

Attachment No 2

**The paper showing the description of the achievements and academic or artistic successes, in particular those set out in Art. 16 paragraph 2 of the Act, in English.**



## Contents

<b>I. General Information .....</b>	<b>3</b>
1. Personal Data .....	3
2. Diplomas and degrees .....	3
3. Information on previous employment in academic institutions .....	3
4. Posts in the Faculty of Economics of the University of Gdańsk.....	3
<b>II. Indication of the academic achievements under Art. 16 paragraph 2 of the Act of 14 March 2003 concerning degrees and the academic titles and degrees and titles in art (Journal of Laws of 2003, No. 65, item 595, as amended. Journal of Laws of 2005, No. 164, item 1365, Journal of Laws of 2011, No. 84, item 425 and Journal of Laws of 2015, item 1842).....</b>	<b>4</b>
1. Title of the achievement.....	4
2. Author, title of publication, year of publication, name of publisher.....	4
3. Discussion of the academic aim and the results achieved .....	4
4. Author's contribution to the development of scientific discipline .....	10
<b>III. Discussion of other academic and research achievements .....</b>	<b>10</b>
1. Achievements before receiving a doctor's degree .....	10
2. Areas and directions of research .....	12
3. Achievements after obtaining a doctor's degree according to the areas and directions of research.....	13
3. Research projects.....	19
<b>IV. Summary and list of figures of the educational achievements .....</b>	<b>22</b>



## **I. General Information**

### **1. Personal Data**

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### **2. Diplomas and degrees**

Master of Arts (MA), The Economy of Transport, received on 14th July 1995 at the University of Gdańsk, Faculty of Economics.

The Doctor's degree in the scope of Economics, received on 20th October 2004 at the University of Gdańsk, Faculty of Economics, the doctor's thesis: Marketing Strategies at the Polish Airports. The doctoral supervisor was Prof. Andrzej Ruciński.

### **3. Information on previous employment in academic institutions**

- from 2005 until now the Assistant Professor in the Department of Transportation Market at the Faculty of Economics of the University of Gdańsk,
- from 2005 to present the lecturer at private universities: University of Humanities and Economics in Elbląg (2005-2009), the Academy of Humanities and Economics in Łódź (2009-2010), the Pomeranian School in Starogard Gdański (2010 -2011), and then the University in Bydgoszcz (from 2011 until now).
- 1996-2004 the Assistant in the Department of Transportation Market at the Faculty of Economics of the University of Gdańsk.

### **4. Posts in the Faculty of Economics of the University of Gdańsk**

Since the beginning of employment at the University of Gdańsk I performed the following functions:

- since 2013 until now I am a member of the organizing committee of the Conference "TranSopot - Challenges of transport development in the 21st.", Faculty of Economics, University of Gdańsk, Sopot,
- since 2007 until now Vice-President of the Commission of the Faculty Scholarship for students, Faculty of Economics, University of Gdańsk, Sopot,
- 2004-2011 a member of the organizing committee of the Conference "The Problems of Polish Transport in the European Union", Faculty of Economics, University of Gdańsk, Sopot,

- 2000-2004 a member of the organizing committee of the Conference "Adaptation of Polish Transport to the requirements of the European Union", Faculty of Economics, University of Gdańsk, Sopot,
- 1997-2004 a faculty member of the committee concerning the plans,
- 1997-1999 a member of the organizing committee of the Conference "The Problems of Polish Integration into the European Transport System", Faculty of Economics, University of Gdańsk, Sopot.

## II. Indication of the academic achievements under Art. 16 paragraph 2 of the Act of 14 March 2003 concerning degrees and the academic titles and degrees and titles in art (Journal of Laws of 2003, No. 65, item 595, as amended. Journal of Laws of 2005, No. 164, item 1365, Journal of Laws of 2011, No. 84, item 425 and Journal of Laws of 2015, item 1842)

### 1. Title of the achievement

**Competition in the Polish Air Transport Market**

### 2. Author, title of publication, year of publication, name of publisher

Dariusz Tłoczyński, *Competition in the Polish Air Transport Market*, Publishing University of Gdańsk, Gdańsk 2016, ISBN 978-83-7865-381-3.

### 3. Discussion of the academic aim and the results achieved

The monograph *Competition in the Polish Air Transport Market* is my most important academic elaboration. Its main purpose is to analyze the competitive processes taking place on the Polish market for air transport services. The innovative nature of the publication results from the analysis of competition issues in air transport in relation to intra and inter-industry market. For the first time in the source literature the analysis of the market for airports and competition between them was made.

Polish market for passenger air transport, although it is a partial market of marginal importance among the global air transport, has a global character. For several dozen of years it has operated under conditions of full liberalization. The consequence of the introduction of the "open sky" policy was the appearance of foreign carriers, including low-cost ones. Air carriers began to adjust their services to the preferences of passengers. Large supply of services and relatively low prices cause that the load factor of the aircraft from year to year is increasing. As a result of Polish integration with the European Union the mobility of Polish society and the ratio of air transport movements are increasing. Travel behavior of Polish citizens changed. Passengers using Polish airports apart from business travels, also travel as tourists, visit a family or commute to the workplace. Every year the demand for air transport services increases which leads to an increase in the supply of transport services and the services concerning transport. At the same time the increased number of companies offering transport services intensifies competition.

Operators on the air transport market compete for passengers with other carriers operating within the global inter-industry market. For passengers this situation means greater accessibility to transport services, and for the operators the need for unconventional actions in order to be accepted by the passenger market offer. A passenger wishing to travel chooses means of transport and takes into account the carriers serving that segment of the market. The choice is made at the level of inter and intra-industry and based on the information coming from the markets. Air carriers compete with operators from other modes of transport and at the same time with each other, by offering aviation services to potential buyers.

Presented conditions were the basis of individualized research approach in relation to the problem of competition on the Polish market for air transport services. It was necessary to define instruments of competition. After applying them follows the activation of the supply side of the market and the expected benefits and values are delivered to the purchasers.

Those conditions inspired me to undertake research on issues of competition in the Polish air transport market. The choice of issue of this monograph is the result of my long academic interest regarding issues of the functioning of the air transport market and a limited number of academic publications devoted to the analysis of the mechanism of competition in reference to researched market segment.

The main objective of that work is to identify the factors that determine the development of competition on the Polish air transport market and assessment of their impact on that process.

To accomplish that research objective I assumed that the development of competition on the Polish air transport market is determined by the actions of players in this market that are taken in response to demand supply changes.

The main thesis of the work I completed with the following detailed hypotheses:

1. An important factor affecting the behavior of air carriers is the functioning of rail and bus operators.
2. The basic role in the formulation of the services offered by air carriers play preferences and transport behavior of the passengers.
3. Airports which several years ago had a monopoly position lose it because of the density of the network of airports and larger impact area of airports associated with the development of transport infrastructure.

The stated aim and theses of this work determined its structure. The structure of the monograph is divided into five chapters.

In the first theoretical chapter I defined the concept of the market, described its characteristics, pointed to the role of market mechanism in management processes. In addition, I discussed the types of competition. I presented the issues related to the structure and form of competition based on the assumption that market players operating in a volatile environment, implementing competitive strategies, are forced to implement instruments of competition. They are used in different ways depending on the phase of the product life cycle. They serve to achieve competitive advantage by market players.



In the second chapter I analyzed the Polish market for air transport services. I pointed to its specific characteristics. I made the division according to criteria that are important in shaping the market offer. I analyzed the most significant factors affecting supply and demand for air transport services, and also pointed out procedures of entities operating in the air transport market. One of the factors affecting the operation of the air transport market is the market transformation that changed the style and the concept of doing business in air transport. I showed that changes in the international aviation market had a major impact on the functioning of the Polish market. They caused, among others, the dynamic growth of this market. They also contributed to the expansion of air links and the increase in investment in the aviation environment. As a result of changes of the supply and demand the profile and buying behavior of passengers using Polish airports changed, too. Based on the results of my primary research I analyzed the profile of the passengers.

In the third chapter I focused on the most important instruments of competition. I discussed the factors affecting air service. I analyzed the air services offered by traditional and low-cost carriers. The carriers, differentiating services to selected segments of the market, shape the appropriate level of prices. Another part of the chapter I devoted to the pricing policy pursued by the entities operating on the Polish air transport market. Later I presented an innovative approach to distribution as an instrument of competition. I pointed to the role they play in the development of competition: the availability of services, the availability to the airport - "airport system links", the availability of air transport in the region and the availability of air transport time. In the last part of the chapter I discussed the formation of information policy and communication systems for the air transport entities.

In the fourth chapter I presented the results of my primary research concerning the inter and intra-industry competition in air transport. In the analysis of the factors influencing the development of competition I used the data obtained from the aviation institutions regarding the supply of air services on the Polish air transport market. I conducted an analysis of the competition in terms of inter and intra-industry, particularly in the segment of air carriers, airports and other entities operating around the airports. I determined the most important factors influencing the passenger's decision concerning the choice of the branch, and then the air carrier. I analyzed the competition between Wizz Air and Ryanair on regional routes from regional airports in Poland to London. I choose these routes as the most frequented by passengers of the Polish airports. In addition, I pointed the determinants conditioning the choice of airports and handling agents by air carriers.

In the fifth chapter I presented the perspectives of development of competition on the Polish air transport market. I discussed the most important models of privatization of the entities managing the aviation infrastructure and the course of privatization of Polish airports. I pointed to the need for rapid privatization of the Polish air carrier LOT Polish Airlines. In the next part of the work I presented the relationship between the influence of public institutions and the privatization of the air transport sector operators and the development of competition in the air transport sector. I indicated that as a result of technological progress and the development of competition it is necessary to implement innovative solutions in technical, organizational and marketing field. In the final part of the chapter I presented possible scenarios for the development of competition on the Polish air transport market. I also presented the most likely development of the market in a competitive environment.



The last part of the monograph is the summary in which I included the conclusions of the developed theoretical and empirical material, referring to the purpose and hypotheses.

In the study I used a variety of research methods, depending on the needs related to the process of research, conclusions and verifying the hypotheses, including:

- critical and cognitive analysis of the source literature, analysis of the source documents, policy papers, legal acts, reports, expert opinions,
- heuristic analysis involving the use of expert method to determine causal relationships occurring on the air transport market,
- segregation and grouping of primary data and secondary data from both the source literature and web publications, unpublished research results provided by researchers and data provided by the organizations involved in air transport, including the International Air Transport Association (IATA), the Civil Aviation Authority in Poland (ULC) and handling agents.

An important source of analysis were also the results of my own primary research. I realized these studies from July to November 2013 at all operating Polish airports by individual interview, using a standardized questionnaire, among passengers starting the journey by air. For the tests I made stratification sample based on the number of passengers and taking into account the specificity of air traffic at each port. I conducted the research among 2,428 people, i.e. 0.01% of the number of passengers served at Polish airports in 2012. Adoption of such criteria was necessary because of the impossibility of obtaining complete information from all airports on the structure of air traffic, age, position held and destination of passengers and other key criteria, as well as limited financial resources on primary research. I assumed that the world literature and the experience of Polish and foreign research centers allow non-random sampling techniques, when the tests are carried out by people with appropriate experience or expertise. In this situation, due to the fact that information about the possible error sample is insufficient, I limited the characteristic of the population to the description and not to statistical inference, because the source literature suggests that such a regularity of the "sample test can be applied to the community which sample is representative, without assigning them probabilities size of the error or their accuracy".

In the study I included every fourth passenger aged 18-80 years in each tested port, going at the time of research for security control. Tests were not carried out only at the airport in Modlin because during the study this port did not work. I realize that this is some diminution of the research process as the competition among low-cost carriers is carried out operating Modlin Airport and Warsaw Chopin Airport.

For the analysis of primary data I applied the method of correspondence analysis using the method of estimation of the data in the package Statistica. I also used the contingency tables and pivot tables of Excel. I did not present a full form of the analysis of the correspondence, because I did not use the values of its parameters in the interpretation of information from primary research. Based on the identified models I prepared two-dimensional projections of the first two eigenvalues of matrix decomposition Chi square, visualizing mutual relationships of the considered factors with the formulae of the principal component analysis (PCA - Principal Component Analysis) for the factors expressed in strong scales that I used to interpret the results of studies in the monograph.



Based on my own analysis of the primary and secondary data regarding the functioning of the air transport sector operators, I described a profile of passengers using Polish airports, I identified their expectations, and then analyzed the factors influencing the decision to choose the means of transport and a carrier. As a result of the author's analysis of competition on the inter and intra-industry market in the last part of the work I formulated the scenarios for the development of competition between the major players of air transport. I think that conclusions presented in this work may serve operators functioning on the air transport market.

I am also aware that the theoretical analysis presented in this work and empirical research that was carried out did not cover all the issues of the competition on the Polish market for air transport services. Nevertheless, the observation covered a wide range of issues, in particular relating to the behavior of passengers and the identification of factors that determine the development of competition on the young Polish liberalized air transport market. The analyses were based largely on valuable, hard-to-reach data regarding the operations of air carriers. Thanks to that the results of analyzes and theoretical considerations may support decision-making processes at both public institutions and aviation enterprises.

The discussions and analyses conducted in the monograph, based on my own primary and secondary research allowed to recognize the main research objective, which is to identify the factors that determine the development of competition on the Polish air transport market for and to assess their impact on this process that has been reached. Basing on the research I drew the following conclusions:

1. There is a need to analyze the behavior of the passengers using air transport by the operators functioning on the market for air transport services. The entities of the air transport sector should examine the transport behaviors, taking into account all the circumstances, stages and factors influencing making decision.
2. Assessment of air transport made by the passenger is dependent on the fulfillment of their expectations in relation to individual elements of the transport offer in air transport. The transport service should be enriched with a range of additional services, such as free baggage transportation, a specific place on board the aircraft, participation in loyalty programs. On the air transport market, comparing with other branch markets the most effective revenue management happens. Air carriers implementing a policy of yield management differentiate ticket prices depending on the season, events, interests in connections to the airport on a specific date. Passengers using air transport, by making a purchase, look for an air service at the lowest cost, despite the fact that they are able to pay more for it, and having properties resulting from the expectations in relation to other elements of the transport offer. The availability in air transport was considered in terms of purchasing services, airport, region and time. The passengers stated that the most frequently used means of transport in the relationship: the point of departure - the airport is a car. They also often use rail transport because that are certain to reach the airport. The availability of air transport depends on the attractiveness of the region, the number of carriers operating in the region and the number of direct air links. Carriers launch flight connections in regions attractive economically, affecting the development of the region's accessibility to air transport. Although there is a close correlation between air traffic in the region and the investment attractiveness of airports, the availability of time and accessibility of the region to the airport, the socio-economic conditions of the region and its economic potential,



greatly influence the development of the airport. The accessibility of air transport to the region and the time connectivity of air transport have high impact on the development of the competitiveness of air transport. In air transport promotion as a tool of competition plays an important role in the process of launching new connections or additional services, whilst stimulating awareness and creating transport needs it contributes to building the image of the carrier. The airline enterprises, highlighting their offer from the competition, use standard instruments of promotion: advertising, sales promotion, public relations, publicity and sponsorship.

3. On the air transport market there is intra and inter-industry competition, under which air transport companies competing for the passenger compete with each other and with rail and bus operators, as well as individual transport, using the available instruments of competition. The main competitors for passenger air transport in transport on short and medium distances are bus, rail and individual transport. Depending on the distance of travel and socio-economic status of passengers an evaluation of alternative means of transport takes place. Passengers travelling on business on domestic routes choose the air carrier or rail carrier, looking at the total travel time. Passengers traveling on domestic routes for tourism or family visits, choosing air and the bus carrier, look primarily at the price and travel time. In the segment of air domestic connections, despite the high frequency and competition from carriers of other sectors, there is a very strong impact of time of day and the time between the date of purchase and the journey on the price. Passengers making international air travels select the air carrier primarily basing on price, travel time and convenience of departure and arrival times. However, the travel time, the directness of the connection, convenience of departure and arrival times and air ticket price are the key elements influencing the decision on the selection of air transport. These factors also affect the competitive advantage by carriers. During the analysis of data I found that the air carriers compete with each other by price competition, but also non-price instruments, leading promotion campaigns, introducing new services to the market and increasing the scope of customer service. In addition, basing on my own primary research I established that the main determinants when choosing the airport by the passengers who arrive at the airport from outside the region are: competitive cost of travel to a destination, a large number of airports of destination and the distance from the airport. In the airports there is also competition between handling agents that provide services connected with servicing passengers, baggage and aircraft to airline operators and between providers of catering and trade services. These entities apart from the specifics of services use the price as an instrument of competition.
4. The privatization of the air transport sector entities, issues relating to state aid and innovation are factors influencing the development of competition. In order to achieve competitive advantage it is necessary to use these instruments. In light of the foregoing conclusions, there is a need to privatize Polish airports and quickly start the process of restructuring the national carrier LOT Polish Airlines. In relation to air carriers, public aid refers to funding operations, and in the case of airport financing or co-financing (subsidizing) activities of operators, mostly low-cost ones by the concerned airports and ports or regions and airports in terms of investment. Public aid accounting for involvement of public institutions in the functioning of the market, aligns and supports the development of competition in particular market niches. Air transport companies differentiating innovation activities should focus technology, product,



organization and marketing. Innovation policy in relation to the Polish air transport market should be the subject of continuous monitoring, checking interactions at the interface of port-carrier-passenger and implementing innovative worldwide solutions in this field. On the basis of forecasts for the development of the air transport market it is necessary to adjust supply to the growing demand and to introduce new instruments of competition to the market, which contribute to the development of the competitive process. The main prerequisites of the development of competition are these factors: economic, social, product, technology and organization.

I think that I proved a major monograph's thesis saying that the development of competition in the Polish air transport market is determined by the actions of players in this market, that are taken in response to changes on the demand side and the supply side. I also proved the detailed hypothesis.

#### 4. Author's contribution to the development of scientific discipline

The published monograph constitutes the **theoretical gap** resulting from incomplete knowledge on competition in the air transport services. I conducted a multi-faceted systematization of problems associated with the functioning and development of air transport services market. In addition, I made the typology and classification of regional air transport market. To complete the theoretical gap I also created a scheme of decision making while choosing air transport services. The monograph also fills the **empirical gap** resulting from the lack of research on the determination of profiles and transport behavior of passengers using air transport. My own concept concerning the development of competition in Poland is a complement to both the gaps: theoretical and empirical. At the same time the monograph is also complementary to **methodological gap** in scope of the identification and assessment of factors influencing the development of competition in air transport. The proposed method using the correspondence analysis uses several factors to assess competition in air transport.

I hope that the conclusions shown in this publication basing on my own primary research conducted in Polish airports and the analysis of secondary data, will be used in practice in aviation companies. They contribute to the further development of competition and will become an inspiration to regularly monitor this process on the Polish air transport market. In my opinion aviation entities, academic institutions should carry out similar marketing research, analyzing the profiles and needs of potential passengers.

### III. Discussion of other academic and research achievements

#### 1. Achievements before receiving a doctor's degree

Problems associated with the operation of air transport services market became the subject of my interest early in my career. In the first period my educational interests focused on the marketing and operation of the transport market. This resulted in the following publications:

1. **D. Tłoczynski**, *Methodology of educational needs in the Pomeranian region* [in:] *The e-duc@tion in the Pomeranian region*, Edited by C. Mańkowski, Work within the project of Leonardo da Vinci, Sopot 2003, p. 111-123.



2. D. Rucińska, A. Ruciński, **D. Tłoczynski**, *Implementation marketing in air transport market*, [w:] *Marketing on the air transport market*, Edited by D. Rucińska and A. Ruciński, Publishing University of Gdańsk, Gdańsk 2000, p. 225-259, share 4%.
3. S. Miecznikowski, **D. Tłoczynski**, M. Wołek, *Economics of rail transport*, Publishing University of Gdańsk, Gdańsk 2000, p. 30-57, share 27%.
4. **D. Tłoczynski**, *The terms of the functioning of Polish airports*, "Transport i Komunikacja" 2003, No. 1, p. 33-35.
5. **D. Tłoczynski**, *Implementation of affiliate marketing at regional airports*, "Spedycja i Transport" 2001, No. 11, p. 21-25.
6. **D. Tłoczynski**, *Availability of small and medium-sized enterprises to credit*, "Ekonomika i Organizacja Przedsiębiorstw" 1999, No. 4, pp. 14-16.
7. M. Wołek, **D. Tłoczynski**, *Information technology on the importance of the subject "Management in air transport"*, [in:] *Challenges and opportunities for Polish regional airports*, Wrocław Airport, Wrocław 1999, p. 205-212, share 50%.
8. **D. Tłoczynski**, *Methods of financial support for the development of small business*, "Ekonomika i Organizacja Przedsiębiorstw" 1999, No. 12, p. 21-23.
9. D. Rucińska, **D. Tłoczynski**, *Marketing strategies as part of business management*, Edited by The Universities of Baltic Higher School of Humanities, Koszalin 1999, p. 59-98, share 25%.
10. **D. Tłoczynski**, *The characteristics of small and medium-sized enterprises*, "Ekonomika i Organizacja Przedsiębiorstw" 1998, No. 6/581, p. 10-12.
11. **D. Tłoczynski**, *Capital reinforcement for small and medium-sized enterprises in Poland, part 1: Identification of capital flows*, "Ekonomika i Organizacja Przedsiębiorstw" 1998, No. 7/582, p. 17-19.
12. **D. Tłoczynski**, *Capital reinforcement for small and medium-sized enterprises in Poland, part 2*, "Ekonomika i Organizacja Przedsiębiorstw" 1998, No. 8/583, p. 19-22.

I presented my academic achievements at conferences organized by educational institutions in the country and abroad:

1. University of Warsaw: 8th Academic Conference of Young Economists "The unification of the European economies: opportunities and threats", Dymaczewo, Poznań, 22nd-24th September 2003.
2. University of Westminster: Regional Air Transportation Challenges and Opportunities (London 2002, 2003), Marketing and Market Research: Thy Way Forward for Air Transportation (London 2000).

In addition, I participated in the following domestic and foreign research projects:

1. The team Grant State Committee for Scientific Research No H02D 00317 "*Modelling the organization and functioning of regional airports in Poland in the open sky policy*" Warsaw - Sopot 2003-2006.
2. The international research project Leonardo da Vinci, No. M01/69/k/D354, Sopot 2003.
3. The individual Grant BW 3210-5-0043-3 "*Strategies in Polish airports*", University of Gdansk, Sopot 2003.

4. The individual Grant BW 3210-5-0148-2 "*Marketing strategies at airports in market conditions*", University of Gdańsk, Sopot 2002.
5. The individual Grant BW 3210-5-0355-0 to finance the trip of young employees to a conference abroad Marketing and Market Research: The Way Forward for Air Transportation. University of Westminster, London, 6th-8th December 2000.
6. The team Grant State Committee for Scientific Research No H02D 00317 "*Marketing management in the transport market in 1999-2002*".

In 2001 I received the Group Award of the Rector of the University of Gdańsk of the first degree for academic achievement for the book "Marketing on the market for air service" (Publishing University of Gdańsk, Gdańsk 2001).

The summary of this stage of academic development was a doctoral dissertation "The marketing strategies of Polish airports" written under the guidance of prof. Andrzej Ruciński. The starting point for the discussion was the changing environment of micro- and macro-economics, and above all the prospect of "open sky". The liberalization of the market forced the airports the need to use different marketing activities aimed at carriers, passengers using the services of air carriers and other entities operating in the area around airports. For this purpose I initiated the research on the current state of marketing at Polish airports and I wanted to find irregularities in this area, so I conducted marketing research at Polish regional airports. The airport in Kraków refused to participate in the study. The method used for the implementation of the research was a personal interview that I conducted with the presidents of the airports. The analysis of the results of research made it possible to put forward concrete proposals for corrective measures and filling the gap between actual and desired state. This allowed to put forward actual proposals for corrective activities and filling the gap between actual and desired situation. The main objective of this dissertation was to create a marketing strategy for the Polish airports. Moreover I formulated specific objectives involving the methodological development of marketing strategy in the face of open sky policy, and I pointed to the selected instruments needed to achieve the objectives of marketing of the aviation enterprise and the practical purpose basing on the ability to use in practice the marketing strategies in Polish airports. The doctoral thesis was defended at the Faculty of Economics of the University of Gdańsk on 30th September 2004.

## 2. Areas and directions of research

My interests regarding research are concentrated within economics and transport, faculty: the economy of transport. They relate to the operation of air transport services market and the changes taking place on this market. Academic achievements may be divided into three groups, according to the criterion of the most important research issues, including:

- the issues connected with the changes taking place on the market for air transport, with particular emphasis on processes to adapt to EU requirements, and then the effects of the introduction of open sky policy,
- the issues of functioning and development of aviation infrastructure, taking into account the relationship between the development of airports and the development of regions, including use of the potential and opportunities for companies operating in the area linked with airports,



- the issues taking into consideration the competition on the market for air transport services and marketing policy of air transport enterprises.

### 3. Achievements after obtaining a doctor's degree according to the areas and directions of research

After obtaining a doctor's degree of economic sciences I continued academic work on topics related to the operation of air transport services market. The first group of the study are changes taking place in the market for air transport. The result of these studies is 41 publications. In a special way I included the processes to adapt to EU requirements. They were included in the monograph ***Airports to open sky policy***, Edited by A. Ruciński. Foundation for Development of the University of Gdańsk, Gdańsk 2006, p. 1-262, ISBN 83-89786-75-3, share 38% (co-author: D. Kaliński, G. Kowalczyk, P. Litkiewicz, D. Rucińska, A. Rucinski)<sup>1</sup>. This publication was created as a result of research conducted within Grant State Committee for Scientific Research No. H02D 00317 "Modelling the organization and functioning of regional airports in Poland against the policy of open skies" in 2003-2006 (project manager: prof. Andrzej Ruciński), in which I participated as a member of the research team.

In next years, I examined the impact of the "open sky" policy on the functioning of the Polish market. The most important achievements include these publications: ***The impact of open skies policy on the functioning of regional airports in Poland***, [in:] *Liberalisation and deregulation of transport in the European Union. Expectations and experience*, Edited by B. Liberadzki. Logistics and Warehousing Institute, Warsaw-Poznań 2007, p. 627-634, ISBN 83-87344-72-9; ***Benefits of Polish integration with the European Union for air transport***, [in:] *Selected problems of European integration*, Edited by A. Stępnia, S. Umiński and A. Zabłocka, Development Foundation of the University of Gdańsk, Sopot 2009, p. 391-400, ISBN 978-83-7531-018-4.

The consequence of integration processes are EU funds available, among others, in the air transport sector. I accomplished the analysis of the availability of EU funds for air transport companies in the following publications: ***Opportunities for development of airports in the light of the EU financial perspective for 2007-2013***, [in:] *Translog 2007. The chances of development of transport in the light of the EU financial perspective for 2007-2013*, Edited by E. Załoga, Polish Economic Society, Szczecin 2007, p. 287-293, ISBN 83-87249-85-8; ***Shaping the availability of air transport on the basis of EU funds***, [in:] *Integrated public transport in service of cities and regions*, Publishing of the Institute for Sustainable Technologies - PIB, Radom 2013, p. 233- 242, ISBN 978-83-7789-236-7 and ***Development policy of Warsaw Chopin Airport in the light of the European Funds for 2014-2020***, „Procedia Engineering”, London 2016, ISSN: 1877-7058 The article was taken to print <sup>2</sup>.

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<sup>1</sup> The discussed issues were presented in Chapter 1. Basic problems of functioning and development of the market for air transport services (1.1. Introduction to the issues, share 50% (co-author: D. Rucińska) 1.3. Demand and supply of air services, share 50% (co-author A. Ruciński) 1.4. Economic relations on air transport services market, share 50% (co-author A. Ruciński) Chapter 2. Open sky policy as a basis for the functioning and development of airports in the European Union (2.1. Policy of liberalization and deregulation of air transport services, share 50% (co-author: D. Rucińska)); Chapter 7. Implementation of the policy of open skies at Polish airports (7.1. Liberalisation of the Polish air transport services market, share 50% (co-author: D. Rucińska) 7.2. Liberalisation and the functioning of Polish airports share 100%; 7.4. Modeling the organization and functioning of Polish airports – applications, 50% (co-author: A. Ruciński)).

<sup>2</sup> Publisher: Elsevier.

I also evaluated the effects of the introduction of open market policy. I analyzed them on different levels. The result of the research are the articles devoted to the problems of low-cost carriers: **The development of low-cost airlines on the air services market**, "Spedycja Transport Logistyka" 2006, No. 3, p. 55-57, ISSN 1640-7903, **Low-cost carriers on the Polish market for air services**, [in:] *Scientific Papers of the Higher School of Administration in Gdańsk*, No. 6, Publishing Higher School of Administration in Gdańsk, Gdańsk 2008, p. 251-268, ISSN 1896-2505 and **Low cost carriers on the Polish market for air services**, [in:] *Problems of the functioning of the European transport and transportation market in the 21st century*, Edited by D. Rucińska, Scientific Papers of the University of Gdańsk, Economics of Transport and Logistics, No. 44, Publishing University of Gdańsk, Gdańsk 2013, p. 79-92, ISSN 0208-4821.

One of the effects of Polish integration with the European Union was the co-organization of UEFA European Championship Euro 2012. In my study I showed trends of development and benefits for the air transport as a result of the organization of major sporting events. The most important publications I point out: **Challenges for Polish airports in the context of Euro 2012 as an instrument of the sustainable development strategy**, "Przegląd Komunikacyjny" 2010, No. 3, p. 12-15, ISSN 0033-22-32; **Euro 2012 as a factor supporting the local air market**, [in:] *Safety and reliability in aviation. The development of aviation in the regions*, Publishing of the Institute for Sustainable Technologies - PIB, Radom 2013, p. 288-305, ISBN 978-83-7789-220-6.

I also made the analysis of the functioning of the global air transport services market, pointing to major changes related to the management of airspace and directions of development of air transport. The most important items include: **The global air transport market in 2012. The analysis of selected issues, trends**, [in:] *Problems of functioning of the European transport and transportation market in the 21st century in the research work of the Department of Transportation Market*, Edited by D. Rucińska, Scientific Papers of the University of Gdańsk, Economics of Transport and Logistics No. 48, Publishing University of Gdańsk, Gdańsk 2013, p. 25-44, ISSN 0208-4821; **The functioning of air carriers in the face of crisis**, "Logistyka" 2012, No. 2, p. 280-286, ISSN 1231-5478; **Sesar Programme and the European Air Space Management**, [w:] *Contemporary Transportation Systems. Selected Theoretical and Practical Problems, The Development of Transportation Systems*, Edited by R. Janecki, G. Sierpinski, Publishing Silesian University of Technology, Gliwice 2010, p. 235-240, ISBN 978-93-7335-672-6; **Mobility management in Poland's air transport industry**, „International Journal of Management Cases” 2016, No. 1, ISSN 1741-6264, - the article was taken to print<sup>3</sup>; **Forms and methods of cooperation of air carriers**, [in:] *The European Transport and Transport Services Market*, Edited by D. Rucińska, Scientific Papers of the University of Gdańsk, Economics of Transport and Logistics, No. 52, Publishing University of Gdańsk, Gdańsk 2014, p. 31-46, ISSN 0208-4821.

The result of research on the changes taking place in Poland was the analysis of the aviation market. From 2012 I am the author of the Aviation Report published in the "Wiadomości Turystyczne". However, in the publications: **The Polish market of transport services. Functioning, transformation, development**, Edited by D. Rucińska. PWE, Warszawa 2012,

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<sup>3</sup> Publisher: Access Press UK.

p. 1- 333, ISBN 978-83-208-1998-4<sup>4</sup> and *Air transport. Economics and organization*, Publishing University of Gdańsk, Gdańsk 2012, p. 1-302, ISBN 978-83-7865-018-8<sup>5</sup> I assessed the changes taking place in the Polish air transport. In 2015 I made the changes and updated the issue of developments in the market for air transport services which result in the publication Grant State Committee for Scientific Research No. N 112 125636 "Monitoring the transition, operation and development of the Polish market of transport services" in 2009-2011 - ***Air transport market***, [in:] *Transport services market in Poland. Theory and Practice*, Edited by D. Rucińska. PWE, Warsaw 2015, ISBN 978-83-208-2201-4<sup>6</sup>. However, in the publication: Benefits of Polish accession to the European Union for air transportation, "Aeroengineering and Aerospace Engineering" 2015 Vol. 9, No. 2, p. 511-516, ISSN 1307-6892<sup>7</sup> I pointed to the benefits of 10 years of functioning of the Polish liberalized market.

As a result of the changes taking place in the market for air transport it was necessary to monitor the conditions regarding aviation entities. For this purpose, as a second base for research I accepted the analysis of air transport infrastructure and any relationship between the development of airports and the development of the regions. I pointed to the use of the potential and opportunities for companies operating in the zone around airports and ways to increase the area of impact of the airports. For the purposes of this research I did 46 scientific publications.

One of the problems with the research carried out Grant State Committee for Scientific Research No. H02D 00317 "Modelling the organization and functioning of regional airports in Poland against the policy of open skies" in 2003-2006 (project manager: prof. Andrzej Ruciński) was the analysis of functioning and development of aviation infrastructure. The results of the research I presented in selected parts of the monograph ***Airports to open sky policy***, Edited by A. Ruciński, Foundation for Development of the University of Gdańsk, Gdańsk 2006, p. 1-262, ISBN 83-89786-75-3, (co-author: D. Kaliński, G. Kowalczyk, P. Litkiewicz, D. Rucińska, A. Ruciński)<sup>8</sup>.

The issue of functioning of airports was continued in subsequent research works and as a result there were next works, including: ***Air transport. Economics and organization***, Publishing University of Gdańsk, Gdańsk 2012, p. 1-302, ISBN 978-83-7865-018-8<sup>9</sup>; ***Revitalization***

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<sup>4</sup> The discussed issues were presented in Chapter 9. The market for air transport (9.2. Problems of functioning of the market, share 50% (co-author: A. Ruciński); 9.3. Changes on the market, 100%; 9.4. Trends and developments on the market, share 50% (co-author: A. Ruciński)).

<sup>5</sup> The discussed issues were presented in Chapter The discussed issues of research were presented in Chapter 1. Transport as a sphere of functioning (1.1. Basic concepts and general conditions of the industry - share 50% (co-author: D. Rucińska) 1.2. Outline of the development - share 100%); Chapter 2. The means of air transport (2.1. Traffic aircraft - share 100%); Chapter 3. The market for air services (3.1. General characteristics and functioning – share 33% (co-author: D. Rucińska and A. Ruciński) Chapter 8. Transport policy and air transport (8.1. The 'open sky' policy – share 100%; 8.2. Policy of the development of infrastructure - share 100%; 8.3. Selected problems of management of European airspace - share 100%; 8.4. Prospects for the development of industry and the market - share 50% (co-author: D. Rucińska)).

<sup>6</sup> Chapter 9. The market for air transport - share 66% (9.2. Problems of the functioning of the market - share 50% (co-author A. Ruciński) 9.3. Changes on the market - share 100%; 9.4. Trends and directions of development of the market - share 50% (co-author: A. Ruciński)).

<sup>7</sup> Publisher: World Academy of Science, Engineering and Technology.

<sup>8</sup> Chapter 4. The research of particular regional airports in the EU - share 100%; Chapter 5. Polish airports - branch infrastructure facilities (5.1. Elements and functions of aviation infrastructure - share 25% (co-author: A. Ruciński, D. Rucińska, D. Kaliński) 5.3. Characteristics of selected Polish airports - share 50% (co-author: D. Rucińska)).

<sup>9</sup> Chapter 4. Air transport enterprises (4.1. The airline companies as business entities - 100% share, 4.2. Traditional and low-cost carriers - 100% share, 4.3. Airports - share 50% (co-author A. Ruciński) 4.4. Handling agent - share 100%; 4.5. Air traffic management - share 100%).

**of the Szczytno-Szymany Airport as part of implementing the concept of sustainable development**, [in:] *Economy and society in the European perspective. Sustainable development of the region of Warmia and Mazury*, Edited by D. Rucińska, H. Horbaczewski, University of Humanities and Economics in Elbląg, Elbląg 2009, p. 99-106, ISBN 978-83-89113-37-5; **The possibilities of development of regional air transport in the Silesian Agglomeration on the example of the airport in Gliwice**, [in:] *The European area of transport, infrastructure and means of transport*, Edited by E. Załoga, Scientific Papers of the University of Szczecin No. 743, Problems of Transport and Logistics, No. 20, Publishing University of Szczecin, Szczecin 2012, p. 187-200, ISSN 1640-6818, ISSN 1896-382X; **Prospects for the development of aviation infrastructure in Pomerania. Airport Gdynia**, "Logistyka" 2012, No. 3, p. 2293-2302, ISSN 1231-5478; **Prospects for the development of the airport in Bydgoszcz against forecasts of the global air transport market**, [in:] *Scientific Papers of the University of Economy in Bydgoszcz. Economics No. 3*, University of WSG Economy, Bydgoszcz 2012, p. 151-161, ISSN 1733-8891.

Publications related to the impact of airports on regional development and the functioning of the Tri-City airports are the result of research conducted within Grant State Committee for Scientific Research No. N 114 1136536 "The strategy of building and development of the Pomeranian Airport Hub" in 2009-2010 (project leader: professor Andrzej Ruciński). However, as a result of cooperation with the local government I prepared a study on behalf of the City of Gliwice on the possibility of functioning and development of the airport in Gliwice. The result of this cooperation is the article: **The possibilities of development of regional air transport in the Silesian Agglomeration ...**

In analyzing the issue of the functioning of airports in a liberalized market, I was the author of publications devoted to the cooperation of airports with the environment, e.g. the functioning of the entities in the area around airports: **Handling Service Process in the Development of Passenger Mobility in Air Transport**, [in:] *Contemporation Systems. Selected Theoretical and Practical Problems. New Mobility Culture*, Edited by R. Janecki i G. Sierpiński, Monograph, Publishing Silesian University of Technology, Gliwice 2011, p. 103-112, ISBN 978-83-7335-830-0 and cooperation between airports and the region: **The main areas of cooperation between a regional airport and the region on the example of Gdańsk Airport**, [in:] *Integrated public transport in service of cities and regions, PublicTrans 2012*, Association of Engineers and Technicians of Poland, Radom 2012, p. 96-109, ISBN 978-83-7789-139-1; **Analysis of the effectiveness of regional aviation market based on the Pomeranian Voivodeship**, "Logistyka" 2014, No. 4, p. 3343-3358, ISSN 1231-5478; **The role of cities and regions in the development of Polish airports in the Baltic Sea region**, [in:] *Economic and organizational instruments to support the local and regional development*, Edited by B. Filipiak, Scientific Papers of the University of Szczecin No. 530, Finance, accounting, entrepreneurship, Volume 1, Publishing University of Szczecin, Szczecin 2009, p. 422-431, ISSN 1640-6818.

In the area of research on aviation infrastructure I also carried out research on the pricing policies of the airports. The most important research classify: **Non-aviation factors shaping competitive position of airports – Gdańsk Airport case study**, [in:] *Transbaltica 2013*, Vilnius Gediminas Technical University, Vilnius 2013, p. 235-240, ISSN 2029-2376, ISSN 2029-2384; **The financial statements as a source of information in the process of management of Polish airports**, [in:] *Directions of development of modern transport systems in the conditions of market globalization*, Edited by J. Hawlena, Institute of Scientific Publishing "Spatium" Radom-Katowice



2011, p. 33- 44, ISBN 978-83-62805-00-6; **The economic monitoring as a tool for the development of Polish airports**, "Logistyka" 2010, No. 2, p. 1325-1333, ISSN 1231-5478.

The summary of studies on the operation of air transport infrastructure were research on the possibilities of development of the impact area of airports. The most important publications include: **The analysis of transport accessibility in airports as the part of competitiveness in regions. Case study of Polish airports**, [in:] *Pomorstvo promet in logistika: zbornik referatov – Maritime, transport and logistic science: conference proceedings*, 17. Mednarodno posvetovanje o prometni znanosti, Slovenija, Edited by M. Zanne, P. Bajec, P. Vidan, Portorož: Fakulteta za pomorstvo in promet, Slovenija 2015, p. 507-514, ISBN 978-961-6044-9812015; **Assessment of functioning of the airport links system in the light of the conducted studies**, [in:] *Integrated public transport in service of cities and regions. PublicTrans 2015*, Publishing of the Institute for Sustainable Technologies, Radom 2015, p. 129-139, ISBN 978-83-7789-384-5; **Transport availability of an airports in Gdansk and in Szczecin as the development factor of Polish regions**, [in:] *Morskaja industrial, transport i logistyka w stranach regiona baltijskowo moria. Federalnoje agentstwo po rybołowstwa*, Edited by H. A. Kostrikowa, Balityjska Akademia Rybnaja Flota, Kaliningrad 2010, p. 189-193, ISBN 978-5-7481-0179-0; **Impact of Urban transport systems on the attractiveness of Polish airports**, [in:] *Transbalitica 2011*, Edited by D. Bazaras. Vilnius Gediminas Technical University, Vilnius 2011, s. 226-231, ISBN 978-9955-28-840-4, ISSN 2029-2376, e-ISSN 2029-2384 - share 50% (co-author K. Hebel.); **Complementarity and substitution in rail and air passenger transport**, [in:] *The integration processes of selected transport systems*, Edited by M. Michałowska, Publishing University of Economics, Katowice 2007, p. 261-270, ISBN 978-83-7246-2, share 50% (co-author: M. Wołek).

The third part of my research is the continuation and extension of earlier herein. As a result of the concept of development of air transport I analyzed the issue of competition on the market for air transport services and marketing policy of air transport enterprises. It was contained in 41 studies. The most important publications that discuss competition issues include: **The role of the state in shaping competition in the Polish air transport market**, [in:] *Problems of economics, economic policy and public finances*, Edited by J. Sokołowski, G. Węgrzyn, M. Rękas, Scientific Papers of the University of Economics in Wrocław No. 401, Publishing University of Economics, Wrocław 2015, p. 525-534, ISSN 1899-3192; **Competition in Handling Passenger Traffic in the Baltic Sea Region**, [in:] *Maritime Logistics-Competitiveness Versus Sustainability*, Edited by W. Gronau, R. Miler, B. Pac, Studies on Mobility and Transport Research vol. 5, MetaGIS-Systems, Mannheim 2015, p. 27-43, ISBN 978-3-936438-74-1; **The intensity of competition in the air transport market**, [in:] *Logistics in the era of sustainable development*, Edited by J. Mikołajczak, University of Bydgoszcz, Bydgoszcz 2012, p. 321-330, ISBN 978-83-923256-9-7; **Competition Between Airports in Crakow and Katowice as an element of Development of Regions** [w:] *Scientific Papers Oeconomica Posnaniensia*, University of Economy in Poznań, Poznań 2016, ISSN 2300-5254 i e-ISSN 2449-9099 – the publication was taken to print.

The third research area also includes publications related to the marketing policy and the factors shaping the competitiveness of air transport. The most important of these is a part of the monograph **Airports to open sky policy**, Edited by A. Ruciński. Foundation for Development of the University of Gdańsk, Gdańsk 2006, s. 1-262, ISBN 83-89786-75-3 (co-auctor: D. Kaliński, G. Kowalczyk, P. Litkiewicz, D. Rucińska, A. Ruciński) associated with marketing issues, which



arose as a result of the aforementioned State Committee for Scientific Research grant<sup>10</sup>. **Transport Behavior of Passengers from Small Regional Airports in Poland**, [in:] *Air passenger Service in the Wake of New Information Technologies. Challenges and New Standards*, Publishing Vistula University Group, Warsaw 2016 - the article was taken to print; **Analysis of the needs and demands of transport of passengers using air transport in Poland**, "Logistyka" 2015, No. 3, p. 5468-5476, ISSN 1231-5478; **Research of loyalty of passengers on the air transport market in Poland**, [in:] *The European Transport and Transport Services Market*, Edited by D. Rucińska, *Scientific Papers of the University of Gdańsk, Economics of Transport and Logistics*, No. 57, Publishing University of Gdansk, Gdańsk 2015, p. 45-64, ISSN 0208-4821; **Loyalty programs as a tool to shape the image of the company on the example of Lufthansa AG airline**, "Logistyka", 2014, No. 3, p. 6335-6344, ISSN 1231-5478; **Selected factors affecting revenue on the passenger air transport market**, [in:] *Costs and transport prices. Pragmatic aspects of*, Edited by E. Załoga, *Scientific Papers University of Szczecin*, No. 814, *Problems of Transport and Logistics*, No. 26, Publishing University of Szczecin, Szczecin 2014, p. 171-184, ISSN1640-6818, ISSN 1644-275X; **The process of shaping the image of the airline on the example of Aeroflot**, [in:] *Innovations in marketing 5.0*, Edited by T. Czuba, M. Reysowski, M. Skurczyński, Gdańsk University, Institute of Foreign Trade, Marketing Department, Development Foundation of the University of Gdansk, Gdańsk 2009 , p. 261-272, ISBN 978-83-7531-108-2 **Implementation of partnership marketing in regional airports**, [in:] *Transbaltica 2009*, Vilnius Gediminas Technical University, Vilnius 2009, p. 226-231, ISSN 2029-2376, ISSN 2029-2384; **Qualitative factors of achieving competitive advantage in air transport**, [in:] *The competitiveness of companies-mezoeconomical aspect*, Edited by M. Juchniewicz, Publishing University of Warmia and Mazury, Olsztyn 2009, p. 135-140, ISBN 978-83-89112-79- 8.

In the light of the studies I conclude that as a result of subsequent changes on the market, it is necessary to undertake further research on the development of the following research problems in the field of:

- directions of development of air transport;
- the economic analysis of the functioning of aviation operators;
- the analysis of the cooperation of air entities with the surroundings;
- monitoring the changes with the use of the tools of competition;
- developing a strategy for the air transport sector in Poland.

I also published six papers that do not belong to the main areas of research. Articles are an extension of my scientific interest. The most significant are as a result of the section on the theoretical aspects of the functioning of the market and marketing strategies, they were the result of Grant State Committee for Scientific Research No. N 112 125636 "Monitoring the transition, operation and development of the Polish market of transport services" in 2009-2011 (project leader: professor Danuta Rucińska). The results of research on the theoretical part of the market problems are subchapters: **Processes of negotiation and competitive; The choice and applications of the strategy**, published in the monograph *The Polish market of transport*

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<sup>10</sup> Chapter 6. Market basics of functioning and development of airports on the liberalized market (6.4. The marketing strategies as a tool to shape air transport services market - share 50% (co-author: D. Rucińska) 6.5. The analysis of marketing research conducted at regional airports - share 100% 6.6. Marketing strategies as the basis for the functioning and development of regional airports in Poland - share 50% (co-author: D. Rucińska)).

*services. Functioning, transformation, development*, Edited by D. Rucińska. PWE, Warszawa 2012, ISBN 978-83-208-1998-4. In 2015 I updated the issues included in the publication.

#### 4. Research projects

##### 1. Projects and international expertise

Additional role in my academic achievements play project works and grants realized for national and international institutions.

In 2012 I was a member of the research team implementing the project Case Simulator within Priority No. 6 - The labor market. The project was conducted in cooperation with the Regional Chamber of Commerce of Pomerania and the Hochschule für Technik und Wirtschaft from Dresden. In this project I was co-responsible for the preparation of input algorithms to simulate business areas: marketing, sales, management, micro-environment and preparing guidelines for case studies. The project was initiated and led by the staff of the Faculty of Economics of the University of Gdańsk.

In 2010-2013 I participated in the implementation of the international research project called Trolley in the European Commission's project "Interreg Central Europe" under the European Regional Development Fund. The aim of the project was to promote mobility in line with the strategy of sustainable development basing on the trolleybus transport. The result of the project is the improvement of the image of trolleybuses in the opinion of city residents. In this project I was responsible for the organization of an international academic symposium dedicated to the marketing and shaping the image of the trolleybus transport. The symposium was held in June 2011 in Lviv, Ukraine. In addition, I participated in the work related to the implementation of tasks in packages No. 2 and 5 (Communication, Knowledge Management & Dissemination and Improving Image and Patronage).

In 2010 at the request of the European Commission I developed the analysis of the benefits resulting from the operation of the A4 motorway: Construction of the KA4E Section of the Motorway Between Kleszczow-Sosnica, ISPA/2000/PL/16/P/PT/001, the co-author of studies was P. Borkowski - share 50%. The main objective of the project was to identify the most important segments of the market and then identify potential opportunities to develop these areas.

In 2010 I wrote the work "Key multimodal connections within the EU and outside the EU (under the SoNorA project)" on behalf of a consortium representing the Polish partners in the international project SoNorA. The main idea of the project was to improve the availability of multi-modal transport on the axis of South - North in the area of Central Europe. The main objective of the publication was an indication of the direction of the impact of freight within the corridor linking Scandinavian countries with the countries on the south of Europe, with particular emphasis on multimodal transport and the impact on the economy of the western part of Poland. In addition, the study identified the potential opportunities and threats arising from the operation of the corridor SoNorA for the development of transport infrastructure.



## 2. National projects

As part of State Committee for Scientific Research projects implemented in the native Department of Transportation Market I took part as a member of the research team and as a secretary in the following grants:

Grant State Committee for Scientific Research No. N 112 125636 "Monitoring the transition, operation and development of the Polish market of transport services" in 2009-2011 - a member and a secretary of the research team (project manager: prof. Danuta Rucińska). The main objective of the project was to give the diagnosis of the Polish transport market and to determine directions of development of this market, as well as selected market segments. As part of the grant we studied the directions of development of transport and their impact on the functioning of the branch infrastructure, we defined transport policy and determined the factors of development of the market of transport services in Poland. We also proposed directions of development of selected segments of the transport market in Poland. The model of proposed solutions serves the appropriate development of the transport market and, above all, adjusts the transport companies to compete on the European market. My participation in the grant was 10% and the co-authors of the project were: J. Burnewicz, D. Rucińska, A. Rucinski, S. Szwankowski, O. Wyszomirski, K. Wojewódzka-Król, K. Hebel, S. Miecznikowski, M. Wołek, P. Gałka, K. Grzelec and H. Kołodziejki. The project was completed by preparation of the book "The Polish market of transport services. Functioning, transformation, development" (PWE, Warsaw 2012) in which I created five sub-units: *The negotiating and competitive processes; Selection and applications of the strategies; Problems of the functioning of the market* (co-author A. Ruciński); *Changes in the market, Trends and market development* (co-author A. Ruciński). In 2013 that publication was awarded by the Rector of the University of Gdańsk by the first degree reward for the team monograph. The second expanded and updated edition of this book was issued by the PWE in 2015. In this study I updated and expanded the issue of the functioning of the air transport market.

Grant State Committee for Scientific Research No. N 114 1136536 "*The strategy of building and development of the Pomeranian Airport Hub*" in 2009-2010 - a member and a secretary of the research team (project manager: prof. Andrzej Ruciński). The main research tasks related to the diagnosis of the condition of air transport in Pomerania, air transport development strategy in Pomerania, strategy of construction and operation of the Pomeranian Airport Hub. We pointed out ways of dealing with aviation infrastructure in Pomerania. In particular, we highlighted the role of Pomeranian Air Hub in the development of air transport and we pointed to the influence of a node on the development of the region. As part of the research the study was established for the Ministry of Science and Higher Education and the mayors of Gdańsk, Sopot and Gdynia, and also for Marshal of Pomeranian province and airport managers in the Tri-city. My participation in the grant was 5% and the co-authors of the project were: D. Rucińska, A. Ruciński and P. Gałka. For the purposes of the grant I developed the part on investments by the Gdańsk Airport, Gdynia Airport and pointed to the benefits to the region arising from the operation of airport hub.

Grant State Committee for Scientific Research No. H02D 00317 "*Modelling the organization and functioning of regional airports in Poland against the policy of open skies*" in 2003-2006 – a member of the research team (project manager: prof. Andrzej Ruciński). The main objective of the project was to determine the readiness of regional airports to introduce open skies policy,

as air operators until 2003 did not prepare any programs concerning changes in the functioning under the new conditions. Thus, the primary goal was to develop models for the operation and development of ports in conditions of full liberalization of the market. For this purpose market research were conducted in selected ports of the European Union. I specified aerial and non-aerial factors affecting the development of regional airports. The result of the project were the models of functioning of regional airports taking into account the number of ports, their prioritization and financing of development. My participation in a research project was 10% and the co-authors were: A. Ruciński, D. Rucińska, D. Kaliński and M. Wolek. Basing on the studies we prepared a monograph edited by A. Ruciński "**Airports in the open sky policy**" (Foundation for the Development of the University of Gdańsk, Gdańsk 2006). For the purposes of that publication I prepared a chapter *Studies of some regional airports in the European Union* and my own chapters: *The analysis of marketing research conducted at regional airports* and *Liberalization and the functioning of Polish airports*, as well as sub-chapters co-authored with A. Ruciński: *Demand and supply of air services*; *Economic relations on the market for air transport*; *The elements and functions of aviation infrastructure*; *Modeling the organization and functioning of Polish airports - conclusions* and also co-authored with D. Rucińska: *Introduction to the problems*; *Policy of liberalization and deregulation of air transport services*; *The characteristics of selected Polish airport*; *The liberalization of the Polish market for air transport services*. In December of 2006 the monograph received the award from the Minister of Transport for the best book of transport, published in the academic year 2005/2006. In 2008 the Foundation for the Development of Gdańsk University resumed the publication.

As part of the research work of the Department of Transportation Market of the University of Gdańsk I took part in statutory grants in the following periods:

- 2013-2015 – *Research on functioning and changes on the transport markets, with particular emphasis on rail, air and urban markets,*
- 2010-2012 – *Research on the use of marketing management in transport,*
- 2007 – 2009 – *Marketing research of transport markets,*
- 2004 – 2006 – *Research on functioning and changes on the transport markets, related to the assessment of the impact of Polish accession to the EU on the functioning of the market.*

The research project on the functioning and transformations on transport markets is a continuation of earlier research conducted at the Department of Transportation Market that concern the functioning of transport markets, in particular the changes taking place on them after the Polish accession to the European Union. The ongoing process of liberalization and deregulation creates new opportunities for operators, provided that they have a marketing information system for collecting and processing data into information that contribute to achieving their long-term goals.

Marketing research play a special role in transport activity, providing a basis for the development of transport offer in terms of simultaneity of production and consumption. Marketing management is an essential instruments for implementing and monitoring changes on the transport markets, it creates a permanent basis for the efficient management of transport, creates the characteristics of its modernity, flexibility, innovation and adaptability. Marketing management in transport requires careful systematization of the basic forms of efficiency, leading to the achievement of competitive advantage in the dynamic, branch transport markets.



In 2008-2009 I participated in a research project carried out as part of the University of Gdansk called "Methods of financing, operation and development of regional passenger transport systems on the example of rail and air transport" (3210-5-0218-8). M. Wołek was a supervisor and a co-author (50%). The result of these studies was to determine the current state of rail and air infrastructure in selected regions of Poland. Basing on the established development plans we designed the concept of cooperation of the rail sector and aviation. We also pointed out the possibility of reducing intra-regional disparities by integrating regional rail and bus transport.

In 2007 I was the manager and co-author of the grant "Transport conditions of the development of Polish regions under the Regional Operational Programmes 2007-2013 with particular emphasis on rail and air transport" (3210-5-0432-7). The co-author was M. Wołek (50%). The result of the project was to determine the spatial, economic and social cohesion of Polish provinces with regard to the development of transport. We established occurring relations between the development of the region and the development of airports and desirable directions of regional development affecting the functioning of the airports.

### **3. Research projects and expertise on a national level, against order of entities and institutions of public administration**

In 2012 I was the author of the study "Transport Development Strategy in the Municipality of Cedry Wielkie" on behalf of the Municipality of Cedry Wielkie.

On behalf of the City of Gliwice in 2011 I developed the research project "The analysis of the economic and marketing of the airport planned for the expansion in Gliwice, developed under the project Via Regia Plus".

In 2011 I was the co-author of expertise "Transportation system management" on behalf of the Ministry of Infrastructure in the field of air transport system. The co-authors were: M. Wołek and E. Czermański, share 33.33%.

In 2009 I was the co-author of a feasibility study of the project "Construction of port infrastructure to service maritime ports along with road and railway access to the Gdynia Port" commissioned by the Port of Gdynia - share 50% (co-author: M. Warszakowski).

On behalf of the Port of Gdynia in 2007 I was the supervisor and the co-author of expertise on substantive assessment of the feasibility study "The construction of the logistics center in the Port of Gdynia" - share 25% (co-authors: A. Jezierski, J. Kuczevska, A. Mytlewski).

## **IV. Summary and list of figures of the educational achievements**

The results of my research were presented in books, academic articles and presentations at academic conferences at national and international levels, as well as in the project works and expertise. A summary of academic achievements I presented in Table 1.



Table 1. Summary table of scientific achievements

Kind of publication	Before obtaining the doctor's degree	Before obtaining the doctor's degree	Total
Publications on international compact			
Articles in collective publications and educational journals published in English	-	10	10
Chapters in books and academic articles in journals published in English in Poland	-	6	6
Publications on national compact			
Monographs, textbooks (including co-authorship)	2 (2)	2 (1)	4 (3)
Editor-reviewed of the academic collective works (including co-authorship)	-	1 (1)	1 (1)
Chapters in collective monographs in Polish (including co-authorship)	1 (1)	35 (5)	36 (6)
Articles in scientific journals	7	76 (4)	83
Other publications (abstracts and the messages, articles that were not proceeding)	1	5	6
<b>Publications in total (including co-authorship)</b>	<b>11 (3)</b>	<b>134</b>	<b>145</b>
Studies carried out in the framework of international research projects	1	4	5
Participation in research grants (including for Ministry of Science and Higher Education)	7 (2)	9 (3)	15 (4)*
Studies for public administration entities	-	5	5
<b>Total academic and research achievements</b>	<b>19</b>	<b>152</b>	<b>165*</b>

including 5 works taken to print in 2016

\* - Grant State Committee for Scientific Research No. H02D 00317 "Modelling the organization and functioning of regional airports in Poland against the policy of open skies" was in 2003-2006 (before and after doctorate).

The structure of my publications after obtaining the doctor's degree, grouped according to the most important issues is shown in Table 2

Table 2. Structure of the publications of research issues

The issue of research	Number of publications on the issue	Share in work in per cent (%)
The issue associated with the changes taking place on the market for air transport, with particular emphasis on processes to adapt to EU requirements and the impact of the introduction of open market policy	40	31,25
The issue of the functioning and development of aviation infrastructure, taking into account the relationship between the development of airports and the development of regions, including use of the potential and opportunities for companies operating in the area around airports	43	33,59
The issue of the functioning and development of aviation infrastructure, taking into account the relationship between the development of airports and the development of regions, including use of the potential and opportunities for companies operating in the area around airports	39	30,41
Other	6	4,75
<b>Total</b>	<b>128*</b>	<b>100</b>

\* Monographs: *Air transport. Economics and organization*, Publishing University of Gdańsk, Gdańsk 2012, p. 1-302, ISBN 978-83-7865-018-8, *Airports to open sky policy*, Edited by A. Ruciński. Foundation for Development of the University of Gdańsk, Gdańsk 2006, p. 1-262, ISBN 83-89786-75-3 was present three designated research areas; in monographs: *Transport services market in Poland. Theory and Practice*, Edited by D. Rucińska. PWE, Warsaw 2015, ISBN 978-83-208-2201-4 and *The Polish market of transport services. Functioning, transformation, development*, Edited by D. Rucińska. PWE, Warszawa 2012, ISBN 978-83-208-1998-4 two research issues.



My academic publications were issued by the following publishing companies on international compact:

- Vilnius Gediminas Technical University – 20.00% of the number of publications with an international range,
- Publishing Silesian University of Technology – 13.34%,
- Access Press UK – 6.67%,
- Baltyjska Akademia Rybnaja Flota – 6.67%,
- Elsevier – 6.67%
- MetaGIS-Systems – 6,67%,
- Międzynarodnyj Uniwersytet w Moskwie – 6.67%,
- Portoroż: Fakulteta za pomorstvo in promet – 6.67%,
- World Academy of Science, Engineering and Technology – 6.67%,
- other – 19.97%.

Publications on a national scale were most often issued by:

- Institute of Logistics and Warehousing – 19.46% of the number of publications nationwide,
- Development Foundation of the University of Gdansk - 7.96%,
- Publishing University of Gdańsk – 7.96%,
- Publishing University of Szczecin - 7.96%,
- Publishing Higher School of Administration in Gdańsk -7.08%
- Publishing University of Economics in Katowice – 7.08%,
- Polish Association of Engineers and Technicians of Transportation - 4.42%,
- Polish Professional Publishing Press – 4.42%,
- Publishing University of Humanities and Economics in Elbląg – 3.54%,
- Publishing Gdańsk Banking School – 3.54%,
- Institute of Science and Publishing "Spatium" - 3.54%,
- Eurosystem - 3.54%,
- Publishing Scientific Institute for Sustainable Technologies - National Research Institute - 2.65%,
- Publishing Silesian University of Technology - 2.65%,
- Publishing University of Economics in Wrocław – 2.65%,
- PWE – 1.77%,
- other – 19.76%.

Scientific papers were published, among others, in scientific notebooks and journals:

- Scientific Papers of the University of Szczecin No. 743, Problems of Transport and Logistics (8 p. in Ministry of Science and Higher Education list <sup>11</sup>),
- Scientific Papers of the Economics University in Katowice (7 p.),
- Scientific Papers of the University of Gdańsk (6 p.),
- Scientific Papers of the Economics University in Wrocław (7 p.),
- Scientific Papers of the Banking School in Gdańsk (5 p.),
- Scientific Papers of the Silesian University of Technology (4 p.),
- Logistyka (10 p.),
- Autobusy (4 p.).

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<sup>11</sup> Is valid from 23 December 2015.



My publications are indexed in databases:

- BazTech - number of publications: 41, number of citations: 19
- Google Scholar - number of publications: 52, number of citations: 15, Hirsh index: 2
- Publish or Perish - number of publications: 59, number of citations: 28, Hirsh Index: 3
- Web of Science Core Collection - Cited Reference Search - number of publications: 1, number of citations: 1 (1999.).

In the years 2004-2015 I received awards for my academic and research activities:

- for the monograph "The Polish market of transport services. Functioning-transformation-development ", the whole team of authors was awarded by the Rector of University of Gdańsk, first degree, Gdańsk 2012,
- for the publication "Urban transport. Economics and organization", the team of authors was awarded by the Rector of University of Gdańsk, the second degree, Gdańsk 2009,
- for the monograph "Airports to open sky policy", the team of authors which I was a member of received the award of the Minister for the best book of transport, published in the academic year 2005/06, Warsaw 2006.

In 2010 for the whole of research activity I was honored with the bronze medal for long service by the President of Poland, Warsaw.

  
11.01.2016