BUSINESS TRAVELER HETEROGENEITY IN AIR TRANSPORT

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Abstract

The research investigates air transport business traveler heterogeneity in CEE region according to the selected type of carrier. The objective is to reveal whether there is a significant distinction between business passengers using low-cost carriers (LCC), full-service carriers (FSC) and air taxi operators. It aims to find out the most important determinants by which business passengers choose a carrier type. Information about business passengers will be gathered in a form of a questionnaire, applies to FSC and LCC customers, and air taxi passengers by semi-structured interviews. The survey results will be compared with similar studies conducted in the UK, South Africa and Brazil. There is a strong expectation that financial and economic crisis significantly changed strategy of carriers and behavior passengers. We expect to find a higher ratio of business travelers at LCC then in the previous years. There is also well established but not well promoted aero taxi market, which has huge potential in the next years, not only on the Czech market. Since we are only at the beginning of our research we would like to present approach, research questions and preliminary results. No real conclusion will be available at the date of the conference, only preliminary results.

Key words: business traveler heterogeneity, low-cost carriers, full-service carriers, aero taxi

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Introduction

Segmentation of passengers in aviation, especially after financial crisis, seems to be big unknown. There has been few researches which took up investigation of this field. Nevertheless, we have been unable to find any relevant studies from Europe in recent years. Therefore, we decided to examine the problem on our own with help of University of Economics in Prague. Research plan consists of two different approaches to data collection and analyses methods. The first is focused on individual, qualitative approach based on semi-

structured interviews, and the second is quantitative approach with help of online questionnaire. Data collected from semi-structured interviews were gathered and analyzed, though questionnaire data collection is proceeding (April 2016).

1 Literature Review

There are only few studies which analyze heterogeneity of business air transport passengers. A study from the UK (Mason, 2000) used the stated preference methodology in a research focused on business travelers in Europe. The aim was to reveal the propensity of this passenger segment to use low cost flights on short haul routes. Thanks to stated preference, it was possible to assess trade-offs between product characteristics. Hypothetical scenarios were created and variables were included. Price, frequent flyer program rewards, in-flight comfort and flight frequency were items which were included in the research instrument. For each variable there were selected several service levels. These product designs were rated on a ten-point scale. The research was held at London-Luton and London-Stansted airports. The survey observed that 67,5% of respondents had traveled with LCC before, for either business or leisure purpose. Based on the survey a linear regression was conducted to reveal sensitivity of business passengers to price, on-board service, flight frequency and frequent flier programs (FFP). There were designed several models: a model for all business travelers who participated in the research and separate models according to the company size. Mason found out that employees of large companies were less sensitive to price. Also in-flight service, FFP and flight frequency were more important for this traveler segment.

The study included also interrelationship between the variables for each market grouping. In the first example respondents could choose between two scenarios: a business class type of service worth £200 and low-cost service with reduced price £100. The study revealed that the second option is more attractive by 6 % for employees of small companies but it is 10% less attractive for passengers working in large companies. In the second example respondents were choosing between two daily frequencies with price of £100 and five frequencies for £150. The latter option is not attractive for any passenger group. The attractiveness of the second option falls with company size. Another example has again two scenarios: two daily frequencies with low-cost service worth £100 and five daily frequencies with business class for £150. The second option is more attractive for employees of large companies. In the final example respondents choose between FFP rewards absence (£100) and

FFP offer (£125). The latter scenario is not attractive for passengers working for companies with less than 100 employees.

Mason conducted another survey (2001) of short haul business passengers using LCCs and FSCs. He collected data from a survey held at two airports: London-Heathrow and London-Luton. Heathrow airport is mostly used by FSCs whilst latter is considered to be an airport for LCCs. According to the collected data it may seem that respondents from Heathrow airport are mostly employees of large companies unlike those from Luton. However, a chi-squared test does not confirm significant differences. Respondents also evaluated seven attributes of air transport on a ten-point scale. The results of ANOVA significance level revealed that there were not two different segments of business travelers in the UK. In other words, passengers who use FSCs use LCCs and vice versa. According to the mean scores results, both segments perceive punctuality and frequency as the most important attributes. The only attribute which is perceived differently is price which is more important for LCC business travelers.

A research conducted in Brazil (Evangelho, Huse, & Linhares, 2005) shows that there is market segmentation of air transport business travelers. The data collection was held at Rio de Janeiro airport through interviews. According to the results, with LCCs travel younger business passengers and employees from smaller companies. For FSCs users is typical the existence of well-defined travel policy in their companies. Respondents also evaluated 11 attributes on a five-point scale. Unlike the Mason's study mentioned above (2001) the findings indicate that business passengers using FSCs and LCCs differ significantly in terms of the valuation of air transport service attributes. For FSC travelers are important these factors: punctuality, frequency, flexibility of ticket emissions, price, mileage programs, in-flight service and VIP lounges, in the order given. LCC travelers give greater emphasis to punctuality, price, flexibility of ticket emissions, frequency, mileage programs, in-flight service and VIP lounges, respectively.

A South African study (Fourie & Lubbe, 2006) follows similar studies mentioned above. It deals with determinants of business passengers choice of airline type. In this case, respondents evaluated 11 attributes on a five-point scale. The study indicates that the two groups of business travelers are different in terms of valuation of certain service factors but the results show that there is not a significant difference between those two segments in South Africa compared to e.g. study of Evangelho (2005). Business passengers flying with FSCs and LCCs differ the most in assessing these attributes: frequent flyer programs, frequency of flights, on-board meal, airport lounges, business class option and seat selection. On the other

hand, there is not such a big difference between those two segments in these attributes: seat comfort, in-flight entertainment, high cancellation charges, price and payment method.

Above mentioned researches are either outdated or were conducted in countries with different market characteristics from the EU. There is no relevant study from the CEE region. There is also no study which observes distinction of air taxi travelers together with FSC and LCC business customers. On the other hand, air taxi is a subject of research and there are several studies dealing with this type of transport e.g. Baik, et al. (2008) or Lee, et al. (2008).

2 Form of research

As motioned in introduction we have chosen two different methodologies to gather and analyze data. This section of paper is brief introduction into methods and their principles along with definition of research question.

2.1 Research questions

Research questions defined for purpose of this research are based on researchers' long term experience in the industry along with trend monitoring in aviation passenger transportation. Correctness of hypotheses, which are derived from research questions, can be questionable, clarification was needed. Clarification has been done by semi-structural interviews with experts, providers and users of specific aviation services. Respondents were carefully selected from known Czech and Slovak aviation community. However, for business reasons they asked us not to reveal their identity.

Research Questions:

1. What are determinants for choosing aviation service provider?
2. What is distribution of business travelers, in terms of company size, among types of aviation carries (FSC, LCC, Air taxi[1])?
3. What is list of services that should be offered by aviation carrier to attract business travelers. (Hypothesis for this question will be defined after evaluation of questionnaire data. Estimation spring 2017)?

3 Semi-structured interviews – realization

3.1 Interviews

[1] Air taxi – It is contracted on demand transportation of goods and passengers in aviation.

Prior to definition of guidance for semi-structured interview there were extensive analyses of available sources to save respondents' time during interview and act as an adequate counterpart to a respondent. The main concern was influenced and prejudicial in relation to a respondent. Prejudice was an important issue because order of topic can influence a respondent in way of his/her overall mind set. Specialists chosen for interview are from all possible sectors of industry, some of them are clients others are service providers. There is also one specific group of respondents who are neither client nor services providers. They are owners of successful companies who chose to buy their own aircraft for purpose of business trips. The realization of interviews was based on principles described in the literature (Wildemuth, 2009).

3.2 Conclusion

There was a suspicion that low interest in air taxi services was caused by high price of service. Main reason for high price of service is defined by use of specific type of airplanes. Some of service providers have small[2] aircrafts in their fleet but utilization of this airplane type for purpose of air taxi is low, even if their price for rent is more acceptable for potential customer. Reason for this is a general public opinion, they consider air taxi services as expensive way of transport, mainly used by politician, sportsman and wealthy entrepreneurs, which is true, thanks to air taxi companies' strategy. Therefore, air taxi services providers utilize small airplanes on pilot training rather than air taxi services. This strategy does not favor usage of air taxi services as an alternative to public or car transport.

Result of this gap on the market is that wealthy entrepreneurs choose to buy small airplanes for their own use. Utilization of a private airplane is usually very poor but it is still the most effective way of transport. Small airplanes have also ability to land on small airfields with unpaved runways. This dramatically increases number of potential destination and reduces amount of airport fees. There is around 90 small suitable airfields only in the Czech Republic. This high coverage with reliable car taxi service in region have potential for ideal transportation network.

Services provided by FSC and LCC are not always preferable since the time of departure and destination is strictly given. Taking into consideration value of working time of

[2] Single engine propeller or turbojet aircraft capable of carrying 3 – 7 passengers in acceptable comfort (similar to business saloon car, etc. BMW 5 series) on short distances up to 2000kms within 3 hours.

an employee and/or value of spare time it is possible to evaluate the aero taxi, car travel and commercial air tickets costs using formulas[3]:

Tv_F – Value of free time in Euro per hour

Tv_W – Value of working time in Euro per hour

P_{CA} – Price of air ticket (FSC, LCC) depends on company politics[4]

P_{AET} – Price of air taxi service available[5]

P_{CAR} – Price of car travel

N_{EMP} – Number of employees on business trip

Tt_{CA} – Time of travel by airline (FSC, LCC)[6]

Tt_{AET} – Time of travel by air taxi[7]

Tt_{CAR} – Time of travel by car

$$\text{Aero taxi cost}: \sum_{n=1}^{n=N_{EMP}} \left(Tt_{AET} \times Tv_W\right) + \left(Tt_{AET} \times Tv_F\right) + P_{AET} \qquad (1)$$

$$\text{Comercial air ticket cost}: \sum_{n=1}^{n=N_{EMP}} \left(Tt_{CA} \times Tv_W\right) + \left(Tt_{CA} \times Tv_F\right) + P_{CA} \qquad (2)$$

$$\text{Car travel cost}: \sum_{n=1}^{n=N_{EMP}} \left(Tt_{CAR} \times Tv_W\right) + \left(Tt_{CAR} \times Tv_F\right) + P_{CAR} \qquad (3)$$

Considered all variables which are specific per each iteration, it is possible to provide decision matrix for choosing the most economic service or carrier provider. Equations present that price is not only key variable. Time has much bigger part in cost estimating process.

4 Questionnaire – realization

The collection of primary data from business passengers using LCCs and FSCs will be made via a questionnaire. The respondents will be business passengers who use civil aviation for their business trip. It is expected that among passengers participating in our research will be

[3] Source: Dissertation (unfinished state), Ing. Eduard Niko.
[4] Including price of car taxi to and from airport/airfield
[5] Including price of car taxi to and from airport/airfield
[6] Included waiting time and traveling time to airport
[7] Included waiting time and traveling time to airport

employees working in companies of different size, type of business entity and industry. For this purpose, a web-based questionnaire in Quanda marketing software has been designed. The questionnaire formation is based on rules described in the literature (Řezanková, 2011).

The questionnaire distribution will be held at airports in Prague, Bratislava and Warsaw. Passengers at those airports will be approached randomly between check-in and the security clearance. It is supposed that due to strict security conditions at the airports nowadays the researchers will not be allowed to enter the transit area. Passengers will be given a leaflet with a brief description of our research and a link to a web-based questionnaire. The link will be printed on the leaflet both in an explicit way (as a URL address) and as a QR code which makes the questionnaire more convenient for the mobile phone users who can shorten their waiting time at the airport by filling in the questionnaire. Similar way of distribution via leaflets was used in Julsrud, et al. (2012) and Denstadli, et al. (2013). The researchers' effort will be targeting at both LCC and FSC passengers.

When respondents access the questionnaire they will be able to choose between Czech and English version. It contains a set of questions and 18 factors which will be answered and evaluated by respondents. The majority of questions are closed-ended with a list of choices from which respondents must choose just one. There is only one open-ended question asking about the airline's name which must be typed manually. Through this question will be clear if the respondent travels with LCC or FSC. There are extra questions which are intended solely for business passengers which are only closed-ended.

Besides answering mentioned questions respondents will also evaluate 18 factors on a five-point Likert type scale:

- 1 – not important;
- 2 – quite important;
- 3 – important;
- 4 – very important;
- 5 – extremely important.

Based on the factor evaluation it will be possible to verify the importance of different aspects of air transport transportation and if (or how) business passengers who use low-cost and full-service airlines differ from each other. We assume that the travelers using a particular type of airline on the particular date are more inclined to use that type of service. The same approach was applied in Fourie & Lubbe (2006). Those factors will be evaluated both by leisure and business passengers.

4.1 Methodology of data evaluation

For the verification of a distinction between passengers using LCCs and FSCs it is necessary to calculate mean scores of each factor using PASW Statistics 18. Those average values will be tested to reveal if travelers from each airline model are statistically different. Based on the assumption that the sub-samples are normally distributed, independent of each other and have the same variance, we can use the simple test for equality of means which was used e.g. in Evangelho, et al. (2005). Formally captured as follows:

$$H_0 : \mu_{FS} - \mu_{LC} = 0 \qquad (4)$$

$$H_1 : \mu_{FS} - \mu_{LC} \neq 0 \qquad (5)$$

The results will be compared to similar studies conducted in the past.

Conclusion

Thanks to interviews with experts, air taxi part, we have been able to describe formulas to properly determine cost of travel for business passengers in various form of travel. We were also able to identify potential customers of air taxi. Results present that that there is a low interest in traveling with air taxi because of high prices of this service. This type of service remains a privilege for politicians or wealthy businessmen. Air taxi providers are forced into using their fleet for training purposes as a result. It is necessary to stress that price is not the only factor which is taken into consideration by business passengers using this type of transport. Time of transport is an equal attribute based on interviews with business travelers. Air taxi passengers also appreciate the time flexibility contrary to conventional air transport carriers.

Results from questionnaire should describe business travelers' segmentation in FSC and LCC airlines. After finishing the survey, we will be able to describe how FSC and LCC business passengers value different attributes of air transport and if those two segments differ from each other significantly. If there was a strong distinction of these two segments it would imply that LCCs attracted new segment of business passengers who had not travel by air before. In the opposite case it would mean that LCCs would be driving away businesses away from FSCs. The same assumption was made in other studies mentioned in the literature review. Both result should give enough inside to understand today's distribution of business travelers in aviation. The next step of the research would be a suggestion of optimal strategy

for all types (Air taxi, FSC and LCC) of air transport carriers based on the results from semi-structured interviews and the questionnaire.

According to the literature review we expect that there will be some differences between business travelers flying with FSCs and LCCs. It is supposed that FSC users will place higher emphasis on in-flight service, FFP, VIP lounges, seat comfort and business class option. These services are usually offered by FSCs and it is obvious that passengers who fly with this type of carrier will rate these factors differently. On the other hand, we assume that there will be several attributes of air transport which will be evaluated in a similar way by both groups of passengers, e.g. punctuality, seat selection availability or method of payment.

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