



THE IMPACT OF OPENING BERLIN BRANDENBURG WILLY BRANDT AIRPORT ON THE POLISH AVIATION MARKET

Wojciech Augustyniak

Poznań University of Economics and Business, Poznań, Poland

ABSTRACT. Introduction: In the past decade, the Polish airport market has seen an unprecedented increase in passenger numbers. Regional airports in the second half of the XX century functioned as monopolies in a market heavily typified by Chicago style bilateral contracts. Consequently, a "hub-and-spoke" system has been in operation, where the regional airports perform the role of first port of call for passengers flying into a hub. Open skies policy, as well as the emergence of low cost airlines in 2004 upgraded the status of regional airports to that of regular commercial ones. Many of these had the opportunity to report a profit for the first time, as well as being able to function in a competitive environment where they could directly compete with other airports both for new carriers, in order to expand their connection network, as well as for new passengers. In this environment, a key factor to success to an increasing extent has become the airport's position in the market in comparison to similar sized airports as well as in reference to developing hubs like Berlin.

Methods: Using information about network connections, the number and type of passengers at specific airports, flight times and distances to and from airports, a 2 hour isochrone analysis was carried out and 4D strategic maps were constructed. As a result of the data analysis it was possible to identify several market subgroups consisting of airports competing for the same passenger, network connection and/or geographical profile.

Results: Accepting as a premise that the further development of Berlin as a hub will see the airport maintaining a similar carrier structure and list of destinations on offer, it can be classified in the same strategic group of hub airports as Prague and Warsaw. The results identified a relatively consistent group of the 6 biggest regional Polish airports as well as a group of second-tier international hubs which shared certain characteristics of regional airports. The final group to be identified in the results was that of the smallest Polish airports whose importance for the market is negligible.

Conclusions: The growth of Berlin Brandenburg Airport Willy Brandt (BER) as a hub airport poses a greater threat to the influence of Warsaw's Chopin Airport (WAW) in western Poland than to the functioning of regional airports in Poland. These airports as well as developing quick intermodal connections will have to increasingly actively find their own niches in the market. A potential threat to Wrocław (WRO) airport may in the future come from the growth of smaller German airports such as Leipzig and Dresden and/ or their Czech equivalents. In the eventuality of an abolition of restrictive visa requirements between Poland and Russia, a similar phenomenon may be observed in the future with the airports in Gdansk and Kaliningrad.

Key words: airport, competition, strategic maps, catchment area, airports.

INTRODUCTION

Currently under construction, the airport previously known as BBI (Berlin Brandenburg International) and now known as Berlin Brandenburg Airport Willy Brandt, was scheduled to be opened in 2010. Due to various factors including a lawsuit by local

inhabitants forced to relocate, construction faults as well as a corruption scandal, the opening date was postponed several times. Currently very optimistic estimates predict that the airport will be operational by the end of 2016, whilst pessimistic predictions suggest that it could be as late as 2018/2019 [Eddy 2013, was/mik/dpa 2014].

According to both press reports and Schönefeld (SXF) airport authorities, currently already around 10% of passenger traffic at Berlin airports, that's to say 2 million passengers, is made up of inhabitants of western regions of Poland. After opening the new airport, authorities will aim to significantly increase passengers' numbers through expansive marketing, which will also include directly targeting potential travellers from Poland [mice.pl 2011, tur-info.pl 2012].

In light of the information above, the question arises as to whether the airport authorities of regional airports in western Poland or even those of Warsaw airport should feel threatened by a drop in passenger numbers. If so, will these passengers be business, tourist, long or short-haul travellers? The second issue, of greater primary importance in answering the originally posed question, is to identify the strategic position of competing Polish airports in reference to each other as well as in reference to those of neighbouring countries. Research carried out to date on the competitiveness of the Polish airport market was generally limited to only analysing domestic competition within the country [Augustyniak, Olipra 2014, Sajdak 2011]. In the research presented in this paper, the geographic areas analysed will be divided into catchment areas irrespective of national borders representing areas of potential competition between airports for potential passengers. Additionally, with the help of strategic 4D mapping it will be identified whether a given airport can be included in a corresponding strategic subgroup of airports within which it competes internally.

METHODOLOGY

Different definitions exist in academic papers as well as in business practises when trying to define the geographical catchment area of an airport. One of the most common definitions of a catchment area is the area around an airport from which the majority of its passengers and cargo come from [Jankiewicz 2012]. Sometimes this definition is expanded to also include the destination of the aforementioned passengers and cargo. [Civil Aviation Authority 2011].

Probably the most accurate way of empirically expressing the flow of passengers to and from an airport is with the use of a standardized questionnaire. An example of this is the research carried out by Pantazis and Liefner [2005] within which over 15,000 passengers in the departure hall of Hanover airport were interviewed about, among other things, their travel destination and home location. The results revealed that for passengers travelling for the purpose of tourism e.g. by charter flight or by low cost airline, the catchment area may extend up to 300km (Hanover - Berlin) from the airport and that the price of the ticket and not the journey time is the most important factor for the passenger.

The hypotheses mentioned above are in agreement with the conclusions of a Civil Aviation Authority report in which it is assumed that business travellers have a smaller tolerance towards travel times to and from airports in comparison to passengers travelling as tourists. Business travellers are prone to sacrifice a maximum of one hour to get to and from the airport. In comparison, according to the CAA, tourist passengers are prepared to devote twice as much time for this purpose. The aforementioned approach is very commonly visually represented with the use of isochrone lines- depicting equal travel times to and from an airport. In this particular publication it was assumed that the maximum travel time to the airport was 2 hours. However, the demarcated area should be considered as being purely theoretical since the geographical area that it covers may turn out to be partially uninhabitable or conversely it may represent so many service options that it is characterised by streams of passengers arriving from completely different areas. A less precise form of graphical representation of catchment areas are zones made up of concentric circles with diameters of 100, 200 or 300km, though this method has an inherent fault in that there is no direct link with transport method and actual travel time. Despite this, this form of representing competition range is very popular among Polish airports and is published on their official websites.

There exist automated ways of combining quickly prepared maps such as isoline maps

with empirical accuracy comparable to that of questionnaires. An example of this approach is a mathematical model proposed by Lieshout [2012]. The author on the basis of a questionnaire survey, outlined 3 groups of the most influential factors for passengers when deciding on their choice of point of departure and destination. These are; price, flight frequency and how far away the airport is from the start point and the travel destination. Lieshout noticed, among other things, that the catchment area of airports was not particularly great in the case of popular tourist destinations. In this case, passengers have a bigger choice of routes, carriers, departure times, prices and standards of service. Therefore, it could turn out that for example, a person living close to airport 'A' may prefer to fly out of airport 'B' located further away due to a cheaper ticket price or due to inconvenient flight times.

Similarly, less popular destinations (in general intercontinental destinations) increase the catchment area of an airport. The airport then has, to a certain degree, a geographical monopoly on that specific destination. In other words, passengers even living relatively far away from a given airport don't have an alternative, unless they consider a flight with a stopover.

ISOCHRONES ANALYSIS

Table 1 presents information about the number of possible destinations available and the number of passengers served in 2013 at Polish airports and at foreign airports located within a 2hour drive away from Poland. Only airports that in 2013 offered at least 15 permanent destinations (i.e. not seasonal offers for example offered by charter airlines), and where the total passenger traffic was at least 1 million were selected for further analysis. These airports were highlighted in bold in Table 1.

Table 1. Number of regular destinations and passenger traffic in 2013

Tabela 1. Liczba regularnych połączeń pasażerskich w 2013

IATA	Country	Destinations	PAX [mln]
BER*	GER	188	26.4
PRG	CZ	133	11.0
WAW	PL	74	10.7
VNO	LT	48	2.7
GDN	PL	40	2.8
KRK	PL	39	3.6
KTW	PL	39	2.5
WMI	PL	26	0.3
WRO	PL	26	1.9
LEJ	PL	22	2.2
DRS	GER	18	1.8
POZ	PL	16	1.3
KGD	RUS	16	1.3
RZE	PL	11	0.6
LWO	UA	10	0.7
BZG	PL	6	0.3
KUN	LT	9	0.7
KSC	SLO	7	0.2
SZZ	PL	6	0.3
LCJ	PL	5	0.4
LUZ	PL	5	0.2
BRQ	CZ	4	0.4
OSR	CZ	3	0.3
TAT	SLO	1	0.0
IEG	PL	1	0.0

*BER= TXL+SXF

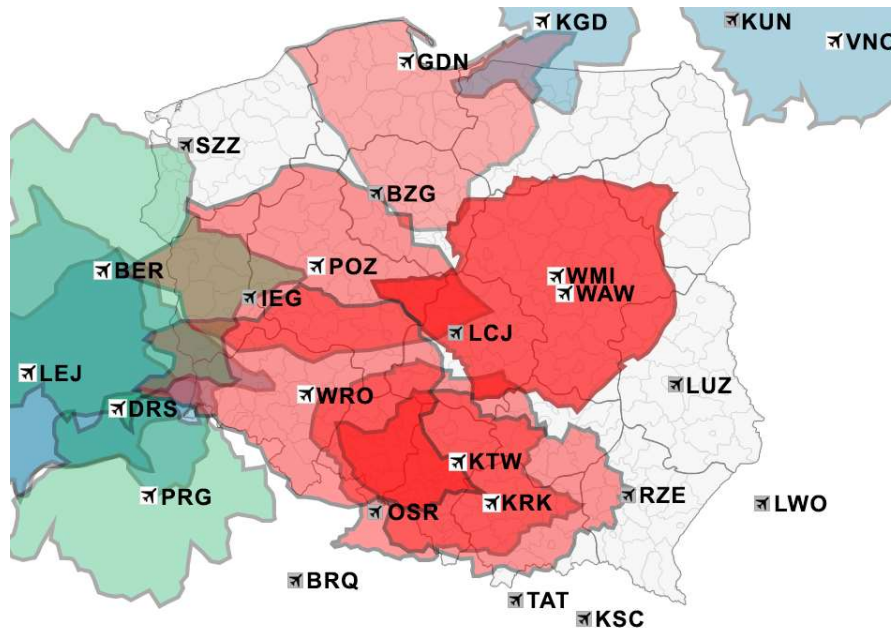
Source: own compilation based on ulc.gov.pl and airports' websites

These limiting factors were chosen in order to increase the readability of the catchment area map by eliminating possible overlaps from small airports whose limited options and destinations are not a real threat to larger airports. An example of this is the exclusion from further analysis of the IEG airport in Zielona Gora (Babimost) which offers one regular flight to Warsaw and is unlikely to be a realistic alternative for local inhabitants considering that Poznan or Berlin airports offer dozens of destinations.

On the map 1, airports fulfilling the parameters mentioned above were marked with a white icon. Next, using various colours two hour isochrone lines were marked out around each airport. Red was used to mark the potential catchment area of Polish airports, blue was used for regional airports abroad and green was used for foreign hub airports including Berlin (BER). Airports which did not satisfy the inclusion parameters were marked with grey icons. Airports such as Olsztyn-

Mazury, Kielce-Obice, Radom- Sadkow or Gdynia-Kosakowa, which do not offer a single

regular transfer were omitted from the map.



Source: own elaboration

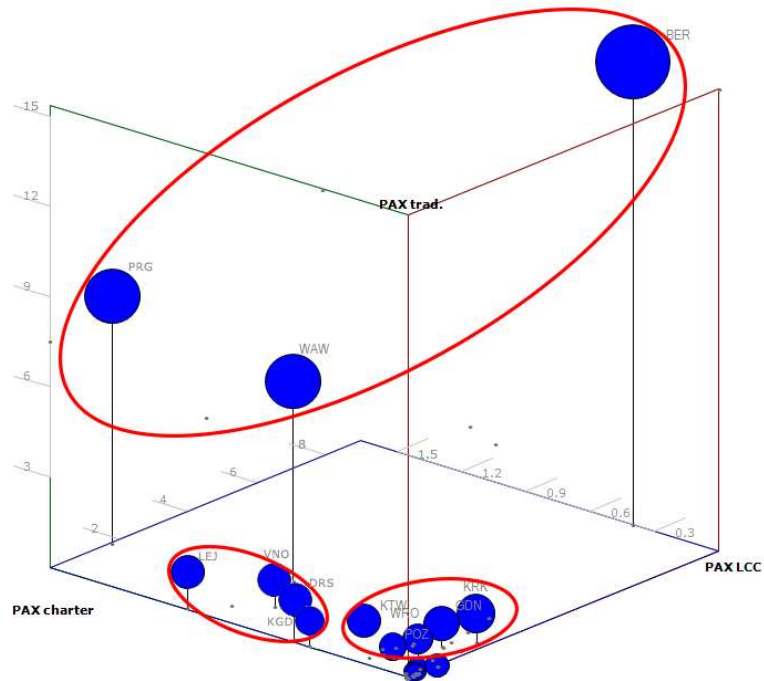
Map. 1. Catchment areas of potentially competitive airports
Mapa. 1. Obszary wpływów potencjalnych konkurencyjnych lotnisk

With the aim of analysing the map of strategic groups was used to ascertain whether the aforementioned geographical areas really correspond to potential competition zones. 3D maps for each airport included the following four variables for types of carrier services chosen by passengers: (LCC- low cost carriers), traditional (FSC- full service carrier) as well as charter. The fourth variable is represented with the help of the size of the 'bubble' and represents the total number of passengers served in 2013.

On the basis of observed similarities within passenger profiles, 4 strategic groups were defined. The first group consists of 3 hub airports which serve the following capital cities: Warsaw, Prague, Berlin. The observed similarities in this case are, above all else, passenger traffic (above 10 million a year) and a high frequency of connections inherently associated with that traffic. A second trait linking these hubs is the broad range of stopovers available for long-haul flights with traditional carriers which are not available at airports serving smaller agglomerations. However, this group is not entirely uniform.

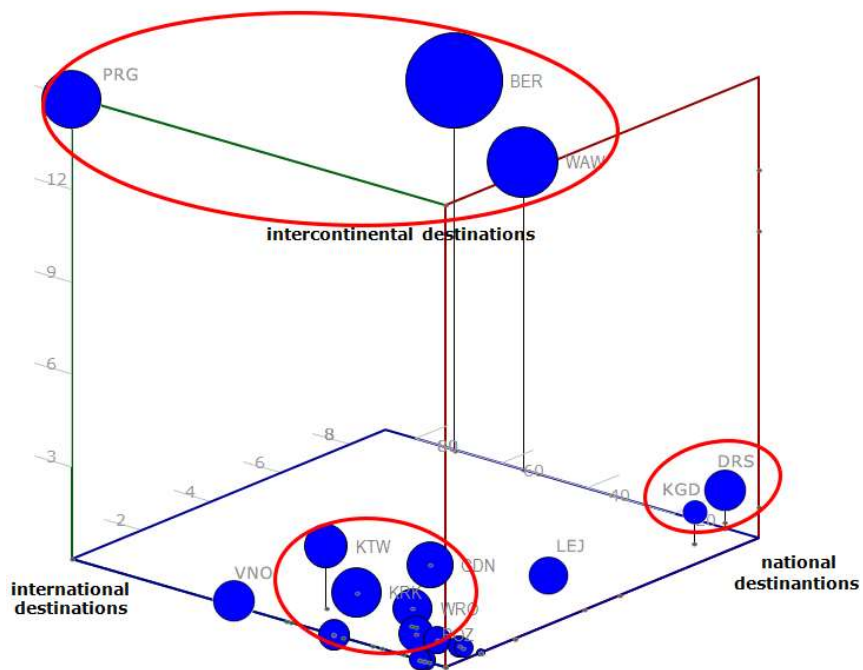
Prague differs from the other two airports in that it serves more tourists on charter flights. Berlin on the other hand serves more passengers flying with LCC. This could possibly be explained by the fact that Berlin doesn't have an airport that specialises in such flights, as is the case with WMI airport near Warsaw.

The second strategic group consists of 4 regional airports: Leipzig, Vilnius, Dresden and Kaliningrad which other than offering a broad range of charter flight services also offer a relatively broad range of FSC traffic considering their respective agglomeration sizes. Whether these airports can be considered as hubs or spokes can be answered by further graphical analysis. The third group is made up of the biggest Polish regional airports which specialise in LCC and charter flights. The last group consists of airports with very small passenger traffic (less than 1 million passengers per year) and is mainly made up of airports represented by grey icons on maps 1,2,3.



Source: own elaboration

Fig. 1. Airports' strategic groups according to type and number of passengers
Rys. 1. Grupy strategiczne lotnisk według typu i liczby pasażerów



Source: own elaboration

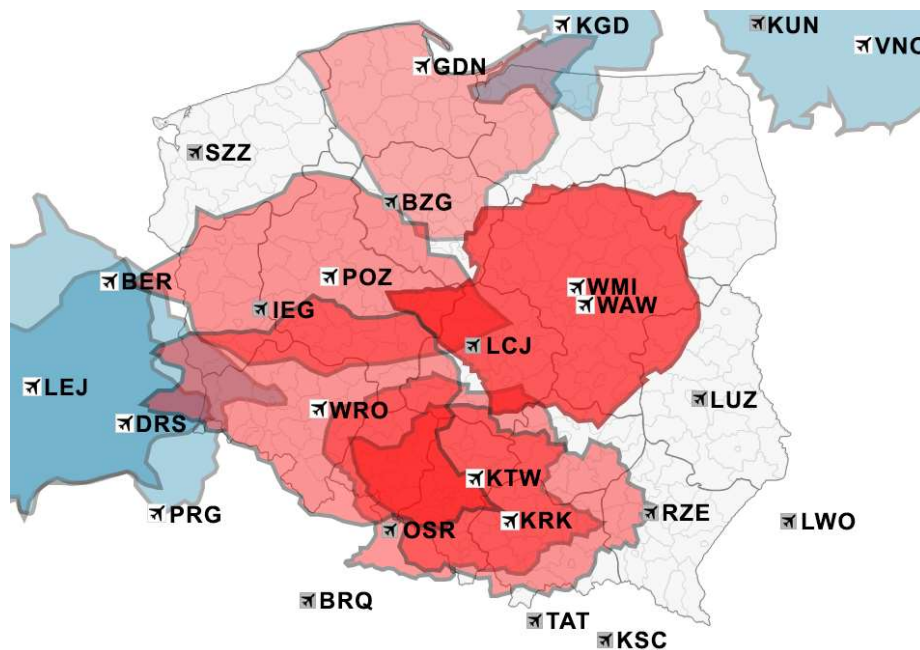
Fig. 2. Airports' strategic groups according to types and number of destinations
Rys. 2. Grupy strategiczne lotnisk według typu i liczby destynacji

Strategic groups were also marked on graph 2 but for different variables. The number of domestic, international European and intercontinental long-haul flights were laid out on 3 separate axes. The fourth variable which is represented by various sizes of "bubble" again represents the amount of passenger traffic in 2013. Again 4 strategic groups emerged though their boundaries this time were less clear. The biggest group was yet again made up of PRG, WAW and BER. They were the only airports to offer a large number of direct intercontinental flights. PRG stands out from this group as it offers no domestic connections, but when taking into consideration the size of the Czech Republic this can be seen more as a fault in the methodology rather than an anomaly.

The second group again consists of the large regional airports KGD and DRS, as well as VNO which although outwardly would appear to stand out, was included in the group,

but only after ignoring the fact that it offers no domestic connections due to the small size of the country its located in. KGD and DRS can be seen as being spokes 'feeding' hubs within the hub-and-spoke system since they offer a relatively high number of traditional carrier connections which to a large degree are short-haul flights to larger hubs. The position of LEJ is not so clear - the small number of domestic connections positions this airport closer to regional Polish airports. The third and fourth groups consist of regional Polish as well as "micro" airports.

The catchment areas from map 1 after taking into account information gained from both graphs presenting strategic groups were divided into maps of competition zones between hubs and the remaining regional airports. Map 2 represents the potential overlapping catchment areas of regional airports.



Source: own elaboration

Map. 2. Catchment areas of potentially competitive regional airports
Mapa. 2. Obszary wpływów potencjalnych konkurencyjnych lotnisk regionalnych

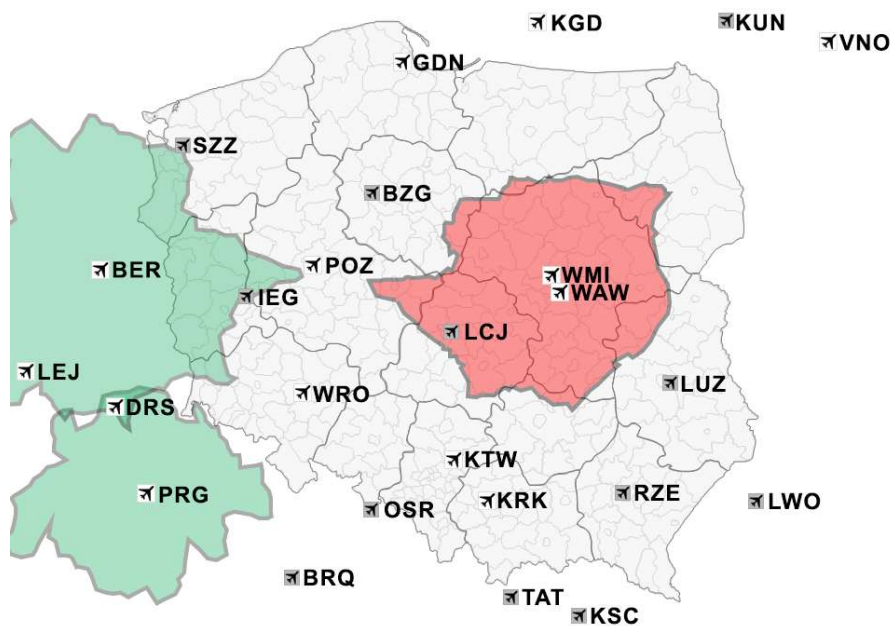
The results show that the biggest competition on the family market appears in the south (the most densely populated) part of the country. In some cases we can observe specialist airports as described by Graham

(2003). Apart from the previously mentioned WMI which serves LCC and WAW which concentrates on FSC traffic for the same urban agglomeration, the same situation can be observed for KTW and KRK which are only

50km away from each other. KTW specialises to an ever increasing extent in charter flights (including intercontinental) as well as (though not visible on the graphs) cargo transport. The percentage of low cost passengers is the same in both airports and equals 70% though in nominal figures Krakow has almost double the traffic of Katowice.

Ryanair has its fleet base in Krakow, whilst Wizzair has its in Katowice. This situation has far reaching and expansive consequences since a given carrier is more connected to a place where it keeps its planes overnight. Thanks to this, the stiff competition between carriers for passengers extends to competition between airports for passengers. From this perspective, Krakow and Katowice are similar to Luton (the Wizzair base) and Stansted (the Ryanair base) which split the well established London LCC market [Graham 2003].

This specific phenomenon cannot be seen in other areas of potential competition e.g. WRO-POZ or WRO-DRS. However, with the rapid development of intermodal transport, this kind of phenomenon may also be observed here too in the future. The analysis of the strategic group map should confirm GDN's comfortable position as a regional monopoly. It's the only developed regional airport in northern Poland. At the same time, it is the first choice airport for the central coast area. As it turns out, the inhabitants of the North-East also have the option of using KGD and VNO airports, though the former is not a popular choice due to the need to possess a visa for the Russian Federation which complicates and increases travel costs. These complications do not exist for potential passengers of VNO airport, which can be seen as a viable alternative to GDN and WAW.



Source: own elaboration

Map. 3. Catchment areas of potentially competitive hubs
Mapa. 3. Obszary wpływów potencjalnych konkurencyjnych hubów

Map 3 presents the potential catchment areas of the hub airports; PRG, WAW and BER. According to the analysis of the strategic 4D maps it was confirmed that they are not in direct competition with regional airports, whose offers are generally connected to other types of carriers as well as a different passenger profile. According to map 3, PRG and BER are to a certain extent in direct

competition with each other. However, it is worth remembering that a passenger who is travelling as a tourist is frequently prepared to travel up to 300km to their departure airport which often means exceeding the two hour isochrones. Under these circumstances, it would be fair to state that on the Polish market, BER is in competition mainly with the hub WAW and that this competition for customers

largely takes place in the Wielkopolska voivodeship.

CONCLUSIONS

In order to analyse whether the opening of BER as an alternative to TXL and SFX will significantly threaten the position of regional airports in western Poland, an analysis of a 2h isochrones and strategic 4D maps were carried out. Assuming that the further development of BER will be based on a similar carrier structure and destination profile as currently scheduled to be on offer, then this airport can be categorised as being in the same strategic group as PRG and WAW. Only a small portion of passenger traffic will encroach on offers from regional airports such as POZ, WRO, SZZ or IEG. This naturally leads to the hypothesis that the future expansion of BER will be more of a direct threat to WAW than to smaller regional airports. These will have to increasingly look for their own niches in light of quicker intermodal connections and greater encroachment on their catchment areas. A potential threat to WRO could in the future come from the expansion of smaller German airports like LEJ or DRS or aspiring Czech airports e.g. OSR or BRQ. Additionally, with an abolition of the restrictive visa politics between Poland and the Russian Federation a similar phenomenon may also be observed in the future in regards to GDN and KGD.

REFERENCES

- Augustyniak W., Olipra Ł., The potential catchment area of Polish regional airports, *Journal of International Studies*, 7, 3, 2014 144-154. <http://dx.doi.org/10.14254/2071-8330.2014/7-3/13>
- Civil Aviation Authority, 2011, Airport market power assessments, Catchment area analysis Working Paper <http://docplayer.net/318953-Catchment-area-analysis.html> [access: 29.10.2016]
- Eddy M., 2013, Mayor to Leave Panel Overseeing Delayed Berlin Airport, *The New York Times*, http://www.nytimes.com/2013/01/08/world/europe/mayor-to-leave-panel-overseeing-delayed-berlin-airport.html?_r=0 [access: 29.10.2016]
- Graham A., 2003, *Managing airports: An International Perspective*, (second ed.), Butterworth-Heinemann, Oxford. <http://dx.doi.org/10.1002/jtr.407>
- Jankiewicz J., 2012, Analiza i prognozowanie popytu na pasażerskie przewozy lotnicze na przykładzie wybranych regionalnych portów lotniczych w Polsce [Analysis and programming of demand and on passengers flights base on example of selected regional airports in Poland], *Przegląd komunikacyjny*, 2/2012.
- Lieshout R., 2012, Measuring the size of an airport's catchment area, *Journal of Transport Geography*, 25, 2012, 27–34.
- Pantazis N., Liefner I., 2005, The impact of low-cost carriers on catchment areas of established international airports: The case of Hanover Airport, Germany, *Journal of Transport Geography*, 14, 4, July 2006, Pages 265–272. <http://dx.doi.org/10.1016/j.jtrangeo.2005.05.002>
- mice.pl, 2011, Czy nowoczesne lotnisko w Berlinie zagrozi polskim portom lotniczym? [Is a new airport in Berlin a threat to Polish airport?]
- Sajdak M., 2011, Pozycja konkurencyjna regionalnych portów lotniczych w Polsce [Position of competitive regional airports in Poland], w: Rekowski M. (red.), *Regionalne porty lotnicze - charakterystyka i tendencje rozwojowe*, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, 330-354. ISBN: 978-83-7417-626-2
- tur-info.pl, 2012, Czy nowe lotnisko w Berlinie zagrozi polskim portom? [Is a new airport in Berlin a threat to Polish airport?], http://www.tur-info.pl/p/ak_id.35742.,berlin.brandenburgia.tegel.sch_nefeld.berlinskie_porty_lotnicze.berlin.html [access: 29.10.2016]
- was/mik/dpa, 2014, Korruptionsverdacht auf BER-Baustelle: Mehdorns Desaster ist perfekt [Mishandling at construction place in Berlin airport], *Der Spiegel*,

<http://www.spiegel.de/wirtschaft/unternehmen/hauptstadtflughafen->

[korruptionsverdacht-mehdorn-unter-druck-a-972277.html](http://www.korruptionsverdacht-mehdorn-unter-druck-a-972277.html) [access: 29.10.2016]

WPLYW OTWARCIA BERLIŃSKIEGO PORTU LOTNICZEGO IM. W. BRANDTA NA POLSKI RYNEK USŁUG LOTNICZYCH

STRESZCZENIE. Wstęp: Polski rynek lotniczy na przestrzeni ostatniej dekady doznał bezprecedensowego wzrostu dynamiki przewozów pasażerskich. Regionalne porty lotnicze w drugiej połowie XX wieku działały jako lokalni monopolisci na rynku mocno uregulowanym bilateralnymi umowami typu chicagowskiego. W konsekwencji funkcjonowały wyłącznie w systemie "hub-and-spoke", w których pełniły rolę pierwszego przystanku dla pasażerów lecących do hubów. Umowy otwarte nieba oraz pojawienie się przewoźników niskokosztowych w roku 2004 przeorientowały działalność polskich regionalnych lotnisk na typowo rynkową. Wiele z nich po raz pierwszy miało szansę na przekroczenie progu rentowności oraz funkcjonowanie w otoczeniu konkurencyjnym walcząc z innymi portami lotniczymi zarówno o nowych przewoźników generujących większą siatkę połączeń jak i nowych pasażerów. W tych warunkach kluczowym czynnikiem sukcesu w coraz większym stopniu staje się identyfikacja pozycji rynkowej względem podmiotów podobnej wielkości oraz rozbudowywujących się hubów takich jak lotnisko w Berlinie.

Metody: Korzystając z informacji o siatce połączeń, liczbie i rodzaju pasażerów w poszczególnych portach lotniczych, odległościach i czasach przejazdu z i do portów lotniczych dokonano analizy izochron 2h oraz skonstruowano mapy strategiczne 4D. W wyniku analizy udało się wyodrębnić kilka podgrup rynkowych składających się z portów konkurujących między sobą profilem pasażera, typem siatki połączeń oraz geograficznie.

Wyniki: Zakładając, że dalszy rozwój berlińskiego hubu będzie polegał na zachowaniu podobnej struktury przewoźników i oferowanych przez nich kierunków, lotnisko zakwalifikowano do tej samej grupy strategicznej co huby w Pradze i Warszawie. Wyodrębniono również dość spójną grupę 6 największych polskich regionalnych portów lotniczych oraz grupę dużych drugorzędnych hubów zagranicznych, których charakterystyka ma pewne cechy portów regionalnych. Ostatnia wyodrębniona grupa to najmniejsze polskie porty lotnicze, których znaczenie dla rynku jest znikome.

Wnioski: Rozwój berlińskiego hubu będzie w większym stopniu zagrażał penetracji rynku Zachodniej Polski przez warszawskie lotnisko Chopina, niż samej działalności polskich portów regionalnych. Te ostatnie wraz z rozwojem szybkich połączeń intermodalnych będą musiały coraz aktywniej szukać swoich rynkowych nisz. Potencjalne zagrożenie konkurencyjne dla lotniska we Wrocławiu może z kolei być w przyszłości coraz większym udziałem mniejszych portów niemieckich, takich jak Lipsk i Drezno oraz ich czeskich odpowiedników. W razie zniesienia restrykcyjnej polityki wizowej między Polską i Rosją podobne zjawisko mogłoby również wystąpić między lotniskami w Gdańsku i Kaliningradzie.

Słowa kluczowe: porty lotnicze, konkurencja, mapy strategiczne, catchment area, airports

DIE ERÖFFNUNG DES WILLY BRANDT FLUGHAFENS IN BERLIN UND SEIN EINFLUSS AUF DEN MARKT POLNISCHER FLUGDIENSTE

ZUSAMMENFASSUNG. Einleitung: Der Markt polnischer Flugdienste erlebte im Zeitraum der letzten 10 Jahre einen beispiellosen Zuwachs der Dynamik von Passagier-Luftfahrt. Regionale Flughäfen wurden in der zweiten Hälfte des 20. Jahrhunderts als lokale Monopolisten auf dem Markt, der stark durch bilaterale Abkommen über die internationale Zivilluftfahrt (Chicagoer Abkommen) reguliert war, betätigt. In Folge dessen traten sie ausschließlich im "Hub-and-Spoke"-System in Funktion, in welchem sie die Rolle der ersten Haltestelle für die die einzelnen Hubs anfliegenden Passagiere spielten. Die Abkommen über „den freien Himmel“ und die Betätigung von Niedrigkosten-Luftfahrt-Führern im Jahre 2004 stellten die Aktivität der polnischen Regional-Flughäfen auf die typische Freimarkt-Aktivität um. Viele von ihnen hatten zum ersten Male eine Chance, die Schwelle ihrer Rentabilität zu passieren und am Wettbewerb teilzunehmen, indem sie mit anderen Flughäfen sowohl um neue, ein größeres Flugverbindungsnetz anbietende Luftfahrt-Führer, als auch um neue Fluggäste haben kämpfen können. In diesem Sachverhalt wird im immer größer werdenden Ausmaße die Identifikation der eigenen Marktposition gegenüber den ähnlich großen Flugeinrichtungen sowie den sich intensiv etablierenden Hubs, wie dem Flughafen in Berlin, zu einem schlüsselhaften Erfolgsfaktor.

Methoden: Mit Hilfe von Informationen über das Verbindungsnetz, über die Anzahl und Art von Fluggästen in einzelnen Flughäfen, über die Entfernungen und Zufahrtszeiten zu den Flughäfen vor und nach dem jeweils erfolgten Flug wurden

eine Analyse von 2h-Isochronen vorgenommen und strategische 4D-Landkarten entworfen. Anhand der durchgeführten Analyse gelang es, einige Markt-Untergruppen, die aus den gegenseitig im Wettbewerb in Hinsicht auf das Fluggast-Profil, den Typ des Verbindungsnetzes und auf die geographische Lage stehenden Flughäfen bestehen, auszusondern.

Ergebnisse: Angenommen, dass die Entwicklung des Berliner Hubs auf der Aufrechterhaltung einer ähnlichen Struktur von Luftfahrt-Führern und den von ihnen angebotenen Destinationen beruhen wird, wurde der Berliner Flughafen zu der gleichen strategischen Gruppe wie die Hubs in Prag und Warschau qualifiziert. Es wurden eine ziemlich stark miteinander verbundene Gruppe von den 6 größten Regional-Flughäfen und eine Gruppe von großen ausländischen, allerdings zweitrangigen Hubs, deren Charakteristik gewisse Merkmale der Regional-Flughäfen besitzt, ausgesondert. Die kleinsten polnischen Flughäfen, die keine große Bedeutung für den Markt haben, machen die letzte dabei ausgesonderte Gruppe aus.

Fazit: Die Entwicklung des Berliner Hubs wird den westpolnischen Markt im höheren Grade über den Warschauer F. Chopin-Flughafen gefährden, als der Betätigung der polnischen Regional-Flughäfen selbst der Fall sein wird. Die letzteren werden in Hinsicht auf die rasante Entwicklung von intermodalen Verkehrsverbindungen immer aktiver nach neuen Marktlücken suchen müssen. Die mögliche wettbewerbsmäßige Gefährdung des Flughafens in Wrocław kann demzufolge in Zukunft durch die wachsende Anteilnahme am Markt seitens der kleineren deutschen Flughäfen wie Leipzig und Dresden sowie deren entsprechenden tschechischen Wettbewerber zustande kommen. Im Falle des Aufhebens der restriktiven Visa-Politik zwischen Polen und Russland könnte die ähnliche Erscheinung auch zwischen den Flughäfen in Gdańsk und Kaliningrad auftreten.

Codewörter: Flughäfen, Wettbewerb, strategische Landkarten, catchment area, airports

Wojciech Augustyniak
Poznań University of Economics and Business
Al. Niepodległości 10
61-875 Poznań, Poland
e-mail: w.augustyniak@ue.poznan.pl