROATIA .....</b>	<b>379</b>
Ana Zrnic	
<b>GREEN AND DIGITAL TRANSITION IN THE FUNCTION OF GROWTH AND DEVELOPMENT OF CROATIA .....</b>	<b>389</b>
Drazen Cucic, Mladen Pancic, Zeljka Zavisic	
<b>SPEECH FRIGHT MANAGEMENT IN BUSINESS PUBLIC APPEARANCES .....</b>	<b>404</b>
Ana Globocnik Zunac, Lea Labas, Niksa Svilicic	

## A REPORT ON THE INSIGHTS ON AUDIT QUALITY TOPIC

**Zeljana Aljinovic Barac**

*University of Split, Faculty of Economics, Business and Tourism  
Cvite Fiskovića 5, 21000 Split, Croatia  
zbarac@efst.hr*

**Slavko Sodan**

*University of Split, Faculty of Economics, Business and Tourism  
Cvite Fiskovića 5, 21000 Split, Croatia  
ssodan@efst.hr*

**Tina Vuko**

*University of Split, Faculty of Economics, Business and Tourism  
Cvite Fiskovića 5, 21000 Split, Croatia  
tina.vuko@efst.hr*

### **ABSTRACT**

*This paper provides theoretical background and literature review on the audit quality (AQ), dealing with the questions of AQ definition and measurement, and whether Big 4 auditors provide higher AQ than non-Big 4 auditors. Accounting standards require a high-quality financial reporting system to provide decision-useful information that is relevant, and faithfully represents underlying economic reality of the firm's activities and its financial condition. Both academics and practitioners agree that an essential feature of the financial reporting process is financial reporting quality (FRQ), but still there is no consensus on its definition and meaning. FRQ is commonly described as a function of AQ, the quality of the firm's financial reporting system which maps its underlying economics into financial reports, and its innate characteristics which determine its underlying economics. However, there is also no consensus on definition and measurement of AQ because the amount of assurance provided by auditors is unobservable. The contribution of this paper is the review of the most relevant AQ measures and discussion on their advantages and disadvantages. Although most of the previous research deals with the output-based proxies on the auditor supply side, recently, the focus has turned to input-based proxies on the client demand side, such as audit fees and auditor size. Thus, this paper additionally deals with homogeneity of audit quality across audit firms, i.e., reconsidering whether large audit firms deliver higher audit quality, as signalled by their reputation and by the "deep-pockets" hypothesis. However, the arguments why smaller audit firms could provide comparable audit quality will be debated, and strengths and weaknesses when engaging Big N or non-big N auditors will be listed.*

**Keywords:** *audit quality, Big N auditor, financial reporting quality*

### **1. INTRODUCTION**

The importance of financial reporting quality is well acknowledged by academics, standard setters, and market regulators striving to develop appropriate accounting standards and corporate governance framework. According to IASB (2018), a high-quality financial reporting system should provide useful information to capital providers and other stakeholders, which is relevant and faithfully represents the underlying economic reality of the company in making investment, credit, and similar resource-allocation decisions. The crucial element of the financial reporting process is the financial reporting quality (FRQ), but the problem is that there is still no consensus on its definition and meaning. FRQ is commonly described as a function of audit quality (AQ), the quality of the firm's financial reporting system which maps its



underlying economics into financial reports, and its innate characteristics which determine its underlying economics. The additional difficulty is no consensus on the definition and measurement of AQ because the amount of assurance provided by auditors is unobservable. Although the FRQ topic is always actual, it becomes especially relevant when corporate scandals, like the Agrokor Group scandal in Croatia, occur. In 2015, with nearly 60,000 employees and sales revenue of €6.5 bn, Deloitte (2016) ranked the Agrokor Group in the eleventh place of largest overall company in Central Europe according to its' CE TOP 500 ranking. By the end of 2016, after the scandal, a financial audit of Agrokor undertaken by PWC and commissioned by the extraordinary administration revealed different accounting irregularities that have vastly overstated Agrokor's financial results as reported in the Consolidated Annual Report of Agrokor Group for 2016<sup>1</sup>. In the first part, the paper reviews the most relevant AQ measures, discussing the auditor size proxy as a commonly used input-based measure on the client demand side. Next, after describing the single-country setting and its specificities, an extensive review of the relevant previous research in Croatia is presented. The paper ends with concluding remarks.

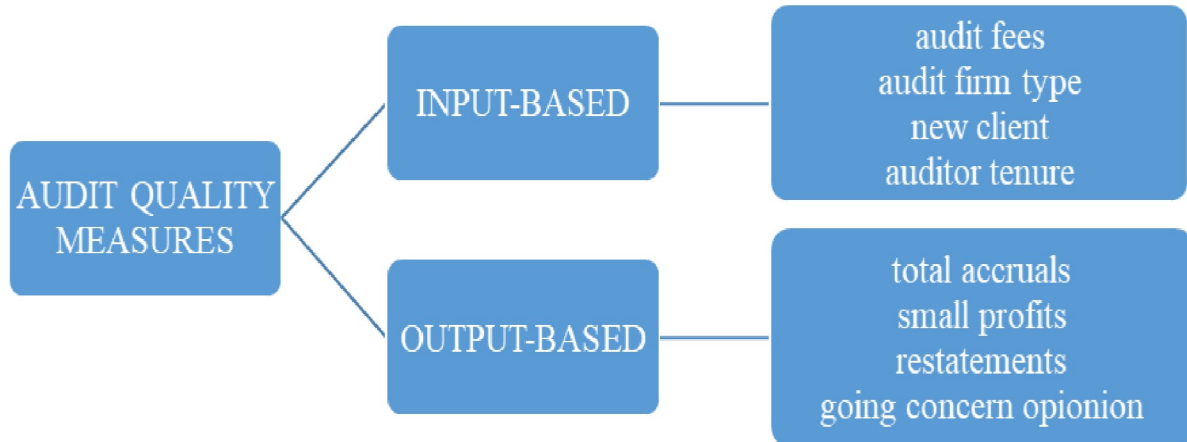
## **2. AUDIT QUALITY MEASUREMENT**

The AQ is the most commonly defined as the joint probability that an existing material error is detected and reported by an auditor (DeAngelo, 1981). The problem for empirical research is that AQ and FRQ are often inseparable in terms of observable financial reporting outcomes because researchers are limited to proxy both variables with quality measures based on audited financial statements only. However, according to Gaynor et al. (2016), FRQ and AQ are distinct constructs, and research can provide more significant insights into each if it recognizes the distinctions between them. In principle, an audit is supposed to improve FRQ. However, it is unclear which earnings attributes are considered by auditors as an indication of high FRQ. In his recent statement, International Federation of Accountants (IFAC) CEO Kevin Dancsey emphasized that high-quality audits are the backbone of the global financial system and called to "collect, analyze, and publish more and better data – both aggregate and granular – on audit quality with the goal of enhancing transparency and promoting higher audit quality" (IFAC, 2020). While it is likely that low pre-audit FRQ will remain low if AQ is not sufficiently high, it is not likely that high FRQ will deteriorate if AQ is low. The reason is that auditors probably will not make adjustments to financial statements if they are not materially misstated in order to downgrade the quality of fairly presented financial statements, even if AQ is low. On the other hand, if AQ is low and pre-audit FRQ is low due to earnings management, audit adjustments will not improve FRQ. Moreover, the risk of giving a false positive opinion on audited financial statements in such a situation increases. Nowadays, the use of terms AQ and FRQ has been extended broadly, and continual attempts at refining the analyses, usually revealing considerable inventiveness and more sophisticated methodology, characterize these researches. In their overview of AQ indicators, FEE (2016) classifies measures as (1) mandatory, rules-based, or more flexible, principles-based; (2) qualitative or quantitative; and (3) whether their reporting is made public - meaning that all the key stakeholders may assess them, or kept private for audit committee use only. However, researchers generally classified AQ proxies as input-based or output-based measures. Output-based attributes focus on the supply-side factors and measure the level of audit quality of the audit process' outputs. On the other hand, input-based attributes analyze the effects of demand-side factors, i.e., from the client side, who must choose AQ based on observable inputs. An extensive overview of AQ measurement proxies can be found in the work of DeFond and Zhang (2014), Lennox et al. (2016), and Rajgopal et al. (2021).

---

<sup>1</sup> For more details on the type and amounts of accounting misstatements, see: <https://www.agrokor.hr/en/news/audit-findings-for-fy-2016-consolidated-group-and-agrokor-d-d/>

In their papers, those authors provide a framework for choosing adequate proxies and how to interpret them. However, DeFond and Zhang (2014) conclude that no single measure can not reflect the complete picture of AQ and recommend that researchers use multiple proxies from different categories to take advantage of their strengths and attenuate their weaknesses, if possible. Furthermore, it should be noticed that some AQ measures like accrual quality (total accruals) or benchmark beating (small profits) can be commonly found in literature dealing with FRQ. The objective evaluation of AQ is further complicated by the need to understand the context – i.e., the perspective from which audit quality is assessed. Classification and most relevant AQ proxies are presented in the picture below.



*Figure 1: Classification of AQ proxies*

*(Source: Author's adoption according to DeFond and Zhang (2014), Lennox et al.(2016), and Rajgopal et al. (2021))*

Although most of the previous research deals with the output-based proxies on the auditor supply side, recently, the focus has turned to the client demand side and input-based proxies, such as audit fees and auditor size. However, the direction of the auditor size variable's influence on AQ remains a controversial issue. Auditor size proxy is commonly defined as a dichotomous variable of Big N and non-Big N auditors, and most of the literature on this topic suggests that Big N audit firms provide higher AQ than non-Big N auditors. This Big N effect is usually explained by the reputation hypothesis and the "deep-pockets" hypothesis. DeAngelo (1981) argues that a single client is not so important for large audit firms, while if they misreport for that single client, they can lose their reputation and entire clientele. Moreover, large audit firms are incentivized to lower litigation risk and protect their reputation because of their heavy spending on building their brand names and their "deep pockets" (Simunic & Stein, 1987). The recent findings of Lennox and Lee (2020) offer an alternative explanation that the Big N auditor's clients are less likely to misreport and, consequently, are less likely to be sued. In their work, they examined the frequency of lawsuits against audit firms on a large sample of accounting lawsuits that allege financial reporting failures. Results show that Big N auditors are significantly less likely to be sued than non-Big N auditors, but the payouts from auditors are significantly larger when the auditor is a Big N firm rather than a non-Big N firm. On the other hand, when clients are sued, the payouts are smaller in the presence of a Big N auditor. Nevertheless, Francis (2004) points to the troubling aspect of this line of research. An alternative explanation may be that companies with high FRQ are more likely to select Big N auditors.

Thus, it is not that high AQ improves the quality of clients' financial statements; rather, it may simply be that companies with high-quality financial statements select high-quality auditors. On the contrary, there are also some arguments why smaller audit firms could provide comparable AQ. According to Lawrence et al. (2011), both types of auditors are held to the same regulatory framework and professional standards, so the level of AQ should be comparable. Besides, non-Big N auditors are usually city specialists or industry specialists and have superior knowledge of the local markets and better relations with their clients, enabling them to detect irregularities better and improve AQ (Rajgopal et al., 2021). Also, the research should control for clients' differences between Big N and non-Big N auditors. For example, Lawrence et al. (2011) findings suggest that differences in audit quality proxies between Big-4 and non-Big 4 auditors largely reflect client characteristics, especially client size. Despite these results, Lawrence et al. (2011) emphasized that their study has not resolved the question of the Big N effect, although they encourage other researchers to explore alternative methodologies that separate client characteristics from audit-quality effects. DeFond et al. (2017) stated that the absence of a Big N effect would overturn a large body of the literature and question the basic understanding of the fundamental drivers of audit quality.

### **3. LITERATURE REVIEW ON CROATIAN COUNTRY-SPECIFIC RESEARCH**

A significant number of research studies dealing with different aspects of AQ can be found in literature. However, given the single-country setting and its specificities, observed results may be country-specific driven by the differences in the measurement of variables and methodological approach. Aljinović Barać and Bilić (2021) describe Croatia as a macro-based accounting system with an underdeveloped capital market, and point out that FRQ and information disclosure practices of these countries differ in comparison to capital market-oriented economies. They explain it by the influence of various economic, social, and political factors, like the legal system, stage of economic growth and development, ownership, activities of enterprises, etc. Thus, previous relevant research on AQ in Croatia is presented in more detail. The beginnings of the auditing profession in Croatia date to early 1990s, as a result of communism's fall and transition from a centrally-planned to an open market economy, along with the emergency of the capital market. The main drivers of the development of AQ were the requirements to align regulation with EU *acquis communautaire* to join the EU in 2013, and oversight of the statutory audit. However, the litigation risk against the auditors that may impact both FRQ and AQ is relatively low. One of the pioneering works of Vuko (2010) analyzed the audit market structure in Croatia to find out whether mergers and dissolutions in the audit markets have raised the level of concentration, thereby leading to reduced competition, and found that the audit market in Croatia is moderately concentrated. Sever Mališ and Brozović (2015) findings reveal that such a trend continues, so the audit market for listed companies is moderate to highly concentrated, with a decrease in 2013 compared to 2008. In addition, the authors identify significant and positive relations between audit firm type and client size, which confirms that larger companies tend to choose Big N auditors. Bilić (2016) examined the relation between AQ and FRQ, using the voluntary disclosure ratio to measure FRQ and audit firm type to approximate AQ. Results show that Big N auditor clients have better FRQ as they voluntarily disclose more information in annual report than non-Big N auditor clients. To the extension of this research, Aljinović Barać and Bilić (2021) determined the level of FRQ in listed companies in Croatia and identified company characteristics that affect it. Authors apply the M5 algorithm to identify the factors that influence the FRQ and find differences depending on the type of auditor. Aljinović Barać et al. (2011) investigated the association between companies' characteristics and their auditor choice decision to determine whether companies with better financial performance select auditors of higher quality, as indicated by their reputation.

Namely, a multinomial logistic regression is applied to test this association and the obtained results indicate that highly profitable companies owned by foreign investors with a low level of financial leverage and a high level of total accruals are more likely to select large audit firms. Contrary, small, non-profitable, highly leveraged companies owned by a government or private domestic entities/individuals are more likely to select small audit firms. Finally, it is important to stress that a significant limitation in researching this topic in Croatia is the relatively shallow and illiquid capital market. Namely, regulated market of the Zagreb stock exchange (ZSE) consist of three market segments: Prime, Official and Regular market. Initial listing requirements and ongoing obligations are more extensive for companies listed on the Official and the Prime Market than on the Regular market. The essential problem is that, by the end of 2020, 72% or 66 companies are listed on the Regular market, twenty companies are listed on the Official Market, and six companies only are listed on the Prime Market (OECD, 2021). At the same time, the crucial advantage for research on the Croatian institutional framework is the legal requirement for capital market issuers to report both unaudited and audited annual financial reports publicly. As Aljinovic Barac et al. (2017) noticed, financial reporting transparency in Croatia has increased significantly since 2008 when the new Capital Market Act came into force, and the publicly available Register of Annual Financial Reports was established. According to article 468 of the Capital Market Act (2018), the issuer of shares who has its registered office in the Republic of Croatia and whose shares are admitted to a regulated market should publish its quarterly financial report for the 4<sup>th</sup> quarter as soon as possible, but at the latest within sixty days. Additionally, ZSE requires issuers to make their audited annual financial statements public at the latest four months after the end of each financial year. Therefore, unaudited and audited annual financial statements for each company may be paired and compared.

#### **4. CONCLUSION**

This paper provides theoretical background and literature review on the AQ, dealing with the questions of AQ definition and measurement and whether Big N auditors provide higher AQ than non-Big N auditors. By giving the example of Croatia's single-country setting and its specificities, the authors explain why observed results may be country-specific, driven by the differences in the measurement of variables and methodological approach. Also, an extensive review of the most influential research and previous relevant research in Croatia is presented. Following recent trends, authors focus on auditor size as an input-based proxy of AQ. They reconsider whether large audit firms deliver higher audit quality, as signaled by their reputation and the "deep-pockets" hypothesis, and whether smaller audit firms can provide comparable audit quality to big ones. Finally, it can be concluded that AQ remains controversial construct both to define and measure because the amount of assurance provided by auditors is unobservable. Researchers are continuously dealing with the questions of what audit quality means, how it could be defined and how it could be measured. Nevertheless, this issue should be emphasized among all relevant stakeholders, especially regulators, oversight bodies, professional bodies, and audit firms. Even though it is hard to find a common approach to measuring AQ, relevant bodies worldwide should unite efforts and construct a unique measure of AQ acceptable to all of them. Last but not least problem for empirical research is the inseparability of AQ and FRQ in terms of observable financial reporting outcomes, so it is crucial to disentangle the effect of AQ on FRQ.

***ACKNOWLEDGEMENT:** This work has been fully supported by Croatian Science Foundation under the project IP-2020-02-9372 "Disentangling Financial Reporting Quality".*

## LITERATURE:

1. Agrokor (09.10.2017.) *Audit findings for FY 2016 Consolidated Group and Agrokor d.d.* Retrieved 01.08.2022. from <https://www.agrokor.hr/en/news/audit-findings-for-fy-2016-consolidated-group-and-agrokor-d-d/>
2. Aljinović Barać, Ž., Šodan, S., Vuko, T. (2011). Auditors Selection and Companies' Characteristics - Case of Croatian Capital Market. In Afrić Rakitovac, K.; Šugar, V.; Bevanda, V. (ed.). *The 5th International Scientific Conference Proceedings: Entrepreneurship and Macroeconomic Management: Reflections on the World in Turmoil.* Pula: Juraj Dobrila University of Pula, Department of Economics and Tourism Dr.Mijo Mirković, 2-22.
3. Aljinović Barac, Ž., Vuko, T., Šodan, S. (2017). What can auditors tell us about accounting manipulations? *Managerial Auditing Journal*, 32 (8), 788-809. <https://doi.org/10.1108/MAJ-03-2017-1534>
4. Aljinović Barać, Ž., Bilić, M. (2021). The effects of company characteristics on financial reporting quality – the application of the machine learning technique. *Ekonomski vjesnik/Econviews - Review of Contemporary Business, Entrepreneurship and Economic Issues*, 34 (1), 57-72. <https://doi.org/10.51680/ev.34.1.5>
5. Bilić, M. (2016). Utjecaj vrste revizora i područja djelatnosti na dobrovoljno izvještavanje u Hrvatskoj. *Ekonomska misao i praksa*, 25 (2), 469-493.
6. Capital Market Act. (2018). *Official Gazette of the Republic of Croatia*, No. 65
7. DeAngelo, L. E. (1981). Auditor size and audit quality. *Journal of accounting and economics*, 3(3), 183-199. [https://doi.org/10.1016/0165-4101\(81\)90002-1](https://doi.org/10.1016/0165-4101(81)90002-1)
8. DeFond, M., Zhang, J. (2014). A review of archival auditing research. *Journal of accounting and economics*, 58(2-3), 275-326. <https://doi.org/10.1016/j.jacceco.2014.09.002>
9. DeFond, M., Erkens, D. H., Zhang, J. (2017). Do client characteristics really drive the Big N audit quality effect? New evidence from propensity score matching. *Management Science*, 63(11), 3628-3649. <https://doi.org/10.1287/mnsc.2016.2528>
10. Deloitte. (2016). *CE Top 500 – An Era of digital transformation.* Deloitte Central Europe Holdings Ltd. Retrieved 11.08.2022. from <https://www2.deloitte.com/content/dam/Deloitte/hu/Documents/about-deloitte/HU-CETop-500-finalreport-2016.pdf>.
11. Federation of European Accountants - FEE (2016). *Overview of Audit Quality Indicators Initiatives – Information Paper.* Brussels: Federation of European Accountants. Retrieved 11.09.2022. from [https://www.accountancyeurope.eu/wp-content/uploads/1607\\_Update\\_of\\_Overview\\_of\\_AQIs.pdf](https://www.accountancyeurope.eu/wp-content/uploads/1607_Update_of_Overview_of_AQIs.pdf)
12. Francis, J. R. (2004). What do we know about audit quality?. *The British accounting review*, 36(4), 345-368. <https://doi.org/10.1016/j.bar.2004.09.003>
13. Gaynor, L. M., Kelton, A. S., Mercer, M., Yohn, T. L. (2016). Understanding the relation between financial reporting quality and audit quality. *Auditing: A Journal of Practice & Theory*, 35(4), 1-22. <https://doi.org/10.2308/ajpt-51453>
14. International Federation of Accountants - IFAC. (2020). IFAC Outlines Five Factors for High-Quality Audit, Issues Call to Action for Stakeholders in Audit Ecosystem. Retrieved 10.09.2022. from <https://www.ifac.org/news-events/2020-02/ifac-outlines-five-factors-high-quality-audit-issues-call-action-stakeholders-audit-ecosystem>.
15. International Accounting Standards Board – IASB. (2018). Conceptual Framework for Financial Reporting. Retrieved 10.09.2022. from <https://www.ifrs.org/content/dam/ifrs/publications/pdf-standards/english/2021/issued/part-a/conceptual-framework-for-financial-reporting.pdf>

16. Lawrence, A., Minutti-Meza, M., Zhang, P. (2011). Can Big 4 versus non-Big 4 differences in audit-quality proxies be attributed to client characteristics?. *The Accounting Review*, 86(1), 259-286. <https://doi.org/10.2308/accr.00000009>
17. Lennox, C.S., Li, B. (2020). When Are Audit Firms Sued for Financial Reporting Failures and What Are the Lawsuit Outcomes?. *Contemporary Accounting Research* 37(3), 1370-1399, <https://doi.org/10.1111/1911-3846.12571>
18. Lennox, C., Wu, X., Zhang, T. (2016). The effect of audit adjustments on earnings quality: Evidence from China. *Journal of Accounting and Economics*, 61(2-3), 545-562. <https://doi.org/10.1016/j.jacceco.2015.08.003>
19. OECD Capital Market Review of Croatia. (2021). Capital market reforms for recovery and improved business dynamic in Croatia, OECD Capital Market Series. Retrieved 25.08.2022. from <http://www.oecd.org/corporate/OECD-Capital-Market-Review-Croatia.htm>
20. Rajgopal, S., Srinivasan, S., Zheng, X. (2021). Measuring audit quality. *Review of Accounting Studies*, 26, 559–619. <https://doi.org/10.1007/s11142-020-09570-9>
21. Sever Mališ, S., Brozović, M. (2015). Audit market concentration – evidence from Croatia. *Ekonomski vjesnik/Econviews - Review of Contemporary Business, Entrepreneurship and Economic Issues*, 28(2), 339–356.
22. Simunic, D. A., Stein, M. T. (1987). *Product differentiation in auditing: Auditor choice in the market for unseasoned new issues*. Research monograph No.13. Vancouver, B.C.: The Canadian Certified General Accountants' Research Foundation.
23. Vuko, T. (2010). Audit Market Structure: The Case of Croatian Listed Companies. *The Business Review Cambridge*, 15(2), 266-271.