

**University doctoral (PhD) dissertation abstract**

**EXAMINATION OF SERVICE PROCESSES IN A  
REGIONAL AIRPORT AND THEIR ENVIRONMENT**

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# **1. RESEARCH BACKGROUND, OBJECTIVES AND INTRODUCTION OF HYPOTHESES**

I started to deal with process management when I attended on Scientific Student Conference, in particular by applying it to organizing events that can be considered the scientific antecedents of my doctoral research. The research topic of my dissertation is part of the process management / service management research group. It is a new research topic because we are currently do not have any information about any other process management examination at Debrecen Airport and about the examination of services used by visitors in the city. Apart from the size of air traffic in the airport of Debrecen, there was no other information on demand, so my primary research on this subject will certainly prove useful.

As globalization has become more and more developed, the demand for traffic and traffic speeds has increased, with aviation being a top priority, and has therefore become the most dynamically developing transport sector nowadays. Regional airports have macro and micro-level effects in a region's life. With increasing passenger traffic in airports, demand for employment and services is also increasing. A well-functioning airport provides the region quick and easy access and has a stimulating and stimulates investments. The impact of an airport can not only be examined from the point of view of revenue / expenditure or the number of employees because it is closely related to its operating environment and its development.

In my examination I approached the possible effects of the operation and development of Debrecen Airport from a different point of view. The new scheduled services of the airport launched in 2012 have appeared as a new service in the area. This new service leads to a change in the economic structure, and since information and testing were unavailable as to what effects of the new service were experienced, this structural change resulted in the appearance of so-called urban myths and stereotypes. On scientific level, these myths, such as the fact that the number of foreigners visiting the city and the tourist consumption of the city increased due to the Debrecen-London/Luton flight, have not been explored, so there has been no such example of such content and purpose. As I was first faced with the dilemma of starting such a complex investigation, I set out to develop a process-oriented service examination methodology.

Airport Debrecen served 150,000 people in 2014 and nearly 300,000 passenger traffic in 2016. The significance and importance of this topic is reflected in the fact that an airport can play an important role in the economic growth of a region. To increase the real income generated in the region, an airport is actively contributing to consumption generated by incoming tourists and business travelers

Research shows that there is a strong relationship between the quality of services and consumer intent (ZEITHAML et al., 1996; CRONIN et al., 2000)<sup>1</sup>. According to VERES et al. (2006)<sup>2</sup>, the 'nature' of an airport contributes heavily to the image of an area, as the related first impression of the city. In addition, high-quality service, accurate organization, attention, and the quality of the airport environment has a key role in returning a visitor to a particular destination, or recommending additional acquaintances.

One of the initial assumptions of the research is that the information available on air passengers is not sufficiently detailed and cannot be used in different economic development programs. The secondary assumption is that the process-based approach is suitable for describing and analyzing passenger needs. To prove this, further justifications are required. The general starting point was to determine what the passenger really needs who can be a tourist, a businessman, or a conference visitor, to feel good and spend time well. This simple assumption requires a very complex answer, as it has a great deal to have a positive impact on a passenger. Starting from airport services, for further travel to the hotel, through the kindness of the hotel receptionist, sightseeing organized by the tour guide or a cold banquet of delicious cold dishes served at a conference lunch break. I have faced the following assumptions

The complexity of the question requires complex examination and the primary dilemma was the approach to be applied. Can I gather useful and valued data when I study the most visited and best-known accommodation in the city, whether it is ISO certified, does it have quality management system, is it prepared to receive an increased number of foreign visitors?

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<sup>1</sup> ZEITHAML, V.A. – BERRY, L.L. – PARASURAMAN, A (1996): The behavioral consequences of service quality. *Journal of Marketing*, Vol. 60. No. 2, pp. 31-46

<sup>2</sup> VERES Z. – HOFFMAN M. – KOZÁK Á. (2006): *Bevezetés a piackutatásba*. Akadémia Kiadó, Budapest.

Nonetheless, I have chosen another approach that is based on seeing and understanding the expectations of the passenger, and this kind of approach can be looked at through processes that go beyond organizations. The structure of service providers and companies is constantly changing, and constants are only processes in this approach.

It was necessary to get in touch with foreign visitors in some way, which was a difficult task. The visitors involved in the survey did not only fill in the questionnaire, but I talked to each of them and they expressed their satisfaction or dissatisfaction in word of mouth. It is important to emphasize that the processes that make the passenger feel good are not at one organization, the success of processes can be described as a function of cooperation between organizations.

### **The most important objectives of the research**

As far as the composition of passenger traffic is concerned, data have not been collected in addition to nationality (KSH, Debrecen Airport). The operation of Ferihegy Airport generated more than 900 billion forints added value in 2015 and provided employment for 45 563 people. In the case of Airport Debrecen, an important factor in examining the concrete, similar and quantified effects of the airport is to know the segmentation of passengers and the services they use. Therefore, my research primarily aims to determine who and for what purpose arrive in the city, and what services they use during their stay in the city.

The aim of the research is not only to examine the service processes of Airport Debrecen, but to identify and investigate the services that a city can offer to visitors coming from abroad and how satisfied are the visitors with the quality of the used tourist services. At the same time, it should be mentioned that the airport is a key element in the research. In addition to the airport service processes, I have looked at visitors' satisfaction with pre-service, accommodation, meals, transportation, entertainment, conference attendance, sports activities and health services. Beside the satisfaction survey, I also set out to determine the tourist consumption of foreigners visiting Debrecen and to familiarize visitors with the main features (because of the fact that so far data has not yet been collected), I was looking for answers to the following research questions,

- What is the proportion of women and men surveyed in the sample?
- What is the distribution of the respondents according to their age?

- What is the distribution of the respondents according to their nationality?
- What is the distribution of the respondents according to their place of residence?
- What was the most common travel motivation for visitors to the city?
- Did the interviewees travel individually or did a travel agency organize their trip?
- • With whom did they arrive in the city with whom did the visitors travel?
- • How many times did visitors visit the city?
- • How many days did the surveyed visitors spend in the city?

Since no information was available to date about the characteristics of visitors to Debrecen from London, I therefore tried to maximally identify and examine all the characteristics of the population. Until now, it was impossible to know who they are on the plane for the purpose of arriving in the city, how long they stay, where they are staying. The only known information was that it was not a homogeneous group, so I tried to look at more categories, but only after the completion of the investigation did I find out whether they were useful or not and what the results could be for later used.

After that, my aim was to define the range of services used during the stay in the city and to get acquainted with the experienced satisfaction I wanted to answer the following research questions:

- •How many people did a certain service use?
- What is the distribution of the recipients of the service based on age, gender and travel motivation?
- How satisfied are the visitors with the specific indicators for each service, and how did the services they use meet their expectations?
- Is there a relationship between the gender of the respondents and the way they travel?
- Is there a relationship between the gender of the respondents and their travel motivation?
- Is this a link between the motivation of the respondents and the number of days spent in Debrecen?
- Is there a relationship between the motivation of the respondents and the type of used accommodation?

By answering the research questions above and the assumptions outlined above, I will confirm, accept or reject the following hypotheses:

H1: The negative effects of seasonal fluctuations in the passenger traffic of Airport Debrecen can be alleviated by the implementation of scheduled services and passenger traffic can be stabilized

H2: Without segmenting passengers, the increase in passenger traffic leads to misguided conclusions, the so-called urban myths.

H3: Thanks to London / Luton's flight to Debrecen, the number of tourists arriving in the city has increased.

H4: The ratio of foreign passengers arriving from London / Luton to Debrecen is higher compared to Hungarian passengers.

H5: The majority of foreign passengers arriving from London / Luton to Debrecen travel for the first time in the city.

H6: The decision of a flight from London / Luton to Debrecen to fly to Debrecen is affected by the good location of the city.

H7: Sightseeing is the most important tourist motivation for foreign visitors coming from London / Luton to Debrecen.

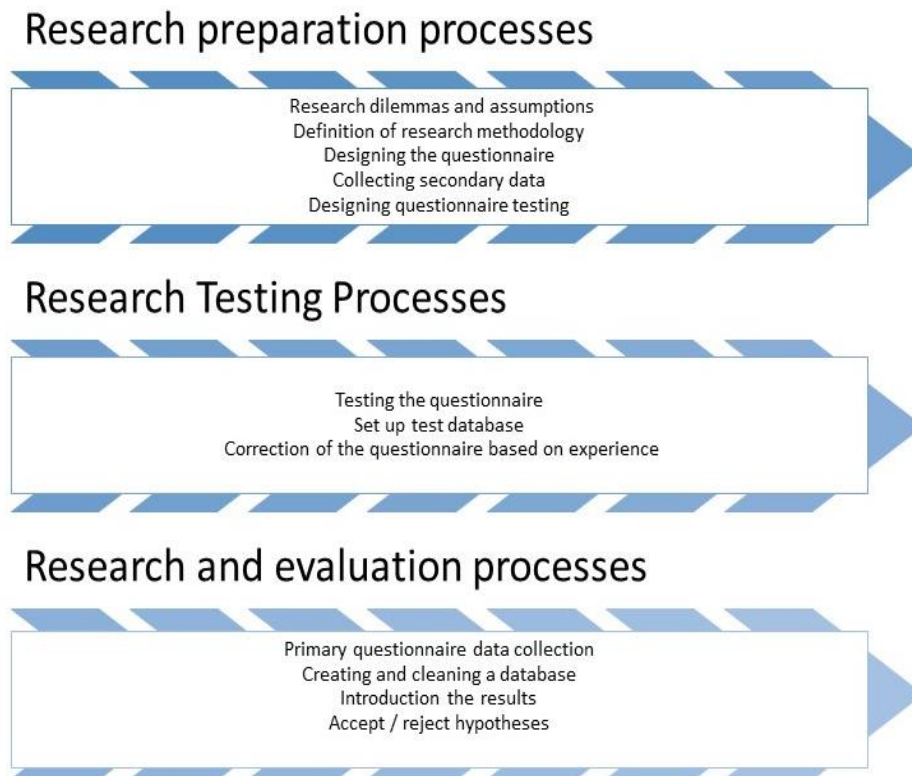
H8: The travel motivation of foreign passengers coming from London / Luton to Debrecen depends on their gender.

H9: The number of foreign visitors to London from London / Luton to Debrecen depends on several factors.

H10: Services used by foreign visitors arriving from London / Luton to Debrecen meet the visitors' expectations.

## 2. DATABASE AND APPLIED METHODS

My research can be divided into three main parts, as shown in Figure 1. Based on the order of the research processes and the content of the sub processes I present the prepared database and the methodology of the examinations.



**Figure 1. Structure of the research**

Source: Own edition, 2018

My research began with delineating dilemmas and assumptions. The primary dilemma was that there is a regional airport (Debrecen Airport) where we can see the development of passenger traffic. For an airport standardization is important, and for this purpose, the European Union's ambition is to define and introduce a single European flight rules that provide safe, efficient and fast international air traffic. However, the service of passengers and visitors includes what is being done by city and organizations and I have undertaken to measure and examine this research in order to design and apply a questionnaire that will help you to get acquainted with the services and information that visitors can access to these services the quality content and possible shortcomings.

It was necessary to get in touch with foreign visitors in some way, which was a difficult task. Investigations were preceded by planning and careful preparation of the questionnaire. The visitors involved in the survey did not only fill in the questionnaire, but I talked to each

of them and they expressed their satisfaction or dissatisfaction in word of mouth. I also consider a questionnaire prepared and used as a methodological result because I did not use a well-prepared and well-tested, well-researched questionnaire. In order to make the decisions to improve the quality of service more efficient, firstly, defining the dimensions of the given service and then setting up a dimension measurement, as well as defining the stakeholders of the service

I have not used the well-known SERVQUAL questionnaire for satisfaction, but on the given service quality dimensions, I defined the relevant dimensions and measurement indicators that are relevant to the research goal and despite the research constraints. When compiling the applied questionnaire, I took into consideration the optimized SERVQUAL model dimension and tried to narrow down the quality factors for satisfaction.

Questions of the questionnaire prepared for the research are characterized by open, closed, multiple possible answers and evaluation questions. The opinions of the respondents - their satisfaction - were examined with a 5 point Likert scale. The first part of the questionnaire contains questions about visitors. In terms of their character, they are aimed at segmentation of respondents to determine the gender and age composition, nationality, place of residence, frequency of travel, type of travel, and frequency of visits to Debrecen and duration of the city stay. This section also includes the motivation of travel.

The second part of the questionnaire contains an evaluation of the services used. The services are included in separate topics and the fillers will evaluate the services according to their needs. Altogether, I have allocated nine services, which are:

- Dimension of the pre-service services includes 3 indicators
- Airport Services Evaluation Dimension 7 Indicators
- Dimension of evaluation of transport services includes twice five indicators. Here I have examined the satisfaction with the transport services related to the city from the airport and the satisfaction with the urban transport services.
- The dimension of assessment of accommodation services includes 10 indicators.
- Dimension of evaluation of meals-related services includes four times nine indicators, since I wanted to get information on the satisfaction with four different places (restaurant, hotel restaurant, pastry shop, ice cream shop).



- Entertainment-related service evaluation includes 7 different locations and an 8-8 indicators.
- Evaluation of health care services 4 different cases (planned health care, unplanned health care, dental treatment) and 7-7 indicators.
- Evaluation of conference participation services includes 7 indicators.
- Dimension of evaluating sport-related services involves two scenarios: one is pursuing sports activities and the other is participating in a sports event. In both cases, 5-5 indicators were evaluated by the respondents.

These services form the nine dimensions of the questionnaire. According to HOFMEISTER et al. (2003) <sup>3</sup>, the dimension is a variable that can be described by several realistic measurable indicators. Each dimension has a defined number of indicators defining the quality of service - process - quality that the questionnaire filler can evaluate using a 5 - point Likert scale. For example, the dimension for assessing accommodation services includes indicators such as room facilities; staff proficiency, cleanliness of the room, kindness of staff etc.

. Since I did not have any prior information or a questionnaire survey on passenger satisfaction at Debrecen International Airport was not yet a case in advance, it is not certain that the defined service dimensions fully cover the services that passengers have used or may have missed. Therefore, at the end of each dimension of services, with the help of an open question, I gave the interviewees the opportunity to express their opinion and demand for the missing services. With this question I wanted to assess latent needs as well.

## **2.1. Research barriers, questionnaire testing and sample demonstration**

There was no data on the demographic composition of passengers. Therefore, I applied quota sampling during the testing period, where the aim of the testing was to get acquainted with the basic population. The questions and problems that arise during the research are related to the scope of the investigators, ie the definition of the sample and the sampling. There was no way to ask all foreign nationals traveling during the research because neither

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<sup>3</sup> HOFMEISTER TÓTH Á. – SIMON J. – SAJTOS L. (2003): Fogyasztói elégedettség. Alinea Kiadó, Budapest

the money nor the time available for the investigation nor the processing capacity would allow this.

In the definition of the sampling frame I limited the number of passengers included in the survey to the London-Debrecen route, where passport control allows the definition of nationality of passenger traffic based on quarterly CSB data.

The reasons for this are the following:

- The number of people surveyed is foreign nationals who spend a certain number of days in the city. According to this criterion, passenger traffic data excluded persons of Hungarian, Romanian, Ukrainian and Slovak citizens because they only crossed the city and reached the airport (transit) in the selected country, city
- When choosing a route / flight, information about the nationality composition was essential, as, for example, between flights between Debrecen and Eindhoven there is no data on the composition of passengers according to their nationality.

Limiting factor was that despite all the efforts, transit passengers were not completely excluded, as in many cases Debrecen was the target of a British national visitor, but this was only revealed during the processing and analysis of the questionnaires.

Periodic fluctuations in the number of passengers raised further questions in defining the sample. Although GILYÁN (2008) mentions as one of the experience and benefits of passenger traffic, there is less temporary effect than total passenger traffic. From the point of view of sampling, the fact that periodic fluctuations, even if to a small extent, but present in the field of air traffic, were not to be ignored. The number and composition of passengers per flight / day changes every day it is not constant.

An additional problem was the increasing number of passengers in the expansion of flight numbers, which is difficult to estimate in advance. One of the limitations of sampling is the scarcity of time available because the data collection is time-consuming. I had only 45 minutes daily to complete the data collection. Foreign passengers who arrived in the waiting area in the last 10-15 minutes after the security check, could no longer answer the questionnaire. In recognition of foreign visitors, the airport staff involved in check-in was helpful.

The research was complicated by the compliance with the safety regulations at the airport, the continued existence of a border crossing permit, which was based on the need to apply for a cross-border permit every month, to comply with international standards and to attend a security training at the airport.

In January 2014, I interviewed a small number of people in the form of test questionnaire. Given the criteria for determining the sampling frame, the sixteen flights to London / Luton, which took place in January, among the passengers of seven flights to complete the questionnaire. I was attracted to the test by twenty-three people. Of the 23 questionnaires, five were inconclusive and eighteen were evaluable.

Eighteen questionnaires were filled out and evaluated by 10 men and 8 women. Given the nationality distribution, 13 were UK citizens, 1 Irish, 2 Italian and 2 other Japanese nationals. In the questionnaire the question of "What nationality" UK citizens have provided more alternative answers than British (British), English, Black English, Great Britain (GB) and United Kingdom (UK) When processing the questionnaires, I treated the passengers in the same way as a British citizen. The question of Hungarian nationality and British citizenship was a matter of concern. Sometimes the selected visitor had a British passport and a Hungarian nationality. In January, there was an example for 2 people and they did not cooperate in filling in the questionnaire referring to their Hungarian nationality. Taking into account the motivation of travel, 7 persons selected private travel, 5 healthcare (dental services), 1 business trip and 5 students arrived in Debrecen for a while and spent some time in the city. Based on the number of days spent in the city, 5 people 1-2 nights, 5 persons 3-7 nights, and 8 persons spent more than 8 nights in the city. Visitors who came to the city for private travel, parents, friends, and family members from the University of Debrecen visited a friend. The services used are shown in Table 1

**Table 1: Services in January 2014**

	Used (person and %)		Did not use (person and %)	
Airport s. .	18	100 %	0	0
Transport s.	16	88,9 %	2	11,1 %
Accommodation s.	15	83,3 %	3	16,7 %
Meal s.	14	77,8 %	4	22,2 %
Entertainment	10	55,6 %	8	44,4 %
Healthcare s.	6	33,3 %	10	66,7 %
Conference	4	22,2 %	14	77,8 %
Sport	2	11,1 %	16	88,9 %

*Source: Own edition based on research results*

Airport services were utilized and evaluated by all passengers as it is inevitable to depart from the airport. Regarding transport services, 2 private vehicles were driven by a car owned by an acquaintance / friend. They did not use taxis, buses or trams. Visitors who did not require accommodation or meals in a friend, relative, arrived and dined in the city during their stay. At the time of the use of health services, planned dental treatment was introduced and, for a major case, the use of healthcare related to illness. Four people from the interviewed participated in the conference who came to the city for learning purposes. Sports activities were only requested by two people in January. Table 2 shows the results of compliance with the service requirement

**Table 2: Compliance with service expectations**

	It was better than expected	It was like expected	It was worse than expected
Airport s. .	6	10	2
Transport s.	5	9	2
Accommodation s.	6	5	4
Meal s.	5	4	5
Entertainment	4	5	1
Healthcare s.	3	0	3
Conference	2	2	0
Sport	2	2	2

*Source: Own edition based on research*

The table also shows that many times the service did not meet the visitor's expectations and service was worse than the expected. Accordingly, a detailed analysis of the services can be justified and the indication of which indicator caused the dissatisfaction of the visitors

Based on the results obtained, the questionnaire test was successful. In order to eliminate incorrect questionnaires, I made the necessary corrections about drafting errors and

completed the questionnaire with additional explanation on the filling. After the test period, data collection took place from February 2014 to the end of September. During the data collection, 63 London-Luton flights were conducted to survey questionnaires. Table 3 shows the characteristics of the questionnaires collected in each month.

**Table 3: Number and characteristics of questionnaires completed**

Examined Month	Number of examined flights	Filled questionnaires			Person did not fill	Rejected	Returnee person
		Total	Evaluated	Invalid			
February	9	52	47	5	28	3	2
March	8	34	30	4	30	4	4
April	8	50	45	5	32	3	6
May	8	42	38	4	25	2	4
June	6	32	30	2	29	2	3
July	8	43	40	3	32	5	5
August	8	35	34	1	29	4	4
September	8	38	35	3	34	4	4
<b>Total</b>	<b>63</b>	<b>326</b>	<b>299</b>	<b>27</b>	<b>239</b>	<b>27</b>	<b>32</b>

*Source: Own research result*

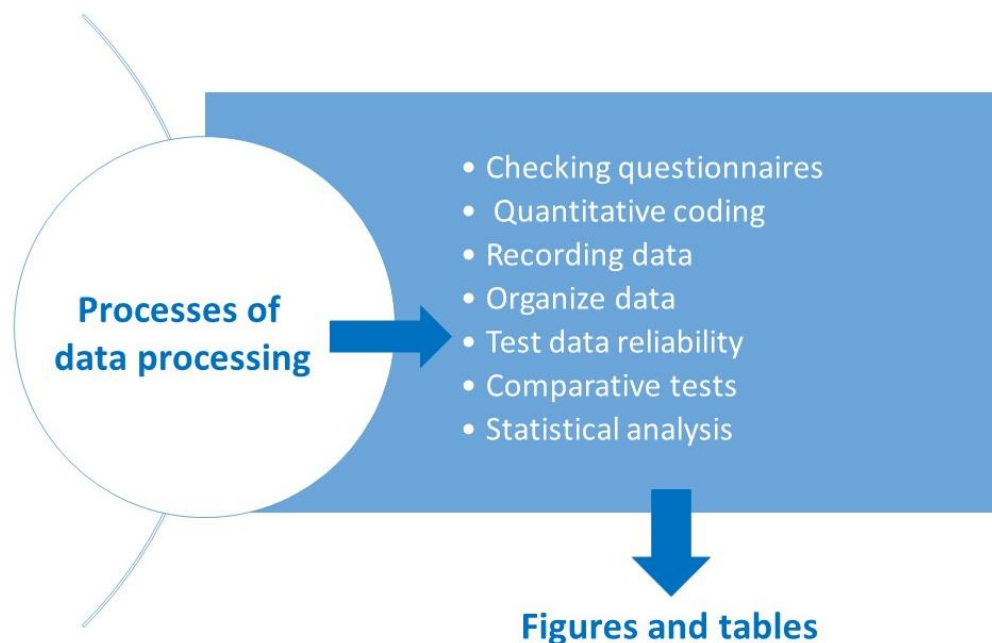
During the period under review, a total of 326 questionnaires were completed, of which 27 were incorrectly filled and 299 were evaluable. There were other 239 foreign visitors to interview but they arrived in the waiting room in the minutes before the start of the machine. 27 people were not cooperating during the interview and refused to fill in the questionnaire. Of the 27 people, 15 were British citizens, but were of Hungarian nationality and, referring to the nationality, did not want to participate in research conducted among foreign visitors. During the questionnaire survey, 39 times happened that the selected person had filled in the questionnaire before, they did not re-fill the questionnaire. In total, 624 passengers were identified as foreign visitors during the eight months and 56 passengers were underage or infants. The surveyed people were foreign visitors who spent a certain number of days in the city.

## **2.2. Method of data processing and analysis**

The process of data processing and analysis is shown in Figure 2. As can be seen from the diagram, the first step in data processing was to check the questionnaires, the aspect of correct filling

Following the verification of the questionnaires, I made the necessary quantitative coding. Then I recorded the data. I also systematized the data based on the personal characteristics

of the respondents, and the groups thus obtained make comparative tests. After that, I analyzed the prepared database with statistical methods and prepared result illustrative tables and figures that contain main results.



**Figure 2: Process of data processing**

*Source: Own edition*

Taking into account the nature of collected data through the questionnaire research, I have selected the methods of statistical analysis in accordance with the examination goal. Several statistical analysis procedures were used to carry out tests. Individual cases do not allow for generalization, so I can make a mistake when combining the experiences of individual visitors with one. At the same time, since my research is a descriptive type of research and not a purpose of theoretical creation can assume the risk of error.

The analysis of data set was started with the reliability test, then I used the descriptive statistical methods to characterize the data set to get acquainted with the main characteristics and travel motivation of foreign visitors to the city. Following the application of descriptive statistical methods, I examined relationships between the characteristics with statistical analyzes, cross-examination and stochastic models. . Finally, I looked at the indicators of the service processes and tried to find out what services the visitors used during their stay in the city, how satisfied or dissatisfied with these services were and what quality deficiency caused their dissatisfaction.

### 3. MAIN RESULTS OF THE DISSERTATION

Below I summarize the main findings of my hypothesis proofing. Table 4 summarizes my hypotheses and my theses.

**Table 4: Summary of Hypotheses and Theses**

No.	Hypotheses and Theses	Status
<b>H1</b>	The negative effects of seasonal fluctuations in the passenger traffic of Airport Debrecen can be alleviated by the implementation of scheduled services and passenger traffic can be stabilized	<b>Accepted</b>
<b>T1</b>	With the implementation of scheduled flights, constant traffic at the Airport Debrecen is achieved and it can provide constant revenues for the airport and the seasonal negative effect can be alleviated	
<b>H2</b>	Without segmenting passengers, the increase in passenger traffic leads to misguided conclusions, the so-called urban myths	<b>Accepted</b>
<b>T2</b>	By knowing the characteristics of passengers, realistic conclusions can be drawn.	
<b>H3</b>	Thanks to London / Luton flight to Debrecen, the number of tourists arriving in the city has increased.	<b>Rejected</b>
<b>T3</b>	Parallel to the increase in the number of passengers, the increase in the number of foreign visitors arriving in the city cannot be concluded.	
<b>H4</b>	The ratio of foreign passengers arriving from London / Luton to Debrecen is higher compared to Hungarian passengers	<b>Rejected</b>
<b>T4</b>	From passenger traffic data it can be stated that the proportion of British and other national passengers is lower than the proportion of Hungarian passengers.	
<b>H5</b>	The majority of foreign passengers arriving from London / Luton to Debrecen travel for the first time in the city.	<b>Partially Accepted</b>
<b>T5</b>	49% of visitors surveyed during the research period visited the city for the first time.	
<b>H6</b>	The decision of a flight from London / Luton to Debrecen to fly to Debrecen is affected by the good location of the city.	<b>Partially Accepted</b>
<b>T6</b>	The decision of foreign visitors coming to Debrecen from London is positively influenced by the good location of the airport, but it is important not to ignore the factors influencing other decisions, such as positive feedback from acquaintances.	
<b>H7</b>	Sightseeing is the most important tourist motivation for foreign visitors coming from London / Luton to Debrecen	<b>Rejected</b>
<b>T7</b>	Foreign visitors to Budapest and a smaller, regional airport such as Debrecen Airport come to a different travel motivation	

<b>H8</b>	The travel motivation of foreign passengers coming from London / Luton to Debrecen depends on their gender.	<b>Rejected</b>
<b>T8</b>	Travel motivation depends on the gender of the visitors, i.e. men and women choose a travel destination differently, while business travelers are the highest motivation for men, and women with VFR.	
<b>H9</b>	The number of foreign visitors to London from London / Luton to Debrecen depends on several factors	<b>Accepted</b>
<b>T9</b>	The motivation of visitors from London / Luton to Debrecen depends on the number of days spent in the city and the type of accommodation.	
<b>H10</b>	Services used by foreign visitors arriving from London / Luton to Debrecen meet the visitors' expectations.	<b>Partially Accepted</b>
<b>T10</b>	In most of the services under review, the services provided did not produce an enduring experience, but they met expectations.	

*Source: Own edition, 2018*

According to my first hypothesis H1: The negative effects of seasonal fluctuations in the passenger traffic of Airport Debrecen can be alleviated by the implementation of scheduled services and passenger traffic can be stabilized. The annual passenger traffic of the airport in 2013 and 2014 exceeded 100,000. In June 2012, scheduled passenger traffic commenced, until then it did not have significant annual passenger numbers at the airport. In 2013, passenger traffic increased and reached 130,000 people - 150,000 in 2014 - while in 2012 only 50,000 passengers were in the port. The importance of passenger traffic generated by scheduled services is great because it provides a steady income that stabilizes operation. By 2016, passenger traffic almost reached 300,000 people (284,956), which in 2017 exceeded this and closed the year with 318,184,000 passengers. The growth was 12 percent compared to 2016, which meant 33 784 passengers in one year. According to the presented passenger traffic data, I formulate the thesis belonging to the Hypothesis H1 as follows: T1: With the implementation of scheduled flights, constant traffic at the Airport Debrecen is achieved and it can provide constant revenues for the airport and the seasonal negative effect can be alleviated.

Airport operation, taking into account operating costs, means a high cost that is even present if the number of passengers is low. Such costs include, for example, personnel costs that are present throughout the year, such as the cost of customs officers, firework personnel, and operational service personnel. Scheduled flights can reduce seasonality and stabilize airport



revenue. By increasing the number of scheduled services, the number of passenger traffic may increase and this may reduce the negative effects of seasonal fluctuations.

According to my second hypothesis, H2: Without segmenting passengers, the increase in passenger traffic leads to misguided conclusions, the so-called urban myths. Since no information was available to date about the characteristics of visitors to Debrecen from London, I therefore tried to maximally identify and examine all the characteristics of the population. Until now, it was impossible to know who they are on the plane for what purpose of arriving in the city, how long they will stay and where they are staying. The only thing we could know was that it was not a homogeneous group, so I was looking at as many categories as possible, but only after the completion of the study it was found that they were useful or not and what the results could be for later to use.

This hypothesis requires a detailed and complex investigation and the first step was examining the national segmentation of passenger traffic. This is mainly due to the fact that, according to one of these false assumptions, WizzAir flights to Debrecen-London Luton have increased the number of foreign visitors to the city.

The nationality of passengers shows that the number of passengers from UK and other European countries is very low and that passengers from African, Asian and American countries are even lower. Based on it, it is questionable that the new flights have increased the number of foreign tourists coming to London from London.

Based on the above, I formulated the following thesis: T2: By understanding the characteristics of passengers, realistic conclusions can be drawn. It can be stated that the launch of new scheduled services has had a positive impact on the development of passenger traffic, but this data cannot be supported by the assumption that the number of foreigners arriving in the city increased simultaneously with the growth of passenger traffic and this would have had a positive impact on the growth of tourism revenues.

Before my research, there was no information about the low proportion of foreigners. Analyzing passenger traffic data and testing during January 2014 revealed a low rate of foreign visitors.

H3: Thanks to London / Luton flight to Debrecen, the number of tourists arriving in the city has increased. My third hypothesis is strongly linked to H2. The significance and importance

of this hypothesis is that an airport can play an important role in the economic growth of a region. One should not overlook the positive economic effects that a well-functioning regional airport can contribute to the economic development of the region. To increase the real income generated in the region, an airport contributes actively to consumption generated by incoming tourists and business travelers. Passengers who can be identified as tourists Debrecen offers various opportunities as the city has a significant natural and cultural potential, it organizes a number of cultural events a year, has a conference center which is an indispensable condition for tourism and a significant health tourism. The Debrecen Airport served 150,000 people in 2014 and nearly 300,000 passenger traffic in 2016. It can be stated that the steady increase in the number of passengers and the number of scheduled services are becoming more decisive both in terms of number of flights and the number of passengers carried. As can be seen from the above, T3 can be stated: Parallel to the increase in the number of passengers, the increase in the number of foreign visitors arriving in the city cannot be concluded.

The fourth hypothesis that: H4: The proportion of foreign passengers arriving from London / Luton to Debrecen compared to Hungarian passengers was higher. This hypothesis was incorrect. The analysis of passenger traffic data of the Central Statistical Office revealed that there are only a few foreign visitors. Approximately 8-10% of total passenger traffic is only a foreign passenger coming to Debrecen. This number varies by route, typically 4 to 14 people. Based on the above, I did not accept this hypothesis and I formulated the following thesis: T4 the analysis of passenger traffic data suggests that the share of British and other national passengers is lower than that of Hungarian passengers.

My fifth hypothesis: H5: The majority of foreign passengers arriving from London / Luton to Debrecen take the city for the first time. The partition numbers prepared by the respondents based on responses clearly show that the hypothesis formulated is almost half of the respondents. It was exactly 146 people that responded to Debrecen for the first time, which is 49% of the sample. Subsequently, the largest percentage indicated a 2-4 times response rate (18%), with the same proportion of those who recognized themselves as a regular visitor. It is an interesting research result that more than 60% of visitors to Debrecen for the first time traveled more than four times in the city (100 out of 153). Based on the

analysis of the distribution of city visits, the hypothesis is partially accepted and I formulate the following thesis. T5: 49% of the visitors surveyed visited the city for the first time.

My sixth hypothesis that H6: The decision of a flight from London / Luton to Debrecen has effected on the good location of the city in part. When asked about what was decided by Debrecen and the Debrecen Airport, the category "Other" was most popular among respondents, 52%. The factor influencing the decision most often mentioned in the other category was the good location of the airport, its proximity to Romania, or rather Oradea. Another influencing factor was the familiar visit of "Erasmus exchanges" or the admission of a medical university, or a dental advertisement. The next largest proportion, those foreign visitors who were invited by a friend to Debrecen, a friend recommended the city, which is 31% of the sample. Based on the ratios T6: The decision of foreign visitors coming to Debrecen from London is positively influenced by the good location of the airport, but it is important not to ignore the factors influencing other decisions, such as positive feedback from acquaintances.

Seventh hypothesis that H7: The most important tourist motivation for visiting foreign visitors to from London / Luton to Debrecen is the sightseeing. My hypothesis was based on the research results of GILYÁN (2008) and MUDRUCZONÉ (2005). During their research, the trips of foreign tourists arriving in Hungary were studied and based on the available data it was concluded that the most important tourist motivation of those arriving through Ferihegy is sightseeing, the second is visiting of relatives and business tourism. In Debrecen, 19% of the respondents were learning the motivation of travel. While in case of the capital, the majority of the respondents came with sightseeing, recreation and holiday purposes, and this ratio was only 5% in Debrecen. Visiting relatives is a major motivation for both cities. Based on the comparison of the results of the research it can be stated T7: Foreign visitors to Budapest and a smaller regional airport such as Debrecen Airport arrive with differing travel motivations

My eighth hypothesis that H8: Traveling passengers from London / Luton to Debrecen is a travel motivation depending on their gender. I accept the hypothesis because, based on the chi-square test result and the probability of P, it can be established that there is a strong statistical relationship between the two variables. In other words, it can be stated in relation to the sample under consideration, T8: Travel motivation depends on the gender of the

visitors, i.e. men and women choose a different destination for travel purposes, while business travel is the highest motivation for men in the survey, while women to VFR.

According to my ninth hypothesis H9: The number of foreign visitors from London / Luton to Debrecen depends on several factors. During the tests, it was proven that the number of days spent in the city can be significantly different because of motivation, so the motivation of travel influences the number of days spent. The motivation of traveling and the choice of accommodation are not independent. Because of the motivation, the type of accommodation visitors choose can differ significantly, in other words, the motivation of visitor trip influences the type of accommodation, i.e. whether you have a room in the hotel and your visitor depends on what your motivation is to travel. Regardless of the number of days spent, what type of accommodation is available for visitors to Debrecen. The frequency of the combined distribution shows that staying in Debrecen for 1-2 days or even a week stay in a hotel, while those who spend more time choose other types of accommodation. Based on the results of the tests it can be stated that T9: The motivation of foreign visitors coming from London / Luton to Debrecen depends on the number of days spent in the city and the type of accommodation.

According to my tenth hypothesis H10: Services used by foreign visitors arriving from London / Luton to Debrecen meet the expectations of visitors. The results presented show that many times the service did not meet the visitor's expectations and the service was worse than the visitors expected, but in some cases the visitor considered the service to be appropriate, so I partially neglected this hypothesis. Unfortunately, in several cases, the interviewees found that the services provided by the airport services, transportation, meals and accommodation did not meet their expectations. In terms of transport services, it is considered positive that more visitors stated that the service was better than expected and fully satisfied with the quality of the service, but several visitors were disappointed our city. On this basis, detailed analysis of the services and the determination of the indicator of the dissatisfaction and satisfaction of the visitors was justified. Overall, generally stated T10: In most cases, the services used did not produce an enduring experience, but did meet the expectations.

#### **4. NEW AND NOVEL RESULTS OF THE DISSERTATION**

It was necessary to get in touch with foreign visitors in some way, which was a difficult task. The visitors involved in the survey did not only fill in the questionnaire, but I talked to each of them and expressed their satisfaction or dissatisfaction in word of mouth. I consider the designed and applied questionnaire as a methodological result because I did not use a well-prepared and well-tested, questionnaire. According to BECSER (2006), in order to make the decisions to improve service quality more efficient, firstly need to define the dimensions of the given service and the possibility of dimension measurement, as well as the determination of the stakeholders of the service, are necessary.

I haven't used the SERVQUAL questionnaire, but on the given service quality dimensions, I defined the relevant dimensions and measurement indicators that are relevant to the research goal. Additionally, in the SERVQUAL questionnaire one must evaluate 22 statements for the quality of a service. Since my research involved not only one service, but eight different services (and their sub-services), the application of SERVQUAL questionnaire proved to be impossible because it contains more than 200 statements (taking into account separately the partial services) was not possible to complete a questionnaire. In compiling the questionnaire used, I took into account the optimized SERVQUAL model dimension and tried to narrow them down to the determination of satisfaction quality factors. Multivariate models enabled me to estimate the collective impact of personal features on satisfaction with the services. This means estimating the probabilities of the outcome variables. In addition, statistical results of the controlled variables of the explanatory variables are obtained by matching the model. In my research, 80% of the surveyed visitors were British citizens (nationality). Their "target group" carries, in addition to nationality, latently the comparison with the services of England. Their responses reflect the composition of their expectations / satisfaction of services. For all dimensions, the neutral - I got what I expected - was the most responsive answer. However, compliance with expectations cannot be the goal of quality management. Multivariate models have estimated the rate of outcome variables, i.e. the probability of occurrence. Therefore, in the case of a next research, the model can also be used to test satisfaction and recommend the use of the model for my research colleague.

## 5. PRACTICAL UTILIZATION OF RESULTS

Apart from the size of air traffic in the airport of Debrecen, there was no information on demand, so my primary research on this subject is certainly proved useful. Before carrying out the examinations, it was unavoidable how the results were to be used, but it was only later that a practical test was carried out or whether it could be used as a scientific result. There is a result that has no practical or scientific benefit, but it was necessary to carry out statistical surveys to make it clear. The newly introduced service of an airport, such as Debrecen's new scheduled airline between Debrecen and London-Luton, in 2012, has an impact on the economic environment in which it operates and at the same time it changes through this economic segment. It may be a logical expectation that these economic sectors will make decisions based on factual and not urban myths, and the results presented in the dissertation will serve as strategic inputs for these decisions.

On the passenger traffic data can be seen and found that following an exponential trend the traffic has increased significantly since 2012 and scheduled services played a decisive role in this growth. Unfortunately, at the same time we cannot declare that the number of foreign tourists arriving in the city has increased in parallel. The result of the national segmentation of passengers shows that the number of foreigners visiting the city is very low. I think interesting and valuable research results could be achieved if we are to look at 2017 or 2018 passenger traffic according to the nationality composition, and we consider the different aspects of the new Moscow-Debrecen passenger route.

I also recommend to colleagues to consider the role of airport in the economic development of Eastern Hungary. At the start of my research, as the airport's development and the number of passengers were stabilized at the beginning, there was no information on how much additional income the airport generates in the region through investments and exactly how much it contributes to increasing employment. Even in 2012, 67 people were employed in the airport, this figure will be by 2015, when passenger traffic reached 200,000 people and 179 employees, and there are no jobs such as the taxi service required by the passengers and the city transfer bus operation is generating. Since six years have elapsed since the launch of scheduled services, in my opinion indicators are already available which, by comparing and analyzing, can be quantified by the direct and indirect effects of airport operation.

Among the results of segmentation and tourism consumption of visitors, I recommend the followings to strategic decision-makers, and I believe that these results serve as valuable inputs and dispel some false assumptions.

1. The result of the age-group segmentation of respondents was that the largest group was the visitors between 18 and 30 years of age. This result plays an important role because we cannot ignore the state of consciousness of the visitors' age distribution, that is, change of attitudes. People continually modify the range of services they have purchased and their opinions about spending leisure time. In the questionnaire, there was no such question, but it would serve as an important information if we were able to know where the visitor was at the stage of family life (this can be deduced from the age). When developing services, age plays an important role as it is characterized by an increasing number of service providers that personalize their services and look at a target group of a particular life cycle stage, such as a student or a retired person.
2. Based on the fact that the respondents individually organized their travels or traveled to the city by organizing a travel agency, more than 90% of respondents replied that they individually organized their journey and less than 10% bought a so-called package tour. This low figure is likely to be related to the fact that in 2014 no business relations with travel agencies have been established during the research, and one of my suggestions is to strengthen this cooperation.
3. As an interesting and surprising research result, it was found that nearly half of the respondents did not visit Debrecen for the first time, and 100 people visited the city for more than 4 times.
4. As regards the decision to visit Debrecen, most of the respondents selected the other category in the questionnaire and, in the case of an open response, gave decision factors such as the good location of the city and the airport, and the proximity to Oradea and other cities in Romania. I believe that the information presented as a result should be emphasized and taken into account because the development of Oradea Airport could be a threat and could have a negative impact on the further growth of passenger traffic in Debrecen. Apart from the location of the airport, friend visits have been mentioned several times by travelers visiting Erasmus scholarships, visiting a medical university, and advertising a dentist. Based on these, there is interest in both

city and educational and dental services, but my suggestion is that through marketing tools, these ads will be better communicated by the organizations to the target groups concerned.

5. Based on the data collected on the number of days spent in the city, I also find it interesting to note that the proportion of those surveyed was high, the proportion of those who spent more than seven nights in the city or who belonged to the other class. These visitors are mainly university students studying at the University of Debrecen who spend several months in the city. Since such information was previously unavailable, I did not investigate the satisfaction of non-residents with accommodation facilities.
6. According to their travel motivation, the most frequently motivation was "private travel", which was marked by 32%. This group is mainly composed of parents, friends and friends who visited a colleague and acquaintance studying at the University of Debrecen. The next largest share was made up by business travelers and the third largest group for the purpose of learning. According to a non-study of travel motivation, it was found that in the case of men, business travel and private travel were the highest in case of women. From the marketing point of view, I believe that this result can have practical benefits when customizing hotels and services. However, it should not be overlooked that the destination for business visitors was not Debrecen, unfortunately most of them traveled to the previously mentioned Romania. Statistically, it proved that the number of days spent in the city could differ significantly depending on the visitor's travel motivation, meaning that the motivation of the trip influenced the number of days spent by visitors. Business visitors (who did not travel from the city) typically stayed for 1-2 days in the city, but private travelers spent a week in the city.
7. Quality assessment of services revealed that the service did not meet the visitor's expectations several times and the service was worse than the visitors expected. I would point out the airport, transport and meals related services and draw attention to them. For airport services, 51 people rated the service worse than expected. In the case of transport services, this number was only 24, and I was surprised to find that it was a positive thing that more visitors would have to consider it to be better than the



one they expected and to be fully satisfied with the quality of the service. In terms of meals, 18% of the respondents thought that restaurant service was worse than expected. Based on the results described, we need to think about how to develop processes, build organizational structures, how to introduce organizational rules and working methods, and control mechanisms to better accommodate visitors. It is important to have greater attention to the processes and individual employees' transparency, to ensure a safe environment for visitors to the city and to avoid the cost-effective implementation of the activities. I would call on the service organizations to follow their processes, with the transformation and quality improvement of their visitor satisfaction:

- The dissatisfaction of most of the visitors with regard to the airport was triggered by the following factors: lack of smoking space, lack or limitation of WIFI service, poor supply of buffet and shop
- The biggest dissatisfaction with the transport service providers was the communication, and all other indicators evaluated approached the satisfied level in both relations between the airport and the city and within the city. The biggest problems in the area of passenger transport have been no examples and complaints about the overcrowding already known and the unreasonable amount of charging the taxi. As a common and known breach, a valid lease or without a ticket on urban public transport is displayed and, unfortunately, a few more comments also indicate a negative experience as a commentary that the visitor simply forgot to sign the ticket and the punishment had a negative impact on the entire trip.
- In catering services, it can be clearly stated that developing the necessary communication skills and improving the language of the menus, expanding the selection and focusing on specific nutritional needs. The development of restaurant services has clear advantages, although this obviously entails costs.

In fact, we do not have to change what the employees of the service organization are doing, but how they do it. A possible service quality development method may be lean management. Lean helps ensure that every device and every employee has a place to do, not have to find out who, where to reach it, and start the process when everything is available to accomplish it. There are also several examples of the use of lean principles for "slimming"

services in the literature. First of all, almost all professionals agree that industrial processes differ significantly from service delivery processes. First, they argue that a person who is the so-called beneficiary of the service can not be compared to an object. A visitor who uses services, has feelings, has ideas about his travel purpose, or a health traveler about his illness. The visitor has various legitimate and less legitimate expectations regarding the service provider, circumstances, staff behavior, and clothing. We can say that the visitor / guest is "going back" in case something does not fit his ideas. According to FILLINGHAM (2007)<sup>4</sup>, it is commonly argued that as people are involved in service delivery processes, and since every person is unique, it is not possible to apply one of the essential elements of slimming, that is, standardization.

My research unfortunately included unsuccessful investigations. Such an attempt was made to find satisfaction indicators for health services, entertainment services, sports related services, and conference attendance services. Unfortunately, a very low number of visitors spent the evaluation part of the questionnaire because they did not use these services during their stay in the city. Since the fill did not reach 50 people (about 18% of the sample), these services were not examined in detail. In the future, I recommend researching the quality of these service processes as a research field because I think that important information can be disclosed

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<sup>4</sup> FILLINGHAM, D. (2007): Can lean save lives? Leadership in Health Services, Vol. 20. No. 4, p. 231-241.



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### List of publications related to the dissertation

#### Articles, studies (5)

1. **Palatinus, B.:** A Debreceni Nemzetközi Repülőtéren végzett kérdőíves kutatás tesztelési időszakában kapott eredmények és következtetések bemutatása.  
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2. **Palatinus, B.:** Multi-Level Analysis of Visitors' Satisfaction Flying to Debrecen: Main Aspects of the Research.  
*Apstract.* 9 (3), 27-32, 2015. ISSN: 1789-221X.  
DOI: <http://dx.doi.org/10.19041/APSTRACT/2015/3/4>
3. **Palatinus, B.:** A Debreceni Nemzetközi Repülőtéren tervezett folyamatstruktúra benchmarking vizsgálatok módszertani kérdései.  
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4. **Palatinus, B.:** A folyamatorientált vezetési filozófia szemléletének adaptálása egy konkrét kutatási projektben.  
*Taylor.* 6 (1-2), 137-147, 2014. ISSN: 2064-4361.
5. **Palatinus, B.:** International passenger survey at the Airport Debrecen: Main characteristics of departure visitors from AD.  
*Apstract.* 8 (4), 43-49, 2014. ISSN: 1789-221X.  
DOI: <http://dx.doi.org/10.19041/Apstract/2014/4/7>

#### Conference presentations (1)

6. **Palatinus, B.:** Customer service research at the Airport Debrecen.  
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International Institute of Social and Economic Sciences, Prague, 926, 2014. ISBN:  
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### List of other publications

#### Articles, studies (1)

7. Igyártó, L., Justyák, E., Lénárt, N., **Palatinus, B.**, Szabó, A., Juhász, C.: Kis- és közép vállalkozások fejlesztésének lehetőségei az Új Széchenyi Terv pályázatai alapján. In: "Az ismeretszerzéstől az ismeretátadásig" : a Kerpely Kálmán Szakollégium gyakorlatorientált kutatási projektjeinek bemutatása az agrártudományok területéről. Szerk.: Balla Zoltán, Juhász Csaba, Zsembeli József, Debreceni Egyetem Agrár- és Gazdálkodástudományok Centruma Kerpely Kálmán Szakkollégium, Debrecen, 127-142, 2012. ISBN: 9786155183201

#### Conference presentations (1)

8. **Palatinus, B.**: A folyamatmenedzsment alkalmazása a rendezvényszervezés területén. In: XXXI. Országos Tudományos Diákköri Konferencia Közgazdaságtudományi Szekció Veszprém, 2013. április 18-20. : előadáskivonatok. Szerk.: Szabó Lajos, Pannon Egyetem, Veszprém, 575, 2013. ISBN: 9786155044786

The Candidate's publication data submitted to the iDEa Tudóstér have been validated by DEENK on the basis of Web of Science, Scopus and Journal Citation Report (Impact Factor) databases.

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