The effects of the low cost carriers' presence on airport performance: evidence from Croatia

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THE EFFECTS OF THE LOW COST CARRIERS' PRESENCE ON AIRPORT PERFORMANCE: EVIDENCE FROM CROATIA

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Abstract
Purpose – Although Low Cost Carriers (LCCs) expansion coincided with the growth of tourism demand in Croatia (and worldwide), their arrival on Croatian airports has happened just recently. As data related to their impact on airport business performance is scarce, the following research is done for the purpose of filling up a small portion of this knowledge gap.
Design – Besides the theoretical framework on the issue of the LCCs impacts on airports business performance, the paper also gives empirical insights into the matter on the Croatian international airports.
Methodology – Information were collected by using both available secondary data as well as the results of a semi structured questionnaire filled in by the officials from the Croatian international airports, in the period from January to May 2014.
Findings – The empirical research has showed that respondents had positive opinion on the LCCs presence and their overall impact on the airports business performance. Related to the findings some strategic directions for the policy makers have been given.
Originality – This article is one of the very few dealing with the LCCs presence on Croatian airline market and definitely the only one discussing LCCs impacts on Croatian airport performance from the airports' managers point of view.
Keywords low – cost airlines, Croatian airports, airports performances, tourism

1. INTRODUCTION

The aviation industry has been growing steadily for the last decades. However, due to competition, finance crisis and soaring oil prices followed by the diffusion of deregulation and liberalization on international level, adaptation to an ever changing environment has been quite challenging, resulting in restructuring and cost reductions in most of the air companies (Park et al. 2013). Parallel to this, due to changes in the air transport market, the competitiveness of the low-cost carriers (LCCs) has greatly expanded and many LCCs have been established around the world. In the same time strong expansion of tourism industry worldwide has helped LCCs further expansion bringing up at the same time quite a few new development dilemmas. Thus in Croatia where establishment of the LCCs lines has generated connection with most vibrant emissive markets (first LCC present in Croatia was German wings, flying from Zagreb since 2004), some authors have recognized their doubtless significance on airports development, in terms of an increase of the number of employees and facilitated access

to a destination (Gašparović et al., 2012), while some question their impacts because of the strong seasonality of their operation (Bezić and Vojvodić, 2011). In his research of Maltese tourism, Smith (2009) has analysed the LCCs impact since their introduction in 2006 on the growth of tourist arrivals. According to his findings there has been significant growth of younger, more affluent visitors to Malta, as well as the number of shorter stays. Apart from such studies there are several other studies focused on airports' efficiency analysis after LCCs arrival. While most of such researches were conducted by the use of methods such as the data envelopment analysis, stochastic frontier analysis, total factor productivity analysis (Barros and Dieke, 2008; Fung et al., 2008; Yuen and Zhang, 2008, Malighetti et al., 2008, Graham and Dennis, 2007, Francis et al., 2004), only a few (such as Bottasso, Conti, Piga, 2012) have used secondary data analysis and an in-depth interview with airports officials as the method of researching economic and social effects of LCCs entry on market.

According to Bottasso, Conti and Piga (2012), the impact of the presence of LCCs on airports performance may be connected to two, possibly interrelated mechanisms: first, the intensification of traffic volumes may have direct positive effects on airports revenues from commercial non-aeronautical activities; second, the new competitive environment faced by airports may be associated with a strong pressure to reduce airline charges. Although this may negatively affect airports financial performance, it may also lead to the restructuring and the streamlining of airports activities, so that they could be more closely aligned with the particular needs of LCCs (Warnock – Smith, Potter, 2005). By doing so, airports may have benefited from the cost reductions and productivity improvements (Bottasso, Conti, Piga, 2012). In their research Bottasso, Conti and Piga (2012) have focused on analysing productivity on a sample of the 24 largest UK airports observed during 2002-2005. Graham and Dennis (2007) have examined development of the air services at UK and Irish airports since 1998 to assess the impact on airport financial performance. The results have showed that low cost carriers have been largely responsible for the strong growth of the number of passengers and increased passenger load at a number of regional airports. At the same time the airports with a high proportion of low cost traffic tend to have lower unit revenues, particularly with regards to airport charges, demonstrating their desire to remain price competitive to capture this type of traffic.

This paper has focused on the role of the LCCs on the business performance of Croatian airports. Information were collected by using available secondary data where possible but due to their absence for the longer period (before and after arrival of the LCCs), the semi structured questionnaire has been prepared and sent to the airports officials with the request to fill them in. The questionnaire was focused on the issues of productivity, seasonality, attitudes towards cooperation between airports and LCCs, and benefits and potential drawbacks caused by the LCCs operations.

2. LITERATURE REVIEW

2.1. LCC business market development

As noted by Ramamurti and Sarathy (1997), the airline industry "has shrunk the world physically". Strong globalization and integration processes have strongly influenced many industries including airline. Those global processes and changes have forced them to develop and adopt some new strategies that have direct effects on their market. In the airline industry, that meant establishment of the new model, i.e. the one of the low cost carriers (LCC) to ensure competitiveness. In response to the growth of the LCCs market share, several major airlines have announced initiatives to meet the growing demand of fare conscious travellers (Eroglu, 2015).

Figure 1: **LCC model advantages**

LAFs	Traditional airlines		LFA advantages
Operate from mostly secondary, underutilized, regional airports	Operate from mostly primary international hub airports	⇨	Low airport charges, faster turnaround times, less air traffic control-related delays
Fast turnarounds (25 min.)	Slow turnarounds due to use of congested hub airports	⇨	Better fleet utilization
Direct point to point flights, no transfers, short haul routes	Mix of long, medium and short haul routes with transfers ("connecting flights")	⇨	Lower complexity, higher capacity utilization
Standardized fleet 8only one aircraft type), higher seating density	Various aircraft types, low seating density	⇨	Cheaper aircraft financing; lover maintenance and training cost; simpler swapping around of flight and maintenance staff; higher capacity utilization
Distribution primarily through direct channels 8internet, call centers)	Most tickets sold via travel agencies (high GDS costs, travel agent commissions, etc.)	⇨	Lower distribution costs, less complexity
No "frills", extras paid for (e.g. catering, excess baggage)	Entertainment programmes, express check-in, VIP lounges, paper tickets, business class, "free" catering	⇨	Lower ancillary costs, less complexity; additional revenues
Highly incentivized work force (variable proportion of salary up to 40%)	High basic salaries (variable proportion less than 10%)	⇨	High employee productivity

Source: Adapted from: Liberalization of European Air Transportation - The benefits of low fares airlines to consumers, airports, regions and environment, European Low Fares Airlines Association report, 2004

The low cost carrier business model has transformed airlines market, making flying cheaper than driving, and opening significant new market opportunities (Price and Hermans, 2008). Strong liberalization of the EU airline industry, occurring by the introduction of the third package of deregulation measures in 1993, has granted EU airlines access to other EU markets under its provision (Graham and Guyer, 1999). For airlines operating in the EU, that meant that they could establish themselves in any EU country, operate services to and from the EU member states that are not the airlines' state of origin and determine their own fares, level of frequency, schedules and capacity, with all effective economic restrictions having been removed (Scharpenseel, 2001). LCC business model is based on the combination of the low cost and high frequency. "Lowest cost" becomes the key strategy to gain competitive advantage (Williams, 2004). Even though there is no single definition of what comprises a LCC, there is a common understanding of what these airlines are, mainly based on their characteristics. European Low Fares Airline Association in its report (ELFAA, 2004) has indicated main differences between traditional and LCC airlines (Figure 1).

Deeper analysis highlights the wide variations among LCCs business strategies. While the original low-cost model was based on cost leadership, the newer breed of LCCs tends to follow the differentiation strategy meaning that a company seeks to be unique in its industry by promoting some dimensions that are widely valued by buyers. It is usually rewarded for its uniqueness with a premium price, or increase in demand. (Alamdari and Fagan, 2005). In the case of the LCCs differentiation strategy regarding the choice of the attributes, they most usually choose lover flight ticket price, and recently number of flights and destinations. Faced with LCCs, traditional carriers have attempted to fight back by adopting some of the LCCs characteristics - with increasing online sales, more rapid turn-round times and reduce use of travel agents or lower commission rates. Some have gone as far as to set up their own "budget airline" within the main organization, such as KLM and Transavia (Hunter, 2006). Graham (2012) indicates that through time a wide variation of LCC models have evolved that has complicated the market situation, while commercialisation of the airport industry and growth of LCC sector has fundamentally changed nature of the airline industry relations. According to the ELFAA report (2004), airports are major beneficiaries of the air transport liberalization and the resulting emergence of LCCs. Competition and lower air fares have led to phenomenal growth in number of flights and passengers at numerous airports, but particularly at the previously underserved regional and secondary airports which began to receive low fares services following liberalization. Kawasaki and Lin (2013) discuss entry of the LCCs route choices concluding that although various factors may influence LCCs entry route choices, cost-side factors seem to be the most significant. While considering operational costs difference between network carriers and LCCs and the additional travel time cost for connecting passengers, they have demonstrated that when the disutility from the time cost is large, the LCCs enter a rim route (a route that links non-hub cities) and when the disutility is small, they enter a spoke route (a route that links hub and spoke cities) (Atahk and Ozel, 2007; Aydin and Morefield, 2010; Kawasaki and Lin, 2013). Even dough LCCs mostly focus on costs, it is evident that their mode of operations is much more complex and includes comprehensive pricing and revenue management strategies (Graham, 2012). Several other researchers such as Oum and Zhang (1995), Zhang (1996) and Hendricks et al. (1997) have focused on the phenomena of the LCCs entry route

choices. Vidovic et al. (2012; 2013) have stressed how last decade has witnessed strong growth of market share of the LCCs in EUROCONTROL Statistical Reference Area (ESRA) region. According to the ELFAA (2004; 2007; 2011) and EUROCONTROL (2012; 2013) data, major LCC carriers have conducted total of 4,631 daily flights and have carried 236, 3 millions of passengers. Williams and Baláž (2009) have found out that LCCs are leading contributors to changing travel habits, generating additional travel, rather than merely substituting flights of the traditional carriers. They contribute to a new geography of air travel supply in Europe, known by lower costs, new connections, and new service frequencies. In their research Rebollo and Ivars Baidal (2009) pinpoint low-cost carriers being the most dynamic segment in the international tourism traffic toward Spain. They have recently achieved high growth rates which are quite opposite to the stagnation of traditional companies. This phenomenon is closely connected to the transformations experienced by the tourism market and air transport in Europe causing both quantitative and qualitative changes in Spain's tourist activity. However, the effects of low-cost carrier operations go beyond the context of the tourism sector and affect land-use and infrastructure planning policies, gradually shaping a new scenario where the specialization of tourism in real estate becomes reinforced.

2.2. Croatian airline market

Tourism plays significant role in Croatian economy, and can be seen as a key driver of the airline market development in Croatia. According to the Ministry of tourism (2015), the number of tourist arrivals in 2015 has reached 14.3 mil tourist arrivals and 71.6 mil overnights. It has accounted for 18.1% of Croatian GDP, and 6, 9% of direct employment, with an upward trend. Most of the tourists come to Croatia in the period from June to September, with 85% of them being located in the coastal destinations. Even though most of tourists arrive in Croatia by car, development of new, emerging emissive markets in tourism (such as China, Japan, Correa, Australia but also some European countries, in particular the Nordic ones) have strongly increased importance of air transportation, including LCCs. According to the market research done by the Institute for tourism (2015), it was 11% of the tourists coming to Croatia by plane, out of which 58% or 1.4 mil came by the LCCs.

Despite strong growth of tourism industry in Croatia, LCCs have come only recently to this market (in 2004). Today they are doing business in all of the 5 coastal and 2 continental Croatian airports. Hence in 2015 at the Rijeka airport 4 LCCs were present, in Pula there were 9 LCCs, Zadar airport was doing business with 5 LCCs, Split with 11 and Dubrovnik with 9 LCCs. At the same time the Zagreb airport was doing business with 5 LCCs and Osijek airport with just 1. Lošinj and Brač are two small airfields appropriate for the small planes landing (figure 2).

According to Croatian Civil Aviation Agency (2015) the highest number of passengers (in both arrivals and departures) in 2015, was recorded in the Zagreb airport, with 2.550.226 passengers, which is 6.62% more than in 2014. The Split airport has recorded 1.930.665 passengers in 2015 that is 11.66% more than in 2014. The Dubrovnik airport recorded 1.679.260 passengers in 2015, which is 6.95% more in comparison to 2014 while the Zadar airport recorded 487.652 passengers, showing

slight decrease of 1.8% as compared to 2014. The airport in Pula recorded 351.658 passengers, the airport near the city of Rijeka recorded 136.849 passengers while the airport near continental city of Osijek have recorded only 29.509 passengers in 2015.

Figure 2: **Seven international airports and two airfields in Croatia**

Source: Conducted research, viewed may, 2015, http://www.croatianairports.com/hr/

The highest share of the LCCs operations in total is realised on the Split airport (second biggest in the country) accounting for 32% of its total operations. That share is slightly smaller in other coastal airports. There has been continuous growth of the number of tourists in the Split-Dalmatia County from 1.66 mil arrivals in 2009 up to 2.01 mil arrivals in the first eight months of 2015. The same is with the number of passengers in the Split airport which has recorded 1.1 mil in 2009 and 1.47 mil arrivals in the first eight months of 2015. Data have been withdrawn from the official statistical reports of the Split-Dalmatia County and the Split airport. It should be noted that both trends show the same upward direction. However future increase of the number of LCCs and their lines in Croatia in general is uncertain due to the several reasons; firstly main contracts with LCCs are short-termed, meaning that smallest changes in demand can result with the abolition of lines. For destinations like Croatia this is extremely important because LCCs play significant role in attracting visitors from emerging distant markets in both, peak and shoulder season. Secondly, volatile fiscal policy and air transport regulations resulting in potential increase in taxes and fees, as well as the changed airport operational policy resulting in increased prices of various services have already caused withdrawal of Easy Jet from Zagreb international airport, meaning that this scenario is possible in other Croatian airports too. Additionally, final ambiguity related to the future trends of LCCs presence in Croatia arises from the ability of establishing collaborations with new LCCs, such as those with KLM and Ryanair. Constructing an airline network is a long term and complex process, combined of multiple market entry decisions. In decision making process, the airline management generally has to assess both the external attractiveness of the candidate markets and the internal capabilities and resources of the company that determines its ability to compete in the respective candidate markets (Muller et al., 2012). Therefore it is possible to conclude that due to the dynamic environment and changes in air lines on a monthly

basis, it is really complex to anticipate new trends not only on national but also on the EU market. There are rough estimates by Eurocontrol that the number of LCCs operations in Croatia until 2019 is going to increase from 23% to 30% as compared to 2012 (EUROCONTROL, 2013).

2.3. Business operations of Croatian airports and the impacts of the LCCs

There are many studies focused on LCCs performance analysis, but only a few have focused on effects of the LCCs market entry on performances and productivity of airports. As Chang and Yu (2012) have indicated, data envelopment analysis (DEA), first developed by Charnes et al. (1996), is well established as theoretically sound framework for engaging in such performance analysis. Most of the studies have proved that LCCs are in general much efficient than full-service carriers because of the business model they follow (as explained in Chang and Yu, 2012). However the real question is in what way the LCCs' entry affects airport performances. In order to conduct research that might give answers to this question it is necessary to have valid data, for the periods before and after arrival of LCCs to a certain market. In the case of Croatia, those data are not fully available. Therefore this analysis is based on available secondary data and data collected through a questionnaire. Data presented in Figure 3 indicate that all of Croatian airports have successfully operated in 2011 with the largest profit recorded in the Split airport.

Figure 3: **Financial results of Croatian airports operations in 2011 (in €)**

	ZAGREB	SPLIT	ZADAR	RIJEKA
TOTAL INCOME[1]	42.187.360,40	25.051.381,72	4.480.740	2.274.474,97
TOTAL EXPENSES	39.361.120,26	19.752.544,50	3.972.388,87	2.162.548,48
PROFIT	2.826.240,13	5.298.837.22	508.351,13	111.926,49
% OF PROFIT OF TOTAL INCOME	6,69%	21,15%	11,35%	4,92%

	DUBROVNIK	OSIJEK	PULA
TOTAL INCOME[2]	27.351.727,81	1.241.788,48	7.181.748,61
TOTAL EXPENSES	23.810.029,40	1.225.267,81	6.946.498,01
PROFIT	3.541.698,41	16.520,66	235.250,46
% OF PROFIT OF TOTAL INCOME	12,95%	1,33%	3,28%

Source: Conducted research - analysis of official financial reports retrieved from official airport websites

[1] As named in airport annual reports.
[2] As named in airport annual reports.

Further analysis of numbers presented in the Figure 4 indicates high seasonal fluctuations. It shows that the number of passengers in the Split airport in 2011 was more than ten times bigger in July than it was in February while in the Zadar airport it was more than twenty eight times bigger. Such a seasonal discrepancy is even higher in 2014. Figure 4 also indicates that in 2014 the number of passengers in the Split airport has increased by 42% as compared to 2011 and in Zadar by 89%.

Figure 4: **Ratio of the number of passengers in February and July in 2011and 2014**

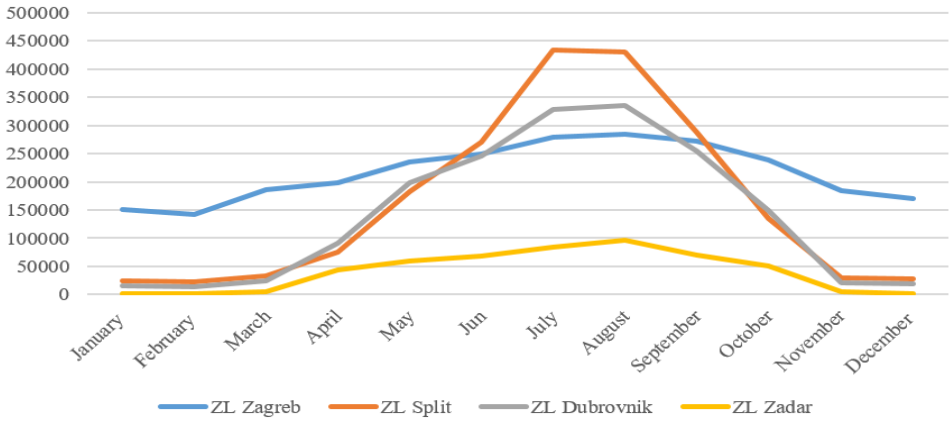
		ZAGREB	SPLIT	ZADAR
2011.	February	125.978	22.809	1.916
	July	256.759	274.063	54.210
	February / July	49%	8%	4%
2014.	February	128.410	21.530	1.858
	July	260.777	388.899	102.345
	February / July	49%	6%	2%
February 2014. / February 2011.		2%	-6%	-3%
July 2014. / July 2014.		2%	42%	89%

Source: Conducted research – analysis of official financial reports retrieved from official airport websites

Due to the growing importance of the LCCs in air transportation, many countries have developed special strategies to deal with the impacts they produce. Hence, as Tatibouet and Doumas (2008) reported, France has developed on its main airports the so called "low cost terminals" whose building and operating costs are lower than for traditional terminal and so is the quality of services they provide to airlines and passengers.

Strong growth in the number of lines in Croatia, as a result of the LCCs entry on its market, followed by the steady increase in the number of visitors in the recent years may cause problems, especially if related to the poor investments in terminals and airport infrastructure. Therefore it is obvious that this problem should be considered not only by the airport managers but also by the relevant ministries in the upcoming time. If looked at a monthly basis it is evident that the problem of unequal traffic distribution (figure 5) is significantly lower in Zagreb and Zadar airports.

Figure 5: **Total number of passengers in Croatian airports in 2015**



Source: Conducted research – analysis of official financial reports retrieved from official airport websites

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In the same time, growth of arrivals in Split and Dubrovnik airports is evident during the peak season. "Gain the profit or cut the line" policy of the LCCs means that a carrier will keep its line to a certain destination as long as there is demand strong enough to make it profitable. That simple logic presents potential problem for Croatian airport managers who, on one hand have to deal with sharp seasonal increase in the number of LCCs, lines and passengers and with the operational uncertainty on the other hand. This problem is particularly emphasized in the coastal airports.

According to the ELFAA report (2004) the main benefit of attracting LCCs to airports is the flow of greater revenues. Since even underutilized airports produce fixed costs, their goal is to maximize passenger volumes in order to cover these costs. Consequently, greater passenger number leads to increases in both aeronautical and non-aeronautical (i.e. commercial) revenues and, ultimately, higher profitability.

The main difference between traditional and low cost airports lies in the fact that the latter no longer rely on aeronautical charges as the main source of their income. Instead, they concentrate on the non-aeronautical or commercial side of the business realizing that vast range of opportunities now exist that can help them to significantly increase revenues and profitability in this area. Figure 6 shows that aeronautical revenues account for 68,84% in Zagreb, 58,32% in Split, 52,72% in Zadar, and 68.31% in Dubrovnik airport, while the highest revenues from non-aeronautical activities are gained in Zadar (39,77%), Pula (37,93), and Split (36,26%) airport.

Figure 6: **Revenue structure in Croatian airports in 2011 (in €)**

	ZAGREB	SPLIT	ZADAR	RIJEKA
The core business of airports	29.039.976,16	14.609.627,81	2.362.219,60	792.490,07
Secondary activities of airports	7.846.915,63	9.83.559,60	1.782.208,10	101.185,83
Other operating revenue	2.395.366,62	463.954,70	267.593,77	1.371.841,06
Financial revenue	2.905.101,99	894.239,60	68.718,54	6.998,28
TOTAL INCOME	42.187.360,40	25.051.381,72	4.480.740	2.274.474,97
TOTAL EXPENSES	39.361.120,26	19.752.544,50	3.972.388,87	2.162.548,48
PROFIT	2.826.240,13	5.298.837.22	508.351,13	111.926,49
AERONAUTICAL REVENUE (%)	**68,84**	**58,32**	**52,72**	**34,84**
NONAERONAUTICAL REVENUE (%)	**18,60**	**36,26**	**39,77**	**4,45**

	DUBROVNIK	OSIJEK	PULA
The core business of airports	18.685.053.11		4.133.984,37
Secondary activities of airports	7.591.875,23		2.723.779,47
Other operating revenue	303.461,99	1.219.064,64	70.401,85
Financial revenue	771.337,48	21.568,87	253.582,65
TOTAL INCOME	27.351.727,81	1.241.788,48	7.181.748,61
TOTAL EXPENSES	23.810.029,40	1.225.267,81	6.946.498,01
PROFIT	3.541.698,41	16.520,66	235.250,46
AERONAUTICAL REVENUE (%)	**68,31**	**0,00**	**57,56**
NONAERONAUTICAL REVENUE (%)	**27,76**	**0,00**	**37,93**

Source: Conducted research – analysis of official financial reports retrieved from official airport websites

There are different ways of earning revenues from non-aeronautical activities in airport operations:

- Firstly, large numbers of passengers attract businesses to the airport. Car rentals, shops, banks, post offices, restaurants, bars, etc., consider it viable to locate themselves at an airport with high passenger volumes. The airport can collect rental and concession fees from all of them;
- Car parking is also an important source of revenues;
- By organizing shuttle transport in-house, or by contracting this service from the outsource suppliers they receive a concession fee from the operator;

– Airlines, hotels and other tourist attractions in the region, car rentals, neighbouring regions and cities all find it very effective to advertise in airports, since they realize that airline passengers are the best target for travel and tourism advertising (ELFAA, 2004; Castillo-Manzano, 2010; Volkova, 2013).

3. CASE STUDY

3.1. Methodology of research

The main aim of this research was to investigate the effects of the LCCs entry on the Croatian international airports performance. This research is based on the previously explained premise that airports revenues originating from the LCCs business significantly contribute to the total revenues not just in terms of standard aeronautical revenues but even more in commercial non-aeronautical revenues. As an example, in 2014, LCCs accounted for 42.1% of total passenger transport in the Split airport, representing 14% increase related to 2013 when they accounted for 36.9% of all arrivals and departures (Split airport Annual report, 2015). In the same time, total revenues have increased by 14% in 2014 as related to 2013, especially those directly related to LCCs landing fees (increase in 28%) and dispatching (18%). In the same year revenues from passenger services for LCCs have increased for 32% as compared to 2013.

The empirical research was conducted by using semi-structured questionnaire filled in by the Croatian airports officials/managers in the period from January to May 2014. At first, questionnaires were sent to them by e-mails, but later, as a few of them were reluctant to give answers, they were phoned and interviewed by phone. The first part of the questionnaire collected basic information about respondents such as gender, age, and work experience and work position. Second part was focused more on productivity, cooperation, revenue sources and revenue optimization of the airports where respondents have been mostly giving their grades to specified statements by using Likert's five-grade rate. Third part was focused on their attitudes towards both costs and benefits generated by the LCCs operations. The respondents were expected to give an insight into the airports operation, and to explain the flow of operations before and after LCCs arrival on market. This approach was adopted because of the lack of data on airport operations before LCCs arrival that are essential for proper empirical testing. Hence it should be noted that potential subjectivity in answers presents a lack of such a research.

In total, seven questionnaires were sent to addresses of seven general managers (or their assistants) of international airports in Croatia. Six questionnaires were finally filled in. Four of respondents were males, and two were females. All of them have more than five years of experience in the airline industry (which is important because it shows familiarity with airport operations before and after LCCs arrival) while three have more than twenty years of experience in the airline industry. All of respondents were members of the middle or top management in airports.

3.1. Discussion on the results

The effects of LCCs on airport operations is perceived positively, even in those airports (such as the one in Osijek) where LCCs revenue is not significant proportion (figure 7). It should be noted that three out of four coastal airports (Split, Zadar and Dubrovnik) have reported that income from the LCCs operations constitutes a significant portion of their total revenues! Officials at five out of six observed airports (except in Split), perceive increase of operational seasonality. The negative statement that an airport will become too dependent on the LCCs has got the highest mark by the Zadar airport official since it is dependent on the LCCs much more than other airports, while in other airports it has been rated with lower marks. If parallel is drawn between managers' attitudes towards the need of dealing with the LCCs and a fear of possible excessive dependence on them it is only Dubrovnik airport manager who gives low grades to both statement. That can be explained by the fact that Dubrovnik is a destination where most of the tourists arrive by regular plane, and that it is one of the world leading destinations in recent years with the steady growth rates. Split, Zadar and Dubrovnik airports' officials have noted increase in the number of employees and in cost control. They have all agreed (except for the Pula airport official) that by lowering fees they might ensure increase in the number of flights and passengers.

All but Pula and Dubrovnik airports' representatives consider that airport competitiveness has been improved due to the presence of the LCCs, and that non-aeronautical revenues have significantly increased. It is this last statement that has been given significance by the Split, Zadar, Osijek and Pula airports officials while Zagreb and Dubrovnik officials consider it to be of no special importance.

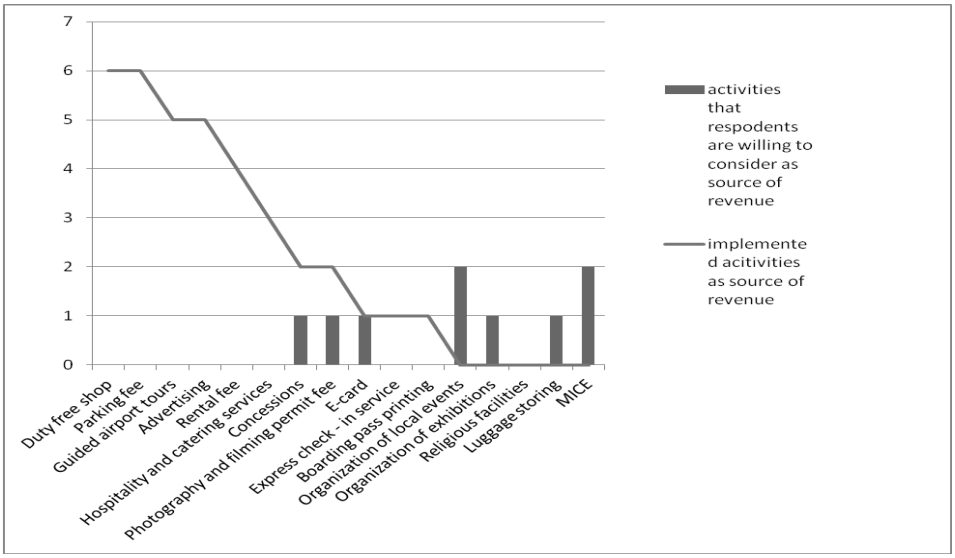
Figure 7**: LCCs and airport performances**

Rate between 1 and 5 the extent to which you agree with the following statements. Where 1 means not at all, and 5 totally agree!	**ZAGREB**	**SPLIT**	**ZADAR**	**OSIJEK**	**PULA**	**DUBROV-NIK**
LCCs have positive effects on airports performances	4	5	4	4	5	5
Dealing with LCCs is essential due to successful operations of airports	4	4	5	4	3	2
Income from LCCs operations constitute a significant portion of total revenue	3	4	5	2	3	5
Operational seasonality in airports is increased when considering last few years	4	2	4	4	3	5
Lower fees will ensure long-term growth in number of passengers in airports	5	4	4	4	3	4
There is a risk that the airport could become too dependent on LCCs	4	3	5	4	4	2
The number of employees in airport has increased	2	4	5	2	3	4
Cost control has been improved	3	5	4	3	3	3
Airport competitiveness has been improved	4	5	4	4	3	3
Non-aeronautical revenues have significantly increased	3	4	5	4	4	3

Source: Conducted research

As already stated, all airports generate some sort of non-aeronautical revenue from duty free shops, and car park fees (figure 8).

Figure 8: **Business and operational activities of airports in Croatia**



Source: Conducted research

Exception is the Split airport which, apart from these so called standard services, offers guided airport sightseeing tour, and Dubrovnik where guest can use e-postcard machine. None of the airports offer luggage keeping service that could potentially be source of high non-aeronautical revenue. In the case of Zadar, Croatian airport with the biggest share of non-aeronautical revenues (39, 77%), main sources of that kind of revenue are hospitality and catering, different services (parking, rental agreements, marketing), trade (shops and markets) and Business Lounge for business-class passengers. Most of the respondents were quite reserved with respect to the introduction of other new activities, such as organization of different events, exhibitions or luggage keeping service. Only Zadar and Dubrovnik airports were interested in introducing services related to the meetings and congresses organisation as an extension of their base operations. Zagreb airport official has also shown interest in implementation of luggage keeping service.

The airport managers were also asked to rate their overall experience of dealing with LCCs. Considering the average mark given, it could be concluded that it is mostly highly positive. This is especially pronounced in Zagreb and Zadar airports (on the range from 0 – 5 they both their representatives have given an average grade of 4.17). The least grade was given by the Osijek airport official, i.e. 3.42, the reason being probably their late involvement in this kind of operation and the fact that Osijek is still not widely popular tourist destination.

4. CONCLUSION

It is evident that changes in every day's life, reinforced with globalization processes have effected, and have been effected by the development of LCCs. As Ramamurti and Sarathy (1997) have noted, the airline industry "has shrunk the world physically", and LCCs have made significant contribution to that. This "new service" has made even more accessible many distant destinations to increasing travel population. Not only that it was possible now to travel to even more places than ever, but more important the travel cost was lower than ever before. Soon LCCs have become important solution for many international airports who were dealing with two complementary problems: (1) how to increase airport performances, and (2) how to increase number of tourist arrivals in a destination. In this way, LCCs were recognised as significant stakeholder influencing both, airport operations and local population. Based on the analysis of the LCCs business strategies it is possible to conclude that the original low-cost model was based on cost leadership, while the newer breed of LCCs tends to follow the differentiation strategy (Alamdari and Fagan, 2005). The logic of differentiation strategy requires that a firm chooses attributes in which to differentiate itself from its rivals. In the case of the LCCs those attributes are lover flight ticket price, and recently number of flights and destinations. Therefore, it could be possible to conclude that LCCs will choose only those airports that could fit in their business model, which is absolutely profit oriented. They are searching for those airports that can provide them with optimal annual increase in number of passengers, and provide them with stabile fiscal policies and airport fees and costs. It is mostly those airports situated near popular and emerging tourist destinations that can provide these conditions. Considering constant growth of the number of visitors in Croatia recently, it is to expect that LCCs will be interested in doing business in Croatia at an ever growing rate.

As explained before this research was focused on the effects of the LCCs entry on performance of Croatian international airports. Based on the responses obtained by the questionnaires filled in by the Croatian airport managers representatives of the 6 international airports, it is possible to conclude that LCCs have overall positive effects on their business performances. Thereby, it is important to emphasize two major conclusions: (1) LCCs income account for significant part of the total income in analysed airports, especially in the coastal ones; (2) considering the trend of the number of visitors growth in observed Croatian destinations, and the number of passengers in the airports as well as data collected through the empirical research, it is possible to conclude that arrival of the LCCs to the Croatian airports has also contributed to the sharpening of seasonality, that should be considered in future development strategies of Croatian tourist destinations.

Several other conclusions can be made based on data collected through this research: (3) In most of the airports, especially coastal ones, LCCs revenues account for moderate to large share of total revenue, and the effect of LCCs on airport operations is perceived positively, even in those airports (like Osijek), where LCCs revenue is not significant proportion. (4) In all airports except for Dubrovnik, managers highly agree that LCCs are essential for successful business operations; however there is also highly expressed fear that airports may become too dependent on them. (5) In Zagreb, Zadar

and Osijek airports, managers have perceived increase in competitiveness. Zadar has recorded strongest increase in the number of employees, and in non-aeronautical revenues.

It is possible to conclude that this research may have suffered from potential subjectivity as it is based on individual expert's opinion. Therefore any future research should, if possible, focus on more exact data on financial indicators. However despite this limitation the research may be useful for understanding the effects of the LCCs' presence on the overall airports' performance. Based on the above conclusions following strategic decisions may be recommended to the airport professionals: to attract as many LCCs throughout a year as possible; to offer a whole range of non-aeronautical services as possible not only for the reason of improving overall airports' business operations but also to increase entire destination's competitiveness. For the purpose of diminishing possible sharpening of seasonality due to the arrival of many LCCs, they should also consider the idea of implementing a set of measures aimed at attracting their arrival out of the peak season (such as airport fees reduction, subsidies and other possible measures that may make them interested to extend the flying season, including the ones that are aiming at local destination's supply enhancement).

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