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Analysis of business traffic at Wroclaw Airport - implications for economic development of the city and the region

Łukasz Olipra
Wroclaw University of Economics
Poland
e-mail: lukasz.olipra@ue.wroc.pl

Wojciech Augustyniak
Poznan University of Economics
Poland
e-mail: w.augustyniak@ue.poznan.pl

Abstract. The aim of this article is to investigate the significance of an airport and air transport links for economic development of a city and/or a region on the case study of business traffic at Wrocław Airport. The authors try to identify implications of air transport for economic development of the given city and region and list conclusions useful for regional and local decision-makers responsible for regional and local development policy, The analysis is based on primary and original data gathered in the survey carried out in two rounds among passengers departing from Wrocław Airport (spring and summer of 2014). Analysis of the structure of business passengers group by destinations and types of an airline (network carriers, low-cost or regional carriers) indicated significant importance of network carriers for business passengers. The role of regional carrier should also be noted. Counterfactual analysis proved that considerable number of business passengers would not come to Wroclaw at all if there were no flight connection.

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INTRODUCTION AND BRIEF LITERATURE OVERVIEW

It is widely known, that there is an important interrelation between business travel and air transport market. Business trips are one of the most important part of demand for air travel. On the other hand, international air transport is the only sector of the transport industry to provide a world-wide network of rapid relocation services, making it an indispensable element of global business (ATAG 2008, 2, 8-9). It is also universally believed that region's accessibility is one of the most important factors of regional competitiveness (Cybulska et al. 2014, 389-391).

There are many studies on the economic impact of air transport on the region which determine the importance of air transport in the region as one of the sectors of the economy (Wilbur Smith Associates 1988; Butler and Kiernan 1986; Butler and Kiernan 1992; ACI Europe 1998; ACI Europe and York Consulting 2000; ACI Europe and York Aviation 2004; Cooper and Smith 2005; Huderek-Glapska 2011; Huderek-Glapska 2012; Braathen, Johansen and Lian 2006; Halpern and Braathen 2010; Augustyniak, 2014; Kalinowski, 2014). However, there are effects on the economy of a country or a region which extend beyond direct or indirect impact related to air transport as an economic sector (catalytic effects). Some of the benefits resulting from airport operation in a region include, among others, stimulation of a range of other economic activities (Butler and Kiernan 1992, 13). In details, studies on catalytic impact distinguish impacts of air transport: on productivity and business operations, market structure and innovation, labour supply, congestion and local costs of doing business, investment, including company decisions on location and technology transfer. Presence of an airport and air transport services delivered in the region are important factors to be taken into account when locating businesses and industries. Their quantification and measurement of these effects are difficult, because they include the impact of air transport on many areas of the economy. It is therefore difficult to separate which changes in the economy are associated with the operation of an airport from those which result from a number of other factors affecting the economy. Increasingly, however, there are attempts to measure the stimulating impact of air transport (Cooper and Smith 2005, 16-19).

The aim of this article is to investigate the significance of an airport and air transport links for economic development of a city and a region taking business traffic at Wrocław Airport for a case study. On the base of the business traffic analysis the authors try to identify implications of air transport, particularly Wroclaw Airport and air transport links to/from Wroclaw for economic development of the city and the region and list conclusions useful for regional and local decision makers responsible for regional and local development policy,

The analysis is based on the data gathered in the survey carried out in two rounds (first – in the winter/spring and second in the summer) among passengers departing from Wrocław Airport. The authors analyze the results focusing on the information given by passengers flying for business purposes. The analysis include the structure of business passengers group by destinations and types of an airline (flag carriers, low-cost carriers, regional carrier) as well asfactors influencing passengers' choice of an airport for business trip and frequency of air travels.

As far as limits of the research are concerned it has to mentioned, that survey was not designed to collect detailed information about results (or prospective results) of particular business trips and their potential impact on the development of companies in the region and thus on the regional development. It can be an area for further, more detailed studies of authors.

Research methods used in the study include: literature studies and desk research, passengers survey (via CAPI method – Computer Assisted Personal Interviewing), statistical methods and counterfactual analysis, which is based on the question included into the questionnaire of the survey: would you come to Wroclaw in there were no air connection?

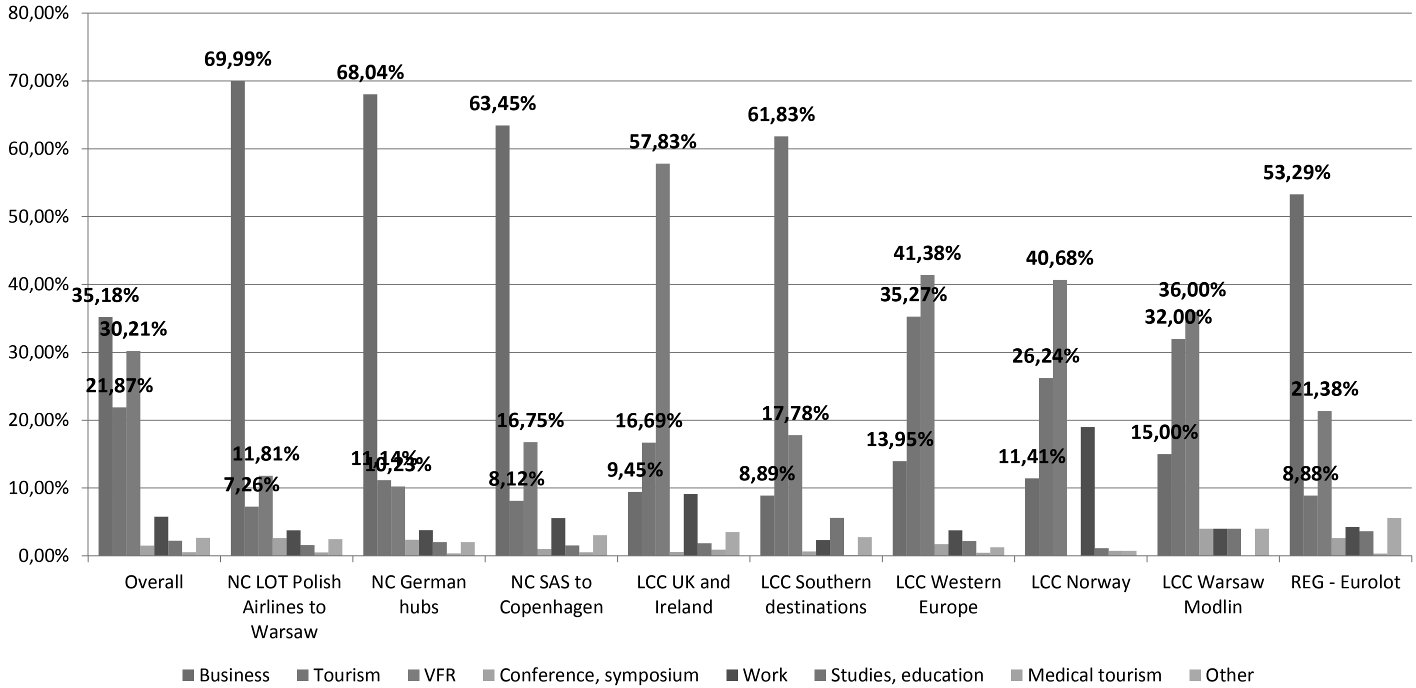
THE STRUCTURE OF PASSENGERS AT THE AIRPORT IN WROCLAW, GROUPED BY DESTINATION

Demand for air transport services is a derivative. Air travel itself, is not a service that directly meets the needs of customers and is not "consumed" by them for this purpose. In other words, passengers do not buy airline tickets just to make a journey by plane, but in order to achieve another goal e.g.: get to vacation destination, visit family and / or friends, for business, or other specific purposes. The purpose of the journey is one of the criteria used to extract types of demand and categorization of passengers. The above-mentioned purposes allow one to identify three main groups of passengers, which have specific characteristics: business passengers, tourists and visiting family and / or friends (commonly used abbreviation: VFR - *visiting friends and relatives*). In addition to these major groups of passengers- depending on needs - additional divisions and exclusions can be made. *Figures 1 a*nd *2* show the structure of travelers departing from Wroclaw airport using connections from different carriers (network, low-cost or regional) for particular directions depending on the purpose of the journey. In all directions, the aforementioned three main groups account for the vast majority of departing passengers. The structure and participation of these groups of passengers for particular destinations, however, is different for different categories of carriers and for particular destinations. The data depicted in the figures come from a survey of passengers conducted at the departure hall of Wroclaw airport in two rounds: Round I - March-April 2014; Round II - July-August 2014. It has to be mentioned, that German hubs means Frankfurt Main, Munich and Duesseldorf, southern destinations include: Italy, Spain, Malta and Greece (Chania) and Western Europe include services to: Brussels-Charleroi (when offered), Paris-Beauvais, Dortmund and Eindhoven. Due to the low number of passengers and respondents of the regional carrier (Eurolot) to particular destinations (Zurich, Paris CDG, Brussels Zaventem and Gdańsk) all destinations of Eurolot were presented together. The subsequent part of the study focused on the analysis of business traffic, which is appropriate for the purpose of this study.

When analyzing these figures, it should be noted that, the share of business passengers in total is different in the two study periods (rounds). On one hand this is due to the fact that in the summer months the number of business trips falls due to the holiday period, on the other hand - the number of passengers traveling for tourism and visits with family or friends rises. During the second round of the survey, the number of charter passengers, who throughout the year are a significantly smaller group of passengers, also significantly increased. Undoubtedly, it affected the overall results of the study. The figures above do not include passenger charter flights, on the one hand to improve the readability of drawings, and on the other hand, due to the relatively uniform structure passengers: almost all passengers were traveling on charter flights for tourism and recreational purposes (about 97%).

Despite the circumstances described above, the scale of the difference between the share of business traffic during the winter-spring and summer (three times less travel in the summer months) is surprising. It should be noted, however, that although the proportion of business passengers (according to the data represented above, for all passenger) in the summer is three times lower, however, the actual number of business passengers does not fall 3 times over, but only approx. 40% (*Table 1).*

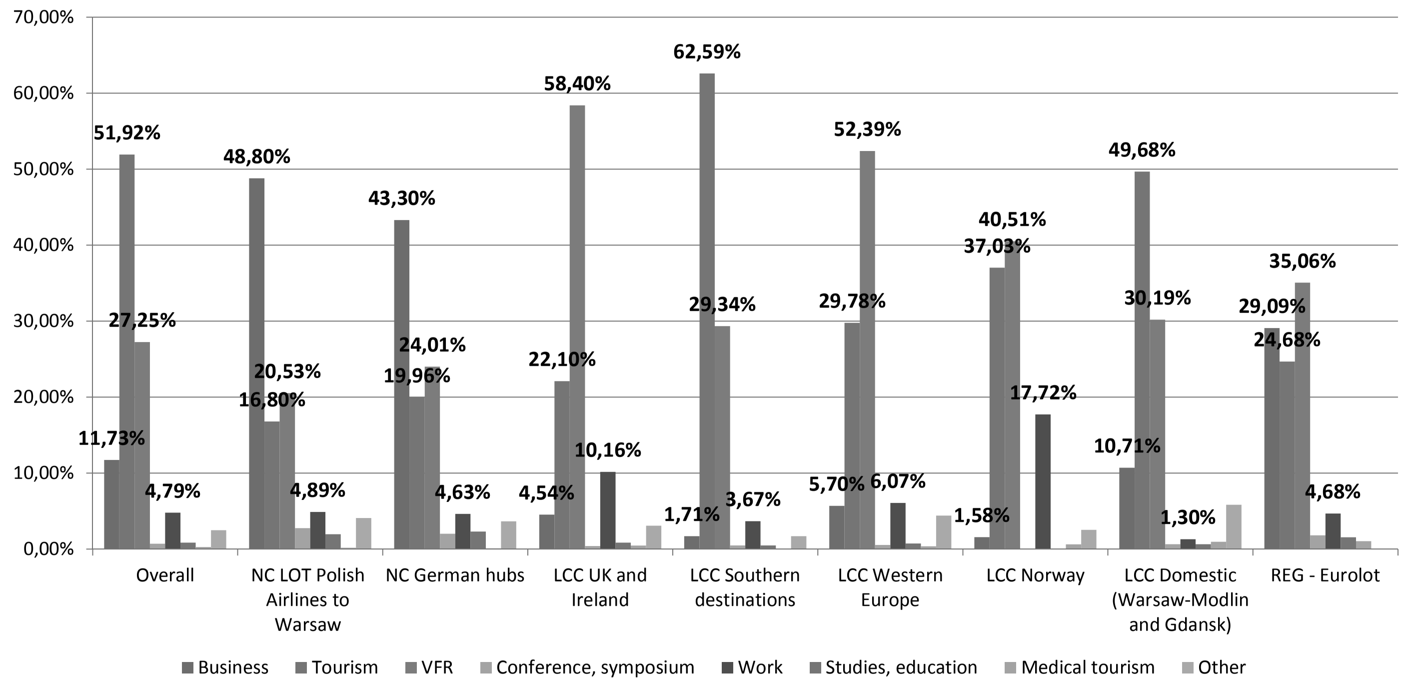
Business passengers account for the largest proportion of passengers in network airlines (LOT, Lufthansa, SAS) for destinations: to Warsaw (almost 70% during the winter and 50% in the summer months - *Figures 1* and *2*), German hubs (transit ports) (68 and 43 percent respectively) and Copenhagen (63.45% during the winter, in summer, air connections of the SAS airlines to Copenhagen were suspended) and regional carrier - Eurolot (53 and 29 percent respectively). In the case of Eurolot airline, a significant decrease in the share of business passengers during the summer months is associated, not so much with a decrease in the number of business passengers, but is mainly due to an increase in the number of passengers traveling by Eurolot for other purposes (tourism / leisure and visiting friends and / or relatives).



* NC – Network Carriers; LCC – Low-Cost Carriers, REG – Regional Carrier.

Figure 1. Structure of the passengers to particular directions grouped according to purpose of the journey (survey in March-April 2014)

Source: own preparation.



* NC – Network Carriers; LCC – Low-Cost Carriers, REG – Regional Carrier.

Figure 2. Structure of the passengers to particular directions grouped according to purpose of the journey (survey in July-August 2014)

Source: own preparation.

Table 1

Changes in the percentage and the number of business passengers in the two periods covered by the survey (summer months compared to the winter-spring months)

nr	Study period	The number of Passengers checked-in, in the periods under consideration	% business passengers	Estimated number of business passengers
1.	Winter-Spring	44361	35,18%	15606
2.	Summer	79859	11,73%	9367
3.	Percentage and number of business passengers in the summer survey as compared to the survey in March and April (Line 2 / line 1)	180,02%	33,34%	60,02%

Source: own preparation.

Passengers traveling on business also make use of low-cost carrier connections. Their share in the number of passengers to particular destinations during the winter-spring oscillates, only around 10% (from 8.89% for southern destinations, then to 9.45% to the UK and Ireland, 11.41% to Oslo in Norway, and 13.95% to Western Europe (Dortmund in Germany, Eindhoven in the Netherlands, Brussels in Belgium, Paris in France). The share of business passengers to the newly opened domestic connection, Ryanair to Warsaw-Modlin for this period was 15%, which is well worth noting.

Data on the topic of business passengers in the structure of the passengers to particular destinations, are not sufficient to assess the importance of individual carriers for business traffic service. After taking into account differences in the size of the flows of passengers (number of passengers) to particular destinations, it can be proved that, the share of 9.45% to British-Irish destinations means a much larger absolute number of business passengers than 13.95% for destinations to Western Europe. In order to further evaluate the importance of individual airlines offering connections to the specific destinations to service business traffic, it is important to analyze the structure of business passengers according to the direction of connections, and thus, also the type of carrier. Such data (divided into periods: winter-spring and summer) is shown in *Figure 3*.

THE STRUCTURE OF BUSINESS TRAFFIC AT THE AIRPORT IN WROCLAW ACCORDING TO DIRECTION AND TYPE OF SELECTED CARRIER

The structure of business traffic at the airport in Wroclaw according to direction and the type of carrier chosen, confirms the dominant role of network airlines (LOT, Lufthansa, SAS) to service business travelers for business purposes. In addition, the share of these carriers is stable in both survey periods. In Particular, PLL LOT and Lufthansa, which together handled almost 75% of business passengers (in the winter-spring scheduling period to the German hubs were offered by both Lufthansa and LOT Polish Airlines, in the

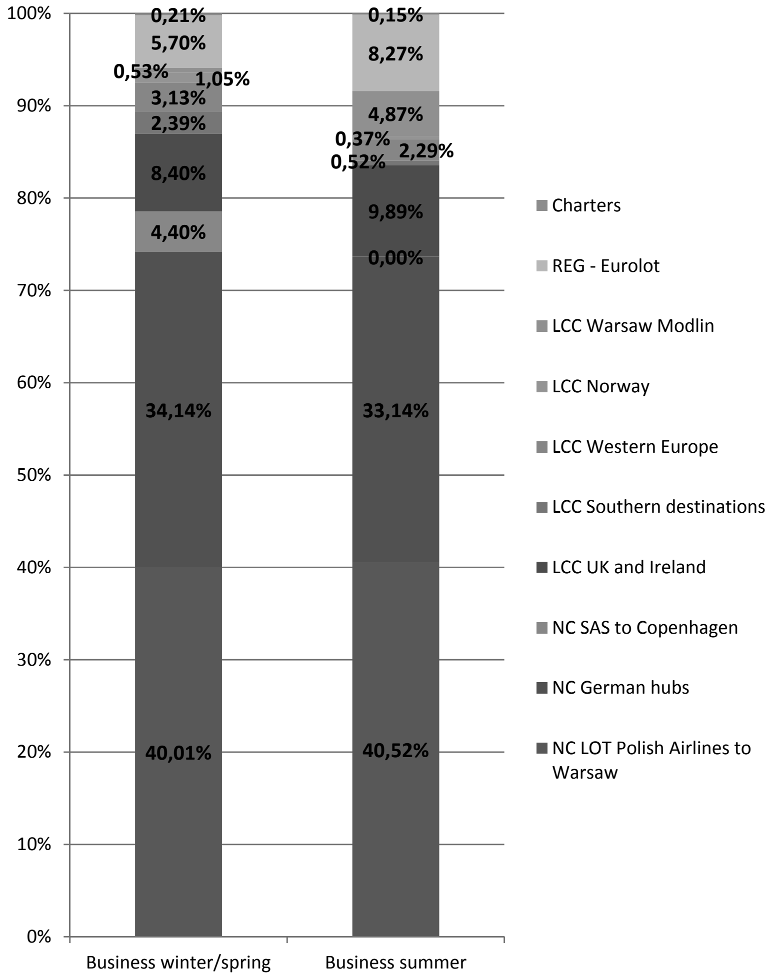


Figure 3. Structure of business traffic at the airport in Wroclaw according to the direction and type of selected carrier during winter-spring and summer periods of 2014

Source: own preparation.

summer LOT Polish Airlines withdrew from the connections to Munich and Frankfurt; in addition, as mentioned earlier, SAS suspended all flights during the summer months).

In addition to network carriers to Warsaw-Okecie and German hubs, we must also emphasize the significant share of direct connections offered by low-cost carriers to the UK and Ireland, which are selected by nearly 10% of business travelers as well as connections by regional carrier Eurolot, which offered direct flights from Wroclaw to Gdansk and other major European airports such as Zurich, Paris Charles de Gaulle and Brussels Zaventem, that were not previously served by neither network carriers nor low cost carriers. Eurolot connections were chosen by 5.7% of business passengers during winter-spring and 8.27% in the summer months.

The increase in the participation of Eurolot airline to service business traffic at the airport in Wroclaw in the analyzed periods is worth highlighting. The carrier began offering direct flights from Wroclaw to the main European airports in March 2014 thus competing, on one hand, with already existing connections by low-cost carriers (connection to Beauvais - airport which is approx. 80 minutes away from the center of Paris by car or bus is serviced by both Ryanair and Wizzair), and on the other, with network carriers that allow one to reach each of these airports after transferring from one of its hubs. Despite the large-scale promotional campaigns carried out by the carrier and Wroclaw Airport, not all passengers were aware of the direct flights from Wroclaw to Zurich, Paris or Brussels, and some airline customers, particularly institutional - large companies (mainly foreign), were also associated with loyalty programs from network carriers. In context, a significant share of Eurolot to service business traffic, it should also be noted that the carrier on routes from Wroclaw offered much lower capacity than the network carriers. This was due to both the size of the aircraft (Eurolot operate smaller aircraft in terms of the number of seats on board) and the frequency of connections (network carriers performed up to several flights daily to its main hubs). Altogether, during the summer months which were covered by the study, 78 flights per week were performed by network carriers from Wroclaw to Warsaw-Okecie and to German hubs. Eurolot, in that period, carried out 21 flights a week, including 7 to Gdansk, 4 to Lublin, 4 to Zurich, 3 to Paris CDG and 3 to Brussels. The situation is similar when comparing Eurolot to other low-cost carriers, which in fact, do not offer daily connections to most destinations, but use for operations 2.5-fold larger aircraft than Eurolot had (Ryanair Boeing 737-800 takes 189 passengers and Bombardier Q400 – 78 passengers). Despite the growing popularity of direct connections by Eurolot from Wroclaw to several major European destinations, the aircraft load factor remained relatively low. The carrier had similar problems with connections from other airports. The consequence of this was the decision to suspend flights from the 1st of April 2015 and subsequent liquidation of the carrier.

Similar to the case of Eurolot connections, there was also an increase in the service of business traffic for domestic routes offered by Ryanair (mainly to the Warsaw-Modlin airport). In the winter-spring period, the connection to the Warsaw-Modlin was selected by 5.7%, while in the summer months, the sum of Polish destinations supported by Ryanair (Warsaw -Modlin and Gdańsk) was chosen by 8.27% of business passengers. However, the share of business traffic in these two destinations is significantly different. On connections to Gdansk, only 4.9%, of people traveling were business travelers, while the connections to Warsaw-Modlin this share amounted to 14.39% of business travelers. Connections to Gdansk were offered only in the months of July and August 3 times a week. Connections to the Warsaw-Modlin are carried out every day, and since autumn 2014 were carried out even twice a day.

The success and growing popularity among business passengers for Ryanair connections to Warsaw-Modlin can be explained by, among others, new actions taken by the carrier and airline strategies that aim to increase the attractiveness of the offer in the area of business travel and increase its participation on the routes offered by the airline as well as the attractiveness of the prices offered by Ryanair in these directions. Although the airport in Modlin is located approx one hour by car, bus or train from the city center (which is associated with additional costs) as opposed to Okecie airport, from where you can reach the city center in 20 minutes, the ticket prices are several times lower compared to the prices of tickets for LOT Polish Airlines to the Warsaw-Okecie airport (LOT Polish Airlines was a monopolist on this rout until the operation of Ryanair to Warsaw-Modlin) and attracts business travelers for business purposes.

The analysis seems a bit more complicated in the case of connections offered by Eurolot. However, it can be hypothesized that it is mainly the possibility of direct connections without changing flights, to important business centers (Zurich, Paris, Brussels) and the associated time-saving was a factor in choosing these connections by business passengers. The confirmation of the veracity of this hypothesis may be the results of two independent studies. In surveys of Lower Silesian enterprises, conducted by a team of academics from the University of Economics in Wroclaw and Rzeszow University of Technology, most of the surveyed enterprises (over 66%) rated that use of flight connections from Wroclaw airport is very high or high degree, reduces the time taken for business travel and thus improves efficiency in their companies (Cybulska et al. 2014, 175-176, 404-405).

The results of the performance tests of passengers traveling from Wroclaw airport conducted during July-August in the airport terminal in Wroclaw could be considered as second proof. Respondents were asked to rate on a scale of 1 to 5, where 1 means "invalid" and 5 "very important" factors that may be taken into consideration when choosing an airport when planning a trip. The information obtained allowed to determine the priorities of passengers and determinants of planning air travel, as well as a ranking of the factors influencing the choice of airport.

FACTORS DETERMINING THE CHOICE OF THE AIRPORT BY BUSINESS PASSENGERS WHEN PLANNING A BUSINESS TRIP BY AIR

The results of the study of passengers, in which the authors asked for an assessment of the factors determining the choice of airport by travelers when planning air travel are shown in *Tables 2* and *3*. From the statements in the general data collected from all the passengers, some information and assessments from the information coming from the passengers of charter flights has been excluded, due to their limited choice of departure airports. Most charter passengers also declared that they travel by plane once a year as part of holiday trips organized by travel agencies. Tables with data for business travel provide answers to both business travelers and people going or coming back from conferences, trainings or symposiums. The participation of these passengers, however, is small enough that it did not cause any distortion of the results. On the other hand, these passengers are also the majority of the employees of Lower Silesian enterprises traveling for business.

Table 2

Ranking of the factors determining the choice of the airport by passengers planning to travel by plane

nr	Factors taken into account	Sample size	Nr of answers	% answers	$\overline{x}$	S	Q1	Me (Q2)	Q3	Mo (D)	Typical area of variability	
											$\overline{x}$ - 1S	$\overline{x}$ + 1S
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Availability of direct connection (without transfer)	4113	4037	98,2%	4,62	0,85	5	5	5	5	3,77	5,47
2	The quality of service at an airport	4113	4015	97,6%	4,43	0,89	4	5	5	5	3,53	5,32
3	The price of ticket for a flight connection from a particular airport	4113	4016	97,6%	4,38	0,96	4	5	5	5	3,42	5,34
4	The availability of a suitable connection by a low-cost airline	4113	4012	97,5%	4,34	1,06	4	5	5	5	3,27	5,40
5	Convenience of time for a connection (day of week, time)	4113	4052	98,5%	4,33	1,01	4	5	5	5	3,31	5,34
6	Aesthetics and quality of the passenger terminal	4113	4040	98,2%	4,14	1,13	4	5	5	5	3,01	5,27
7	Convenience of travel to the airport by car	4113	3988	97,0%	4,07	1,25	3	5	5	5	2,82	5,32

1	2	3	4	5	6	7	8	9	10	11	12	13
8	The proximity of the airport from place of residence	4113	4022	97,8%	4,04	1,16	3	4	5	5	2,89	5,20
9	Convenience of travel to the airport by public transport (including rail)	4113	3731	90,7%	3,27	1,64	1	4	5	5	1,63	4,91
10	Price and availability of airport parking	4113	3563	86,6%	3,09	1,63	1	3	5	5	1,46	4,73

Source: own preparation.

Table 3

Ranking of the factors determining the choice of the airport by passengers planning a business trip by plane

nr	Factors taken into account	Sample size	Nr of answers	% answers	$\overline{x}$	S	Q1	Me (Q2)	Q3	Mo (D)	Typical area of variability	
											$\overline{x}$ - 1S	$\overline{x}$ + 1S
1	Availability of direct connection (without transfer)	747	734	98,3%	4,49	0,98	4	5	5	5	3,50	5,47
2	Convenience of time for a connection (day of week, time)	747	733	98,1%	4,45	0,88	4	5	5	5	3,57	5,33
3	The quality of service at an airport	747	728	97,5%	4,23	0,97	4	5	5	5	3,26	5,21
4	The price of ticket for a flight connection from a particular airport	747	731	97,9%	3,94	1,19	3	4	5	5	2,75	5,13
5	Aesthetics and quality of the passenger terminal	747	730	97,7%	3,92	1,17	3	4	5	5	2,75	5,08
6	The proximity of the airport from place of residence	747	728	97,5%	3,85	1,17	3	4	5	5	2,68	5,02
7	Convenience of travel to the airport by car	747	723	96,8%	3,85	1,30	3	4	5	5	2,54	5,15
8	The availability of a suitable connection by a low-cost airline	747	721	96,5%	3,63	1,33	3	4	5	5	2,30	4,96
9	Price and availability of airport parking	747	664	88,9%	3,08	1,55	1	3	5	5	1,53	4,63
10	Convenience of travel to the airport by public transport (including rail)	747	676	90,5%	3,03	1,59	1	3	5	1	1,44	4,62

Source: own preparation.

Passengers recognize the availability of a direct connections without interchange as the most important factor in determining the choice of the airport in planning air travel (average score of 4.62 for all respondents with the exception of charter passengers - *Table 2* and 4.49 for business passengers - *Table 3*). The second factor for business passengers was the convenience of connection time - day of the week, time - with an average of 4.45, and the third factor was the quality of service at an airport - average 4.23. While the quality of service at the airport was just as high in the ranking prepared for general data (second place), the convenience of connection time was only in 5th position after factors such as: the price for a connecting flight, or the availability of an appropriate combination of low cost airlines. It should also be noted that the validity of the other factors was judged by business travelers as far inferior to the factors located on the first three positions. Both the average scores of all other factors (less than 4) and the measuring position (median 4 or less, the first quartile of 3 or below) were lower.

THE IMPORTANCE OF AIR CONNECTIONS FOR BUSINESS TRAVEL TO WROCLAW AND THE LOWER SILESIA REGION - A COUNTERFACTUAL ANALYSIS

Analyzing the importance of the airport in Wrocław for the development of Wroclaw and the Lower Silesia region and businesses from across the region, it must be remembered that the air travel is not only used by employees of Lower Silesian enterprises, but also by their contractors as well as representatives of foreign companies who are looking for a suitable place for the location of new investments of their companies. Hence flight connections affect the availability of city and the regional communication, and today, when air transport, as a mode of transport that offers the fastest movement is becoming more and more important, it is, to a large extent, an imperative condition.

Analyzing the role and importance of the airport in Wrocław for development of the city, and enterprises in the Lower Silesia region, a question arises as to, how many business passengers arriving by plane to Wroclaw (both foreign contractors of companies located in Wroclaw and Lower Silesia region, as well as potential new foreign investors) would not decide to travel to the city or region in the absence of air transport, that is, would make use of other travel options: by car (most common), by bus or by train. The authors of the questionnaire asked respondent passengers to answer the question that in the first round of the study (March-April) was: "If there would be no air connection would you visit Wroclaw (or region)?" In the second round study (July-August) the question was slightly modified and more specific: "Would you visit Wroclaw (or region) if there was no this flight connection"?

These questions and the way they are formulated can be regarded as compatible with the methods of counterfactual analysis, or heuristics simulation, the essence of which can be briefly described as an attempt to formulate or imagine different alternatives and hypothetical reaction or situation, on the basis of "what would happen if ".

In the question in the first round of the survey, respondents had to assume a hypothetical situation where there was an absence of any flights from/to Wroclaw, which enables the assessment of the importance of air connections to Wroclaw in general, in the second version of the question, its' specification made it possible to evaluate the significance of a particular air connection. The second version of the question implies the possibility that in the absence of air connection, which the respondent is currently using, he could choose another connection to Wroclaw from another airport or connection offered by another carrier. Despite these differences, the very similar nature of the question can however, according to the authors, present the results of the two rounds of testing alongside each other and be interpreted in the same way.

Table 4 presents the structure of business passengers by type of trip (beginning of trip, returning to place of residence, etc.). About 40% of business passengers using the airport in Wroclaw during the winter-spring of 2014 are people who come to Wrocław and Lower Silesia companies from other countries or other Polish regions (passengers who have declared their return to their area of permanent residence or any other type of travel, for example one of the stages of a longer trip). This group accounted for 13.85% of all respondent passengers in the period covered by the first survey. In the study in the summer months, these values amounted to 48.21% business passengers and 5.66% of the total passengers. The question about traveling to Wroclaw or region in the absence of a connection was asked only to passengers from outside of Wroclaw and the region, namely, those declaring a return to their permanent residence or "other, for example: one of the stages of a longer journey." A summary of results and the structure of the answers to these questions are presented in *Table 5*. The survey, conducted in the summer months added the answer choice "I do not know" to the catalog of possible answers, which was not in the first round of the survey. Hence, "X" marks the lack of information from the first test.

Table 4

Structure of business passengers traveling according to type
(research during the months of March-April and July-August 2014)

Type of trip	1st round of study (March-April 2014)			2nd round of study (July-August 2014)		
	Number of surveys	% of business passengers	% the total number of passengers (100%= 4050)	Number of surveys	% business passengers	% the total number of passengers (100%= 11 616)
Beginning of trip	840	59,45%	20,74%	699	51,28%	6,02%
Travelling back to place of permanent residence	541	38,29%	13,36%	640	46,96%	5,51%
At the airport in Wroclaw only on transit	12	0,85%	0,30%	7	0,51%	0,06%
Others (eg on a multi-step journey)	20	1,42%	0,49%	17	1,25%	0,15%
Total business passengers	1413	100,00%	34,89%	1363	100,00%	11,73%

Source: own preparation.

Table 5

Responses to the question about the travel to Wroclaw in the absence of air connection
(research during the months of March-April and July-August 2014).

Variant of answers to the question concerning travel in the absence of air link	1st round of study (March-April 2014)			2nd round of study (July-August 2014)		
	Number of surveys	% Business passengers		Number of surveys	% Business passengers	
		Returning to their place of residence and in the course of a long journey (100%=561)	Total (100%= 1413)		Returning to their place of residence and in the course of a long journey (100%=657)	Total (100%= 1363)
Yes	398	70,94%	28,17%	514	78,23%	37,71%
No	117	20,86%	8,28%	106	16,13%	7,78%
I don't know	X	X	X	21	3,20%	1,54%
No answer	46	8,20%	3,26%	16	2,44%	1,17%
Total	561	100,00%	39,70%	657	100,00%	48,20%

Source: own preparation.

Among business passengers who flew to Wroclaw and the Lower Silesia from other countries or other Polish regions during the months of March-April 2014, a group of 20,86% of the business passengers declared that they would not decide to come to Wroclaw by other means of transport, if there were no air connections, meaning they would not visit neither the city nor the region. This group accounted for 8.28% of all business travelers. Slightly lower rates of the structure in the study of the summer months: 16.13% of the visiting business passenger and 7.78% of the total business passengers respectively. On the one hand, the results cannot be considered very high, but on the other hand you cannot ignore the fact that 1/5 of business passengers visit the city during the winter-spring and more than 1/6 in the summer decided to come to Wroclaw only because there was a connecting flight. These results confirm the role and significance of air transport for the transport accessibility of the region, which today is one of the main factors determining the location of foreign investment, on the other hand, allows for contact of domestic companies with the European and global markets, which is one of the conditions for their development.

The above analysis applies to all business passengers, whose residence is neither Wroclaw nor the Lower Silesia region. However, not all passengers belonging to this group are businessmen arriving from abroad. Wroclaw airport during the research, passengers had direct connections to other national airports: Warsaw-Okecie (PLL LOT), Warsaw-Modlin (Ryanair), Gdańsk (Eurolot, in the summer months Ryanair also) and Lublin (Eurolot). It is, however, very important to have a more detailed look at the answers given by business passengers arriving to Wroclaw from abroad. The structure of the answers by business travelers from abroad are presented in *Table 6*.

Table 6

Structure of business passengers from abroad response to the question they would travel to Wroclaw in the absence of air connections (studies in the months of March-April and July-August 2014.

Variant of answers to the question concerning travel in the absence of air link	1st round of study (March-April 2014) Nr of surveys	% Business passengers – Returning to their place of residence and in the course of a long journey – Passengers from abroad (100%=420)	All passengers (100%=561)	Total (100%=1413)	2nd round of study (July-August 2014) Nr of surveys	% Business passengers – Returning to their place of residence and in the course of a long journey – Passengers from abroad (100%=388)	All passengers (100%=657)	Total (100%=1363)
Yes	287	68,33%	51,16%	20,31%	286	73,71%	43,53%	20,98%
No	93	22,14%	16,58%	6,58%	79	20,36%	12,02%	5,80%
I don't know	X	X	X	X	17	4,38%	2,59%	1,25%
No answer	40	9,52%	7,13%	2,83%	6	1,55%	0,91%	0,44%
Total	420	100,00%	74,87%	29,72%	388	100,00%	59,06%	28,47%

Source: own preparation.

Those who declared "abroad" as their place of residence were ¾ of business passengers arriving to Wroclaw in the study during the winter-spring period and almost 60% in the summer. The percentage of people who in the absence of air connection would not visit Wroclaw in a group of passengers from abroad was higher than for all individuals from outside of Wroclaw and Lower Silesia and amounted to 22.14% during the winter-spring period and 20.36% in the summer months. This represents a 6.58 and 5.80% of all business passengers in the first and second round of the study respectively. Furthermore, these figures demonstrate the great importance of the airport to ensure transport accessibility to the region, thereby increasing its competitiveness and promoting development. In accordance with the principles of the counterfactual analysis method, it can be concluded that in a group of about 6% of business passengers who would not come to Wroclaw in the absence of air connection, could find potential foreign investors who, are unable to reach quickly and easily to Wroclaw from another location of their business and not deciding (as declared) to travel by other means of transport, most probably wouldn't consider Wroclaw and Lower Silesia into account as a business location for their investments.

CONCLUSIONS

Analysis of the test results of the survey of passengers carried out at the passenger terminal at the airport in Wrocław in March-April and July-August 2014 confirms the importance of airports for the transport accessibility of the city and the region, which is, today, a factor in the economic development of the region and the businesses located on its area. Business passengers account for a significant group of passengers using the airport in Wroclaw. During the winter-spring months their share in total passenger traffic amounted to over 35%, while in the summer months - 11.73% (a decrease in the amount of business traffic results due to, among other factors, a lower number of business trips due to the holiday period, on the other hand - there is a growing number of passengers in other segments, mainly leisure travelers).

Business passengers account for the largest proportion of passengers for network airlines (Lufthansa, SAS) for destinations: to Warsaw (almost 70% during the winter and 50% in the summer months), the German hubs (68 and 43 percent respectively) and Copenhagen (63.45% during the winter, in the summer months the SAS flights to Copenhagen were suspended) and regional carrier - Eurolot (53 and 29 percent respectively). Thus, it is the network carriers such as (LOT, Lufthansa, SAS) that play a major role in the handling of passengers traveling for business purposes. It should be also noted that the regional carrier - Eurolot also makes a significant contribution. Connections by this airline were chosen by 5.7% of business passengers during the winter-spring period and 8.27% in the summer months. Regarding the network of low-cost carriers, only their destinations to the UK and Ireland support a noteworthy percentage of business passengers (almost 10%). There has also been an increased interest in connection to the Warsaw-Modlin. In the winter-spring period, 5.7% of passengers have selected these connections, while in the summer months by 8.27% business passengers (data from the second round of surveying in the summer months also cover passengers traveling to Gdansk).

An analysis of the structure of total passengers and business passengers proves that network carriers play a very important role for handling business traffic at the airport in Wroclaw. In order to enhance the positive stimulated effects of air transport on the economy of the region in terms of business development (e.g through the development of their business contacts and market access) and attract new investment, the people responsible for the creation of regional development policy should, therefore support actions aimed primarily at increasing the number of destinations and routes of network carriers making their network more attractive. The results of the survey also suggest that regional carriers can also have an important role for business traffic, offering direct connections to European cities that are business centers, but also at major airports, as opposed to low-cost carriers which offer connections to airports that are frequently located more than an hour away from the city centers. The availability of a direct connection with no inter-changing has been recognized by business travelers as the most important factor in determining the choice of the airport in planning air travel (average score of 4.49 on a scale of 1-5).

Among the business passengers who flew to Wroclaw and the Lower Silesia region from other countries or other Polish regions during the months of March-April 2014, 20.86% of the passengers declared that they would not decide to come to Wroclaw by other means of transport, if there were no air connections, meaning they would not visit the city, or region at all. This group accounted for 8.28% of all business travelers. Slightly lower rates in the structure were obtained in the study during the summer months: 16.13% of the visiting passengers and 7.78% of the total business passengers respectively. The percentage of people who, in the absence of an air connection would not visit Wroclaw, in the group of passengers from abroad was higher than for the general from people outside of Wroclaw and Lower Silesia and amounted to 22.14% in the months of winter-spring, and 20.36% in the summer months. This represents a 6.58 and 5.80% of all business passengers respectively in the first and second round of the study. These figures also demonstrate the great importance of the airport to ensure transport accessibility to the region, thereby increasing its competitiveness and promoting development, which should be taken into account both in the regional development policy, as well as developmental actions.

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BIBLIOGRAPHY

Augustyniak, W. (2014), Efficiency Change in Regional Airports During Market Liberalization, *Economics and Sociology*, Vol. 7, No 1, 2014, pp. 85-93. DOI: 10.14254/2071-789X.2014/7-1/8

ACI Europe, (1998), *Creating Employment and Prosperity in Europe,* September 1998.

ACI Europe, York Aviation, (2004), *The social and economic impact of airports in Europe*, January 2004.

ACI Europe, York Consulting, (2000), *Creating employment and prosperity in Europe: an economic impact study kit*, , February 2000.

ATAG, (2008), *The economic and social benefits of air transport 2008*, Air Transport Action Group, Geneva 2008, www.atag.org (accessed on 24 Feb., 2012).

Braathen S., S. Johansen, J.I. Lian, (2006), *An inquiry into the link between air transport and employment in Norway*, Association for European Transport and contributors, 2006, http://web.mit.edu (accessed on 11 March, 2012).

Butler S.E., L.J. Kiernan, (1986), *Measuring the regional economic significance of airports*, U.S. Department of Transportation F.A.A., Report No. DOT/FAA/PP/87-1, Washington 1986;

Butler S.E., L.J. Kiernan, (1992), *Estimating the regional economic significance of airports*, U.S. Department of Transportation F.A.A., Washington 1992.

Cooper A., Ph. Smith, (2005), *The Economic Catalytic Effects of Air Transport in Europe*, EUROCONTROL Experimental Centre, EEC/SEE/2005/004, 2005.

Halpern N., S. Brathen, (2010), *Catalytic impact of airports in Norway,* Report 1008, Moreforsking Molde 2010.

Huderek-Glapska S., (2011), *Wpływ portu lotniczego na rozwój gospodarki regionu*, PhD Thesis, Poznań 2011.

Huderek-Glapska S., (2012) *The Employment and Income Benefits of Airport Operation on the Counry in Transition*, Przegląd Komunikacyjny nr 2 (2012).

Kalinowski, S. (2014), Impact of Investment Activity on European Regional Airports Performance, *Economics and Sociology*, Vol. 7, No 3, pp. 40-50. DOI: 10.14254/2071-789X.2014/7-3/3

Pancer-Cybulska E., Ł. Olipra, L. Cybulski, A. Surówka, (2014), *The Impact of Air Transport on Regional Labour Markets in Poland*, Publishing House of the Wroclw University of Economics, Wrocław 2014.
Vasigh B., K. Fleming, T. Tacker, (2008), *Introduction to Air Transport Economics. From Theory to Application,* Ashgate, Aldershot, Burlington 2008.
Wells A. T., S.B. Young, (2004), *Airport Planning and Management,* McGraw-Hill, New York 2004.
Wilbur Smith Associates, (1988), *The economic impact of Los Angeles International Airport. Final Report 1988*, City of Los Angeles Department of Airports, Los Angeles 1988.