

Research Article

A Field Study Towards Determining The Factors That Affect Preferences For Travel Mode Between City Pairs in Turkey¹

Türkiye’de Şehir Çiftleri Arasında Ulaşım Türü Tercihini Etkileyen Faktörleri Belirlemeye Yönelik Bir Alan Çalışması

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Abstract

This study aimed to determine the common criteria that influence individual's preferences to use air travel between city pairs, for which there are no non-stop flights. For this purpose, a survey study was conducted in Kayseri and Bursa, which are Turkey's important trade, industry, and tourism cities, on the 3-month period between January and March 2018. Chi-square tests, t-tests and one-way anova tests were used for the analysis of the data collected from the questionnaires. According to the empirical findings obtained as a result of the analysis of the data set, the most preferred mode of transportation between Bursa and Kayseri provinces was the private vehicle/individual's own vehicle. The most important criteria in the choice of transportation mode were found to be non-stop transportation and affordable prices for the travel/tickets. Results of the study concluded that in the future, if a non-stop flight is placed between the two cities, the majority of the participants, 72.3%, will prefer the air travel. Non-stop flights to the city pair in question will contribute to the development of trade and economy in both cities.

Keywords: Aviation; Air travel demand; Travel mode preference; Intercity travel

Öz

Bu çalışmada aralarında aktarmasız uçuş bulunmayan şehir çiftleri arasında ulaşım türü tercihine etki eden kriterlerin belirlenmesi amaçlanmıştır. Bu amaçla, Ocak-Mart 2018 tarihleri arasında 3 aylık dönemde Türkiye'nin önemli ticaret, sanayi ve turizm merkezlerinden Kayseri ve Bursa illerinde anket çalışması yapılmıştır. Anketlerden derlenen verilere ki-kare testleri, t-testleri ile tek yönlü anova testleri uygulanmıştır. Veri setinin analizi sonucunda elde edilen ampirik bulgulara göre, Bursa-Kayseri illeri arası seyahatlerde uçağa alternatif olarak en çok tercih edilen ulaşım türü özel araç/kişinin kendi aracı çıkmıştır. Ulaşım türü tercihinde en önemli kriterlerin seyahat maliyetin/bilet fiyatının uygunluğu ile aktarmasız ulaşım olduğu sonucuna ulaşılmıştır. Çalışmada, gelecekte iki şehir arasında aktarmasız uçuş konulması halinde katılımcıların %72,3'lük büyük

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çođunluđunun uçađı tercih edeceđi sonucuna ulařılmıřtır. Söz konusu řehir çiftine aktarmasız uçuř konulması her iki řehirde ticaret ve ekonominin geliřmesine katkı sađlayacaktır.

Anahtar kelimeler: *Havacılık; Hava seyahat talebi, Seyahat modu tercihi; řehirlerarası seyahat*

1.Introduction

While the development of air transportation enables faster and more comfortable travel, it plays a role in increasing globalization as well as contributing to the economic, cultural, and social development of countries. Elimination of regional disparities is a necessity for Turkey to increase its global value and welfare. This is possible by providing equal quality and uninterrupted transportation to every part of the country.

The Covid-19 epidemic, which was declared as a pandemic on March 11, 2020, is a truly global crisis and has caused great negative effects on sectors such as tourism, production, trade and air transportation, which have a high share of human mobility and a high share in the country's economy (Canlı and Özdemir, 2021, p.658-661). The International Air Transportation Association (IATA), on the other hand, predicts that global passenger traffic will return to pre-Covid-19 levels at the earliest by 2024 (IATA, 2021).

In Turkey, especially after the liberalization of the aviation sector in 2003, competition increased with the entry of airline companies to the market and the removal of obstacles from flight lines and routes. Although there is a significant increase in the number of domestic passengers transported by the airlines ever since 2003, a large portion of about 90% of the transportation within the country is still carried out through road transportation. The share of domestic airline transportation was around 9% in 2017 (UAB, 2018).

Because of Turkey's mountainous, rough land structure, and large surface area, road transportation requires longer travel times and is also challenging. Any possible increase in the share of airline transportation will cause significant shortening in travel times.

The majority of airline companies in Turkey uses Istanbul as the main center. There are domestic non-stop flights from Istanbul to almost every airport in the country. Other flight centers used by the airlines are Ankara, Antalya, and İzmir.

Other flights except the ones made from main centers in Turkey, which are also known as cross flights, are carried out between a very limited number of places. Flights between points other than the main centers are carried out by connecting flights. Connecting flights are not attractive due to long transfer (waiting) times and high-ticket prices.

This study investigates the resulting effects of putting on a non-stop flight between Kayseri and Bursa. Also, it searches for the difference between other modes of transportation through variables such as travel cost, excess baggage fee, travel time, vehicle safety, and prestige. For this purpose, Bursa and Kayseri cities were selected as the city pair for which the survey was applied. Bursa is located at one of the important junction points due to its geographical location. According to the Turkish Statistical Institute (TUIK) 2019 data, Bursa is the fourth most populous city in Turkey and ranks fourth in the regional developmental index. In addition, it is one of the most important tourism, industry, and trade centers of the country, and its population increases over the years with migration. Kayseri is one of the most important tourism, industry, and trade centers of the Central Anatolia Region. According to the TUIK 2019 data, Kayseri is the 15th largest city in terms of population and ranks 13th on the index of development.

In the literature, there are several studies addressing passengers' preferences regarding transportation mode and the factors affecting the transition to air travel; however, there are limited numbers of studies examining the lines that do not have non-stop flights between them. In order to increase profitability, have a knowledge of demand is essential for policymakers. This is possible by understanding traveller's behavior (Cantillo, V., Mendieta, O., Cantillo J., Cantillo-Garcia., 2021). The increase in competition among airline companies in parallel with the increase in the demand for air transportation leads the airline companies to develop strategies for the demands and needs of potential passengers. In this regard, knowing the factors that affect demand is crucial for airline companies. This study is considered to be

important in terms of guiding the airline companies and planners that have the intention of putting flights on the domestic lines that do not have non-stop flights.

2. Some studies focused on travel mode choice preferences among city pairs

Seo & Kim (2003) and Park & Ha (2006) studied how the demand for airlines would be affected by the launch of the high-speed train. By using Logit ve Artificial Neural Network and Virtual preference models, they found that with the launch of the high-speed train would negatively affect the air travel demand.

Van Can (2013) studied to investigate the travel mode choice of local tourists. By using multiple probit model it has been concluded that travel time / km, travel cost / km income rate, travel mode quality variables and income were key elements in explaining the modal choice preferences of tourists.

Jung & Yoo (2014) determined whether there was a difference between the flag carriers, cost leaders and high-speed train mode behaviors among business / leisure passengers. By using multinomial logit and nested logit model, increasing ticket prices, access time to travel mode and journey time have been found to reduce the likelihood of choosing the relevant mode of transportation, and that business passengers are willing to pay more than leisure travelers to reduce access time and journey time.

Wang et al. (2014) studied to investigate the travel mode choice behavior in intercity trips, to identify the factors affecting the shift in travel mode. By using multinomial logit and nested logit model, it has been found that increased travel time and travel costs make it less likely to use the respective travel mode.

Li & Sheng (2016) identified key factors affecting passengers' modal choices in 4 city pairs in China and estimated the modal distribution of passenger travel demand for some of China's intercity transportation markets. By using sensitivity analysis, it has been found that when the travel distance exceeds a certain threshold, passengers became less sensitive to the connection time of the airport-high speed train integrated service, the journey time was the most important factor affecting the market share of the airport-high speed train integrated service.

Chen (2017) examined the effects of high speed train on domestic air transportation in China from both demand and supply perspectives. By using panel regression analysis, it has been found that after the provision of YHT services, a decrease was observed in domestic passenger, flight number and seat capacity.

Hess et al. (2018) identified the factors affecting the choice of travel modes in two large intercity corridors in the USA. By using logit model, passengers who exhibit a more positive attitude towards cars and / or give importance to privacy were more likely to choose the car than bus and rail. In addition, passengers who care about privacy were more likely to choose the bus than the railway.

Boonekamp, T., Zuidberg, J., Burghouwt, G. (2018) identified the most important determinants of air travel demand. By using two-stage least squares analysis, it has been concluded that the ethnic connections between the countries, the share of aviation employment, and the presence of low cost carrier on the route lead to an increase in passenger demand.

Zhou, Heng., Xia, Jianhong., Norman, Richard., Hughes, Brett., Nikolova, Gabi., Kelobonye, Keone., Du, Kai., Falkmer, Torbjorn. (2019) explored travel behavior and travel mode choice of airline passengers and communities in Western Australia. By using multinomial nested logit ve nested logit models, it has been found that travel cost, travel time, service frequency, and seat comfort play an important role in travel mode preference.

3. Research

The aim, scope, method of the research are given under this heading.

3.1. Aim of the research

The aim of this research is to determine the criteria affecting individual's preferences of travel mode and the factors affecting the transition to the plane. For this purpose, the following research questions were tried to be answered.

- What are the factors affecting the transition from other modes of transportation to travel by plane?
- Is there sufficient demand for non-stop flights between Kayseri and Bursa?

3.2. Method

The research was designed with a relational screening approach that aims to determine the presence of co-exchange between two or more variables. Correlations and comparisons were considered in this group (Karasar, 1984, p.83).

This study used the variables (regressors or determinants) that exist in the literature, and opinions of the experts while developing a model for determining the factors affecting the transition to air travel between city pairs. As a matter of fact, correctly determined demand variables are important in an accurate demand estimate.

While primary data was used through the survey in some studies, secondary data or both data types were used together in some others. Ticket price/travel cost (Seo and Kim, 2003; Park and Ha, 2006; Roman et al., 2007; Jung and Yoo, 2014; Wang et al., 2014; Hess et al., 2018), travel time (Seo and Kim, 2003; Roman et al., 2007; Jung and Yoo, 2014; Wang et al., 2014; Li and Sheng, 2016, Cheng et al., 2019) and purpose of the trip (Roman et al., 2007; Wang et al., 2014; Li and Sheng, 2016; Hess et al., 2018, Cheng et al, 2019), which are the common variables (regressors, determinants) used in the studies, are included in the model. In addition, the total travel time from the starting to endpoint (Seo and Kim, 2003; Roman et al., 2007; Li and Sheng 2016), the availability of non-stop flights (Hsiao and Hansen, 2011), and the ease of transportation from the starting point to the airport/airport to the endpoint (Wang et al, 2014) are added to the model. Moreover, transfer time in connecting flights (Roman et al., 2007; Li and Sheng, 2016), tariff eligibility, promotion ticket opportunity in early purchases, excess baggage fee, and prestige effect were also considered effective in determining air travel demands and they are added to the model. The model equation created with the factors considered to be effective in the transition from alternative transportation modes to air travel is given below.

$$V_j = \text{Constant} + \beta_1 \text{Travel cost} + \beta_2 \text{Access\&Egress Time} + \beta_3 \text{Total travel time} + \beta_4 \text{Prestige} + \beta_5 \text{Purpose of the trip} + \beta_6 \text{Age} + \beta_7 \text{Marital status} + \beta_8 \text{Frequency} + \beta_9 \text{Occupation} + \beta_{10} \text{Household income} + \beta_{11} \text{Ease of Access} + \beta_{12} \text{Non-stop flight} + \beta_{13} \text{Promotional ticket for early purchase}$$

The second model used in the study was established to determine the factors affecting the choice of travel mode preferred among domestic intercities. The model equation is given below.

$$V_j = \text{Constant} + \beta_1 \text{Travel cost} + \beta_2 \text{Ease of Access to tickets} + \beta_3 \text{Ease of Access to airport} + \beta_4 \text{Ease of selecting the desired seat} + \beta_5 \text{Accuracy and swiftness of baggage operations} + \beta_6 \text{Excess baggage fee} + \beta_7 \text{Reliability of vehicle safety} + \beta_8 \text{Assisting passengers} + \beta_9 \text{Eligibility of Tariff} + \beta_{10} \text{In-vehicle entertainment} + \beta_{11} \text{Non-stop Access} + \beta_{12} \text{In-vehicle comfort} + \beta_{12} \text{Diversity and quality of catering} + \beta_{13} \text{Alternative travel modes} + \beta_{14} \text{Promotional ticket} + \beta_{15} \text{Free Movement} + \beta_{16} \text{Quick Access to airport} + \beta_{17} \text{Comfort} + \beta_{18} \text{Travel time} + \beta_{19} \text{Suitable for crowded travel}$$

Variables including; travel cost, ease of access to the ticket, ease of choosing the desired seat, complete and fast baggage procedures, excess baggage fee, reliability regarding the safety of the vehicle, attitude towards the passengers, tariff eligibility, in-vehicle entertainment, non-stop transportation, in-vehicle comfort, variety and quality of in-vehicle catering, presence of alternative modes of transportation on the line, availability of promotional tickets, presence of passenger's own freedom when traveling by personal vehicle, fast transportation to destination, comfort, travel time and eligibility of the related travel mode to crowded journeys (Chen, 2017) exists in the model that is performed through the related travel mode.

3.3. Data collection, study area, and descriptive statistics

3.3.1. Stated preference (SP) survey design

The survey consists of four parts. The questions about demographic characteristics are included in the first part. The second part includes the questions about participants' preference for the transportation mode and its reasons, and the third part includes questions related to the travel behaviors of the participants. In the fourth part, questions about the factors affecting the transition to air travel are

included. These factors are given as 5-point Likert scale expressions (1. I certainly disagree, 2. I disagree, 3. I am indecisive, 4. I agree, 5. I certainly agree). These expressions are given in Table 1.

Table 1: Expressions on factors affecting transition to flight

No	Expressions
1	I prefer the plane even if it is the same price as the bus.
2	If the flight ticket price is high up to 2 times the bus, I prefer the plane.
3	If the flight ticket price is high up to 3 times the bus, I prefer the plane.
4	I think traveling by plane brings dignity.
5	In case of easy transportation from the airport to the city center, I prefer the plane.
6	If the fees charged for excessive load are reasonable, I prefer the plane.
7	In case of non-stop flight to my destination, I prefer the plane.
8	In case of reduced baggage delivery and waiting times, I prefer the plane
9	I think that traveling by plane is preferred by people with status.
10	I prefer the plane only if the flight days and times are suitable for me
11	I prefer the plane in case the total travel time decreases from my home / workplace to my destination (point).
12	I think traveling by plane is prestigious.
13	In case of finding cheap tickets for early purchases, I prefer the plane.

In the study, the first expression will be stated as “The same price”, the second expression as “2 times the price”, the third expression as “3 times the price”, the fourth expression as “Respectability”, the fifth expression as “Ease of access to airport”, the sixth expression as “excess baggage fee”, the seventh expression “non-stop flight”, the eighth expression as “Luggage time”, the ninth statement as “Status”, the tenth expression as “Tariff eligibility”, the eleventh expression as “Total travel time”, the next statement as “Prestige”, the thirteenth expression as “Cheap tickets for early purchases”.

While preparing the survey questions, Temurlenk, 1991; Seo and Kim, 2003; Yaylalı and Dilek, 2009 scales were used. The questions that were not understood in the survey were corrected by making a pre-application (pilot study) in the cities.

3.3.2. Study area and sample

The population of the study consists of individuals residing in Kayseri and Bursa provinces. According to the 2018 census, the year in which the study was conducted, the population of Bursa is 2,994,521. This number reached 3.056.120 increasing by 2.1% in 2019. As it is mentioned before, Bursa is the fourth most populous city in Turkey. The share of Bursa in Turkey's total gross domestic product (GDP) is 4.2%, it ranks fourth in terms of GDP size. Kayseri had a population of 1,389,680 in 2018, and this increased 1.3% in 2019 to 1,407,409. In terms of population size, Kayseri ranks fifteenth. The share of Kayseri in Turkey's total GDP is 1.4%, it ranks thirteenth in terms of GDP size. While GDP per capita in Bursa is \$11,095 in 2018, this number is \$7,999 in Kayseri. Both cities are regarded as one of the most important trade, industry, and tourism centers in Turkey. There is a distance of 668.2 km between the two cities. The journey between the two cities takes about 8 hours by private car. There are daily bus services between the city pair and travel times reach up to 10 hours. Express bus service is not provided. Also, connecting train transportation is available.

Kayseri Erkilet Airport in the province of Kayseri is 5 km away from the city center. Transportation to the airport from the city center is provided by bus, taxi, and ground passenger services. Bursa Yenişehir

Airport, which is in use in the city of Bursa, is 50 km away from the city center and transportation is provided by bus and taxi.

Determining the Sample Size

The following formula was used to determine the sample size of the research (Akbulut and Yıldız, 1999):

$$n = \frac{NP(1 - P)Z^2}{(N - 1)d^2 + P(1 - P)Z^2}$$

(n: Sample size; N: Universe size; P: Possibility of traveling by plane; 1-P: Possibility of not traveling by plane; Z: Z test value at the level of (1- α); α : Significance level %; d: margin of error). To reach the largest sample volume, the probability of traveling / not traveling by plane is taken as 0.5. Sample sizes of 384 were considered sufficient for both provinces.

3.3.3. Data collection

In the research, surveys were conducted between January and March 2018. The convenience sampling method was used for sample selection. Considering that there may be incomplete and incorrect filling, 600 people were interviewed face-to-face in each province (in total 1200 people). No survey was applied to those who did not reside in these provinces. When missing and inconsistent surveys were removed, the survey data of 453 people in Bursa and 501 people in Kayseri were taken into calculation. The sample size included in the analysis is above 384, which was a sufficient number for each city.

4. Findings

4.1. Findings of Frequencies, Descriptives, and Factor Analysis

After excluding the survey data of 41 people in Kayseri and 49 people in Bursa, who mentioned that they have aviophobia (fear of flying by plane or other flying vehicles) and never travel by plane, the survey data of 404 people in Bursa and 460 people in Kayseri were analyzed.

Considering the findings of the basic variables, 48.3% (222 individuals) of the participants in Kayseri and 33.7% (136 individuals) in Bursa were between the ages of 31-42. The second largest group of participants was in the 19-30 age group, with a rate of 29.6% (136 individuals) in Kayseri and 28.5% (115 individuals) in Bursa. Most of the participants were university graduates (51.5%, 237) in Kayseri, and high school graduates (38.6%, 156) in Bursa. In Kayseri, workers and civil servants that gathered under the group of "non-agricultural workers" formed the majority (201 individuals, 43.7%). In Bursa, the participants who were gathered under the group of "professional occupational groups" constituted the majority (109 individuals, 27%). The majority of the participants (24.3%, 112 individuals) in Kayseri stated that they had more than 6001 TL household income. The majority of the participants in Bursa (28.2%; 114 individuals) had a household income in the range of 3001-4000 TL (between January 1 and March 31, 2018, the average exchange rate of 1 \$ is 3.85 TL according to the data of the Central Bank of the Republic of Turkey). These groups were followed by individuals with household income between 2001-3000 TL in both cities (Kayseri 20%; 92 individuals, Bursa 28%; 113 individuals).

Frequencies regarding the travel behavior of people residing in Kayseri and Bursa and who have the potential to travel by plane are shown in Table 4.

It was observed that 60.4% of the participants in Kayseri had traveled to Bursa and 71.3% of participants in Bursa had traveled to Kayseri before. Travel purposes of those participants were 41.4% for visiting relatives/friends, 19.8% for business purposes, and 17.2% for touristic purposes. 72% of those living in Kayseri and 50.5% of those living in Bursa stated that they had the possibility or willingness to travel the other city pair (Bursa or Kayseri) in the future. In addition, 72.3% of the participants in both cities stated that if there is a non-stop flight in the future, they will prefer the plane in their travels between these cities. The majority of the participants, 82.2%, were usually accompanied by someone in their

travels, 70.9% usually paid for the ticket themselves, 55.7% usually booked the ticket online, 74.5% reserved their ticket at least 1 month before and 89.1% did not have aviophobia

It was observed that 60.4% of the participants in Kayseri had traveled to Bursa and 71.3% of Bursa had travelled to Kayseri

The distribution of participants' transportation mode preference between Bursa-Kayseri is given in Table 2.

Table 2: Distribution of Transportation Mode Preference Between Bursa-Kayseri Cities

Transportation Mode	N	%
Bus	258	29,9
Train	10	1.2
Plane	226	26,2
Private vehicle/Somebody's own vehicle	370	49,5
Total	864	100

As seen in Table 2, the most preferred mode of transportation in mutual transportation between Bursa-Kayseri city pair, was the private vehicle/individual's personal vehicle (49.5%). The second most preferred mode of transportation was the bus (29.9%). The plane was in third place with 26.2%. The least preferred mode of transportation was the train with 1.2%. The reason behind these results was considered to be the long travel times.

Reliability and validity analyses were performed on the expressions that measure how much the participants shared the idea of using air travel instead of the alternative transportation modes. The internal consistency of the expressions in the scale was achieved during reliability analyses by calculating the most preferred "Cronbach's Alpha Coefficient" in the literature. Since Cronbach's Alpha (α) value of the scale consisting of 13 expressions for Kayseri and Bursa was 0.890 ($0.80 < \alpha < 1.00$), it was found to be highly reliable.

In this study, exploratory factor analysis was conducted to reveal the validity of the expressions that measure under which conditions to switch from alternative modes of transportation (bus, private vehicle, train) to the plane. Bartlett's Test (Bartlett's Test of Sphericity) and Keiser-Meyer-Olkin (KMO) test were used to determine whether the scale was convenient for factor analysis. KMO value was found to be 0.877 for Kayseri. For Bursa province, it was 0.881. The KMO value of over 0.800 means that the scale is perfectly convenient for factor analysis (Yaşlıoğlu, 2017, p.75-76). Bartlett's test reveals the statistical significance of the correlation matrix. Since Bartlett's value was ($p: .000 < 0.05$), it was found to be significant. The scale used is convenient for factor analysis.

In order to obtain interpretable, significant factors, the factors were rotated (rotation). As the aim of studies is to find the most appropriate number of independent factors even though it is almost impossible to find factors that are unrelated to each other in real life, varimax rotation which is an orthogonal method is generally accepted. (Yaşlıoğlu, 2017, p.78). In this respect, the Varimax method, which is a vertical rotation method, was used to rotate the factors in Kayseri and Bursa data sets. As a result of the analysis, the measurement expressions are distributed over 3 factors that measure attitudes about price, suitability/duration, and prestige as expected. The expressions collected under factors and factor loads for Kayseri province are given in Table 3, and in Table 4 for Bursa province.

Table 3: Expressions under factors and factor loadings (Kayseri)

Factors	Expression Sequence Number	Expressions	Factor Loads (Kayseri)
Expressions About Price	1.	The same price	,423

		2.	2 times the price	,886
		3.	3 times the price	,871
		5.	Ease of Access to airport	,816
		6.	Excess load fee	,817
		7.	Through non-stop flight	,845
Expressions About Convenience		8.	Luggage time	,869
		10.	Tariff eligibility	,790
		11.	Total travel time	,831
		13.	Cheap tickets for early purchases	,654
		4.	Respectability	,866
Expressions About Prestigious		9.	Statüs	,855
		12.	Prestige	,902

Table 4: Expressions under factors and factor loadings (Bursa)

Factors	Expression Sequence Number	Expressions	Factor Loads (Bursa)
Expressions About Price	2.	2 times the price	,902
	3.	3 times the price	,912
	5.	Ease of Access to airport	,851
Expressions About Convenience	1.	The same price*	,515
	6.	Excess load fee	,807
	7.	Through non-stop flight	,871
	8.	Luggage time	,842
	10.	Tariff eligibility	,787
	11.	Total travel time	,821
Expressions About Prestigious	4.	Respectability	,866
	9.	Status	,845
	12.	Prestige	,830

While “the same price” expression was thought to be under “price factor”, it was included under “convenience factor”. “Cheap tickets for early purchases” expression was removed from the analysis because the difference under the convenience (factor load 0.595) and price (factor load 0.505) factors and between the factor loads was less than 0.10.

The mean of the responses given to the expressions under the factors in Kayseri and Bursa provinces are given in Table 5.

Table 5: Averages of responses to the expressions under the factors (Bursa-Kayseri)

Expressions	Average (I) Kayseri	Average (II) Bursa
The same price	4,33	4,43
2 times the price	2,86	2,29
3 times the price	2,32	1,69
Respectability	2,68	2,80
Easy of Access to airport	3,33	3,88
Excess load fee	3,16	3,70
Through non-stop flight	3,55	3,85
Luggage time	3,28	3,66
Status	2,17	2,93
Tariff eligibility	3,14	3,77
Total travel time	3,31	3,85
Prestige	2,94	3,09
Cheap tickets for early purchases	3,95	-

The data presented in Table 5 indicate that participants in both cities (Kayseri 4.33; Bursa 4.43) will prefer the plane if it is the same price as the bus. As the plane ticket price increases, the rate of preferring the plane decreases. Particularly, the participants in Bursa stated that transportation from/to the airport is important in preferring the plane. This was considered to be due to difficulties in transportation to the airport. Particularly important in both cities, especially in Bursa, participants stated that they would prefer the plane in case of reasonable excess baggage fees, available non-stop transportation, short luggage waiting time, tariff eligibility, and short total travel time. The perception that traveling by plane was prestigious was not as high as expected. The reason for this is that in today's world, the plane is a means of transportation that people from every social class can reach. In addition, a high rate of participants (average 3.95) stated that they would prefer the plane if they could find cheap tickets at early purchases. As a matter of fact, the vast majority of the participants (see Table 4) stated that they reserved the ticket at least one week in advance. It is considered that there will be an increase in the preference for traveling by plane if there is a discount with campaigns for early purchases.

4.2. Findings related to Kayseri

4.2.1. Findings of Chi-square Tests

According to the results of chi-square tests;

There is a significant relationship between household income and transportation mode preference from Kayseri to Bursa (Pearson Chi-square: 22,252a; p 0.001). In all income groups, in the case of travels from Kayseri to Bursa, people stated that they would prefer private/personal vehicles in the first place

(49.1%; 226 people). 29.3% (135 people) stated that they would prefer the plane in the first place. The rate of preferring the bus decreases as household income increases.

There is a significant relationship between the participants' marital status and their flight preferences when traveling from Kayseri to Bursa (Pearson Chi-square: 14,823a; $p: 0.002$). While 26.2% of the married people stated that they would prefer the plane firstly when traveling from Kayseri to Bursa, it was observed that this rate was slightly higher in single people (35.5%).

Since Pearson Chi-square was ($p > 0.05$; $0.665 > 0.05$), no meaningful relationship has been found between the purpose of travel and the preference of transportation from Kayseri to Bursa.

Since the Pearson Chi-square value was ($p < 0.050$; $0.042 < 0.05$), there is a significant relationship between the participants' education level and the preference of transportation mode for their travels from Kayseri to Bursa. While 46.1% (82 people) of people with high school or lower education levels stated that they would prefer their private vehicle during travels from Kayseri to Bursa, 26.4% (47 people) preferred the bus, 25.8% (46 people) preferred the plane, 1.7% (3 people) preferred the train. The least preferred means of transportation in all education groups was the train. While the percentage of preference for private vehicles and planes increases with university and higher education level, the percentage of preference for the bus decreases. 65.9% of those who prefer the plane and 63.7% of those who prefer private/personal vehicle have a university or higher degree. 51.6% of those who prefer the bus have a high school or lower education level, 48.4% of them have university or higher education levels.

Since the Pearson Chi-square value was ($p < 0.050$; $0.040 < 0.05$), there is a significant relationship between the participants' age and the preference of transportation for their travels from Kayseri to Bursa. As the age increases, the rate of preferring the plane decreases; and while the rate of preferring the private vehicle increases up to the age of 55, it decreases in the age group of 55 and over.

Since the Pearson Chi-square value was ($p < 0.05$; $0.000 < 0.05$), there is a significant relationship between the participants' occupation and the preference of transportation mode. In terms of professional groups; 44.9% of students, housewives, and unemployed people preferred primarily plane, however, 66.7% of the self-employed, 51.4% of professional occupational groups, 75% of entrepreneurs and senior managers, and 47.8% of non-agricultural workers preferred private/personal vehicle.

Since values were found as Pearson Chi-square: 319,563a; $p: 0.000$; Pearson Chi-square: 109,589a; $p: 0.000$; Pearson Chi-square: 165,004a; $p: 0.000$, a significant relationship was found between the vehicle preference in journeys from Kayseri to Bursa and the reason for preference. During journeys from Kayseri to Bursa, primarily private/personal vehicle is preferred (49.1%; 226 people), then plane (29.3%; 135 people) and bus (19.8%; 91 people) are preferred. Those who prefer the bus primarily during travels from Kayseri to Bursa stated the reasonability of the ticket price/travel cost, the ease of access to the ticket, and the ease of access to the vehicle, respectively as the reasons for their preference. Those who prefer the plane primarily during travels from Kayseri to Bursa, stated non-stop transportation, in-vehicle comfort, and the suitability of the ticket price, respectively as the reason for their preference. The reasons for those who prefer their private/personal vehicle are freedom during the travel, the comfort in the vehicle, and the reliability in terms of vehicle safety.

4.2.2. Findings of ANOVA Analysis

According to the results of ANOVA Analysis;

It was concluded that there were significant differences between the participants' incomes and their price sensitivity (The same price: $p: 0,000 < 0.05$; 2 times the price: $0,000 < 0,05$; 3 times the price: $0.017 < 0.05$). It is concluded that as the price increases, sensitivity to price decreases.

Partially significant differences were found between the income groups and the expressions regarding the convenience. Ease of transportation from the airport ($p: 0.012 < 0.05$), non-stop flight ($p: 0.001 < 0.05$), total travel time ($p: 0.016 < 0.05$), cheap tickets for early purchases ($p: 0.033 < 0.05$) variables were significantly different between income groups. As the income increases, the participants pay more attention to these expressions in transition from other modes of transportation to the plane.

Partially significant differences were found between income groups and expressions about prestige (Reputation: $p. 0.031 < 0.05$; Status: $p. 0.297 > 0.05$; Prestige: $p. 0.815 > 0.05$). The ones whose household income is more than 5000TL shared the idea "I think traveling by plane brings reputation" more than those who have a household income between 3001-5000 TL.

There is a significant difference between the education level and the expressions related to the price (The same price: $p. 0,000 < 0.05$; 2 times the price: $p. 0,000 < 0.05$; 3 times the price: $p. 0.026 < 0.05$). Those who have a university or higher education level are less sensitive to price than those who have a high school or lower education level.

Since the values were $p < 0.05$ for all expressions, there was a significant difference between education level and expressions related to convenience. Those who have a university or higher education level stated that they agreed more with the expressions related to the "convenience factor".

Since the values were $p > 0.05$ for all expressions (Reputation: $p. 0.444 > 0.05$; Status: $p. 0.145 > 0.05$; Prestige: $0.416 > 0.05$), there was no significant difference between the educational status and the expressions related to prestige.

Since the values were $p > 0.05$ for all expressions (The same price: $p. 0.802$; 2 times the price: $p. 0.090$; 3 times the price: $p. 0.053$), there was no significant difference between the expressions related to occupation and price.

For all expressions the condition of $p < 0.05$ (transportation from the airport: $p. 0,000$; excess baggage fee: $p. 0,000$; non-stop flight: $0,000$; luggage time: $p. 0,000$; tariff eligibility: $p. 0.022$; total travel time: $p. 0,000$; cheap tickets for early purchases: $p. 0.003$) was met, thus, there was a significant difference between occupation and expressions related to convenience. Accordingly, the group of non-agricultural workers (including civil servants and workers) attached more importance to the factors related to convenience in terms of transition to traveling by plane.

The hypothesis stating "There is a significant difference between the occupation and the prestige factor." was partially accepted (reputation: $p. 0.042 < 0.05$; status: $p. 0.046 < 0.05$; prestige: $p. 0.112 > 0.05$). Entrepreneurs and senior managers agreed more with the expression "I think that traveling by plane is preferred by people of status." than non-agricultural group (including civil servants and workers). Again, entrepreneurs and senior managers agreed more with the expression "I think traveling by plane brings reputation." than the group called "other" (including agricultural sector employees, technicians, artisans, retirees, marketing and sales personnel, and members of the armed forces).

4.3. Findings related to Bursa

4.3.1. Findings of Chi-square tests

Since Pearson Chi-square was ($P < 0.05$; $0.000 < 0.05$), there was a significant relationship between education level and preference of transportation mode for traveling from Bursa to Kayseri. As the education level increases, the rate of preferring the plane increases by 160%. Unlike private vehicles and planes, the rate of preferring the bus decreases as the education level increases. While 61.5% of those who prefer the plane in travels from Bursa to Kayseri have a university or higher degree, 76.6% of those who prefer the bus have high school and lower education level.

Since Pearson Chi-square was ($P < 0.05$; $0.000 < 0.05$), there was a significant relationship between household income and preference of transportation mode for traveling from Bursa to Kayseri. As the income level increases, the rate of preferring the plane increases by 179.8%. However, as the income level increases, the rate of preferring the bus decreases. While those with an income level of 3000 TL and below prefer the bus and private vehicle in the first place, those with an income level of 3000 TL and above prefer private vehicle and plane, respectively.

Since Pearson Chi-square was ($P < 0.05$; $0.006 < 0.05$), there was a significant relationship between marital status and preference for transportation from Bursa to Kayseri. While 40.9% of the married people prefer private/personal vehicle, 39.1% prefer bus, 19.3% prefer airplane, 0.7% prefer train; 46.2% of singles prefer bus, 29.2% aircraft, 24.6% private/personal vehicles.

Since Pearson Chi-square was ($P > 0.05$; $0.362 < 0.05$), no significant relationship was found between age and preference for transportation from Bursa to Kayseri.

Since Pearson Chi-square was ($P < 0.05$; $0.003 < 0.05$), there was a significant relationship between occupation and preference of transportation from Bursa to Kayseri. Based on the mode of transportation, 29.3% of those who prefer bus belong to occupational groups called “other” (including agricultural sector workers, technicians, artisans, retirees, marketing and sales personnel, and members of the armed forces), 40.7% of those who prefer plane belong to professional occupational groups, 29.9% of those who prefer plane belong to professional occupational groups and 20.1% belong to occupational groups called “other”. 50% of those who prefer the train belong to professional occupational groups and 50% belong to occupational groups called "other".

Since the Pearson Chi-square was ($P > 0.05$; $0.348 > 0.05$), no significant relationship was found between purpose of travel and preference for transportation from Bursa to Kayseri (Pearson Chi-square 342,051a; p: ,000; Pearson Chi-square: 99,424a; p. ,000; Pearson Chi-square: 62,368a; p. ,000). The reasons of preference for those who prefer the plane primarily for traveling from Bursa to Kayseri are reasonable ticket price/travel cost, availability of TV and the internet, entertainment opportunities, and in-vehicle comfort, respectively. The reasons for those who prefer private/personal vehicle are having their own freedom during travel with the private vehicle, in-vehicle comfort, and reliability in terms of vehicle safety.

4.3.2. Findings of ANOVA Analysis

People whose household income is more than 3000 TL agreed more with the expressions related to convenience.

As the level of education increased, there was an insensitivity to the increases in plane ticket prices.

Since $p < 0.05$ condition was met for all expressions, it was concluded that there was a significant difference between educational status and expressions related to convenience. Individuals with university or higher levels of education agreed more with the expression related to convenience.

Table 6: Analysis of transition to plane in terms of occupation in case of easy transportation from the airport to the city center in Bursa province

(I) occupation	(J) occupation	Difference of Means (I-J)	Std. Error	p.	95% Confidence Interval	
					Lower limit	Upperlimit
Entrepreneurs and senior managers	Students, housewives and unemployed	0,48479	0,19962	0,241	-0,1315	1,1011
	Self-employed people	1,02220*	0,21126	0,000	0,3739	1,6705
	Other*	,97771*	0,1909	0,000	0,3854	1,57
	Professional occupational groups	0,45979	0,17019	0,151	-0,0839	1,0035
	Non-agricultural workers.	,82435*	0,18763	0,001	0,2396	1,4091

(I) occupation	(J) occupation	Difference of Means (I-J)	Std. Error	p.	95% Confidence Interval	
					Lower limit	Upperlimit
Professional occupational groups	Students, housewives and unemployed	0,02499	0,15437	1,000	-0,4374	0,4874
	Self-employed people	,56240*	0,16916	0,019	0,0534	1,0714
	Other*	,51791*	0,14292	0,006	0,0938	0,942
	Entrepreneurs and senior managers	-0,45979	0,17019	0,151	-1,0035	0,0839
	Non-agricultural workers.	0,36455	0,13851	0,131	-0,0477	0,7768

Other* Agricultural sector employees, technicians, craftsmen, retirees, marketing and sales personnel and members of the armed forces

According to Table 6, entrepreneurs and senior managers and professional occupational groups attach more importance to ease of transportation to/from the airport on transition to traveling by plane than the self-employed and occupational group called “other” (including agricultural sector employees, technicians, artisans, retirees, marketing and sales personnel and members of the armed forces). Entrepreneurs and senior managers also attach more importance to the aforementioned factor than non-agricultural employees (including civil servants and workers).

Table 7: Analysis of transition to air travel in terms of occupation in case of there are non-stop flights between Bursa and Kayseri

(I) occupation	(J) occupation	Difference of Means (I-J)	Std. Error	p.	95% Confidence Interval	
					Lower limit	Upperlimit
Entrepreneurs and senior managers	Students, housewives and unemployed	0,48479	0,19962	0,241	-0,1315	1,1011
	Self-employed people	1,02220*	0,21126	0,000	0,3739	1,6705
	Other*	,97771*	0,1909	0,000	0,3854	1,57
	Professional occupational groups	0,45979	0,17019	0,151	-0,0839	1,0035
	Non-agricultural workers	,82435*	0,18763	0,001	0,2396	1,4091

Other* Agricultural sector employees, technicians, craftsmen, retirees, marketing and sales personnel and members of the armed forces

According to Table 7, entrepreneurs and senior managers stated that they are more inclined to transition to air travel in case there are non-stop flights compared to the self-employed.

Table 8: Analysis of transition from alternative modes of transportation to air travel in case the total travel time of the participants decreases in Bursa.

(I) occupation	(J) occupation	Difference of Means (I-J)	Std. Error	p.	95% Confidence Interval	
					Lower limit	Upperlimit
Professional occupational groups	Students, housewives and the unemployed	0,30639	0,1582	0,562	-0,1687	0,7815
	Self-employed people	,69188*	0,17287	0,002	0,1704	1,2134
	Other*	,65176*	0,14905	0	0,2087	1,0948
	Entrepreneurs and senior managers	-0,30923	0,18914	0,785	-0,9229	0,3045
	Non-agricultural workers	,52574*	0,14493	0,006	0,0933	0,9582

Table 8 (continued): Analysis of transition from alternative modes of transportation to air travel in case the total travel time of the participants decreases in Bursa.

(I) occupation	(J) occupation	Difference of Means (I-J)	Std. Error	p.	95% Confidence Interval	
					Lower limit	Upperlimit
Entrepreneurs and senior managers	Students, housewives and the unemployed	0,61562	0,22318	0,118	-0,0775	1,3087
	Self-employed people	1,00111*	0,2338	0,001	0,2797	1,7226
	Other*	,96099*	0,21679	0,001	0,2855	1,6365
	Professional occupational groups	0,30923	0,18914	0,785	-0,3045	0,9229
	Non-agricultural workers	,83497*	0,21397	0,006	0,1657	1,5043

Other* Agricultural sector employees, technicians, craftsmen, retirees, marketing and sales personnel and members of the armed forces

According to Table 8, professional occupational groups and entrepreneurs and senior managers think that total travel time is an important factor in transition to air travel when compared to the self-employed and the group called "other". Professional occupational groups attach more importance to the aforementioned factor than non-agricultural employees.

Entrepreneurs and senior managers attach more importance to tariff eligibility on transition to air travel than self-employed and non-agricultural employees. Professional occupational groups attach more importance to the aforementioned factor than the group called "other".

According to the ANOVA test results of the expressions related to prestige that measure the conditions affecting the participants' transition from alternative modes of transportation to air travel, while there was a significant difference between the perception of 'traveling by plane is prestigious' and occupations ($p. 0.044 < 0.05$), there was no significant difference between the perceptions of 'traveling by plane is prestigious and 'traveling by plane is preferred by the people of status', and their occupations ($p. 0.535 > 0.05$; $p. 0.113 > 0.05$).

5. Discussion and conclusions

As a result of the statistical analysis, the most preferred travel mode between Bursa and Kayseri provinces was the private/ personal vehicle. The least preferred vehicle was the train. The most important factors in preferring the related travel mode were found to be the convenience of non-stop transportation and travel cost.

It was observed that the participants prefer their personal vehicles (49.9%) primarily for transportation between the two cities. Freedom of travel provided during the journey, the confidence in vehicle safety, and the availability of an economical option for crowded journeys might have been effective in this. Traveling by bus (29.9%) and by plane (26.2%) take the second and third place, respectively. The reasons why the plane took the third place may be listed as the absence of non-stop flight (transfer via Istanbul), loss of time between the airport and the city center in Bursa, luggage limitation, etc. As a matter of fact, the vast majority (72.3%) of the individuals participating in the research stated that "if

there were non-stop flights between two cities, they would prefer the plane.” In this case, it was considered that there is potential demand in case of non-stop flights between these cities.

In these travels, in order to choose the plane instead of the bus or the individual’s personal vehicle, the flight ticket price should be reasonable. If the ticket prices for the plane and the bus are the same, traveling by plane will be preferred, and if the price is 3 times higher, the demand will decrease. Travel cost and travel time increase the likelihood of passengers’ transition to air travel.

The results of the study showed that university graduates and single individuals preferred the plane more. It was observed that married individuals preferred the private vehicle more. It is recommended that family discounts will lead individuals to travel by plane. In terms of occupation, students, housewives, and the unemployed preferred the plane more. The reason for this may be that they do not pay the fee themselves. As age increases the preference rate of traveling by plane decreases. It is recommended to offer discounts suitable for young people with a relatively lower income level. It was observed that the majority of the entrepreneurs and senior managers (75%) prefer their own private vehicles. It can be said that comfort and freedom during travel are effective in this result. However, entrepreneurs and senior managers stated that in case of non-stop flights, they would prefer the plane.

Another important result obtained in the research was that there is a significant relationship between income and price sensitivity. The results of the study showed that as the income increases, the price sensitivity decreases, and in addition to this, the preference for air travel increases. Moreover, factors such as ease of transportation from the airport, presence of non-stop flights, total travel time, low baggage fee, and cheap tickets for early purchases were among the factors affecting preference for traveling by plane. However, the factors of reputation, status, and prestige were not considered to be effective in preferring the plane. On the other hand, entrepreneurs and senior managers among the occupational groups agreed more with the statement “traveling by plane is preferred by people of status” compared to the remaining occupational groups.

The vast majority of people who answered “plane” to the question ‘If you travel from Bursa to Kayseri, which mode of transportation do you prefer?’ explained their reasons as having a possibility of watching TV or movies and using the internet in the vehicle. Offering in-cabin entertainment services on domestic flights or allowing the passengers to benefit from this service with their own mobile phones and devices could be a recommendation to the Airline companies which give service on the Bursa-Kayseri flight line.

It is recommended that airlines reduce their costs and lower their ticket prices, as is the case with low-cost airline carriers. It is considered that digitizing (automation) processes from the entrance of the passenger to the airport to boarding the plane will reduce the cost of human resources. Furthermore, it may be recommended that governments do not charge for airport landing and accommodation. Another suggestion is the transition to regional planes, which are becoming popular in the world. Although unit costs (cost per passenger) are high in these aircrafts, maintenance, supply and operating costs are low. It is also known that these types of aircraft are suitable for short-haul flights.

It was considered that the demand for air travel will increase if the airline companies reduce their excess baggage fees or increase the free baggage allowance limit for passengers.

As a result of the study, “transportation to the airport” in Bursa was very crucial in determining the airline demand. It was considered that this was due to the difficulties experienced in transportation to the airport in Bursa. It would be appropriate for municipalities or public institutions to provide regular transportation services between the airport and the city center, and for ground services, or airline companies to provide transportation services to the airport. Another suggestion is to install a rail system from the city center to the airport. Thus, fast transportation to the airport will be provided.

The limitation of this study consists of the fact that it was applied only to one city pair. It was assumed that if this is applied to more city pairs, the method will produce more accurate information for state planners and airline enterprises by reaching generally accepted results.

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Arařtırma Makalesi

A Field Study Towards Determining The Factors That Affect Preferences For Travel Mode Between City Pairs in Turkey

Türkiye’de Őehir Çiftleri Arasında Ulaşım Türü Tercihini Etkileyen Faktörleri Belirlemeye Yönelik Bir Alan Çalışması

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Geniřletilmiş Özet

Türkiye’de özellikle 2003 yılında havacılık sektöründeki serbestleşmenin ardından havayolu işletmelerine pazara giriş, uçuş hatları ve güzergahlar üzerindeki engellerin kalkmasıyla birlikte sektörde rekabet artmıştır. Türkiye’de havayolu ile taşınan yolcu sayısında 2003’ten bu yana taşınan iç hat yolcu sayısında önemli artışlar görülse de, yurtiçi yolcu taşımacılığın yaklaşık %90’lık büyük bir bölümü karayolu üzerinden gerçekleşmektedir. İç hat havayolu taşımacılığının payı ise 2017 yılında %9 civarlarında seyretmiştir. Türkiye’nin dađlık ve engebelik yapısı, geniş yüz ölçümü nedeniyle karayolu ile ulaşım uzun yolculuk süreleri ve zorlu koşullarda gerçekleşmektedir. Yurtiçinde havayolu ulaşımının payının artmasıyla birlikte yolculuk süreleri büyük oranda kısılacaktır.

Türkiye’deki havayolu işletmelerinin çoğunluğu ana merkez olarak İstanbul’u kullanmaktadır. İstanbul’dan ülkedeki hemen her havalimanına yurtiçi aktarmasız uçuşlar mevcuttur. Havayolu işletmelerinin kullandığı diđer uçuş merkezleri ise; Ankara, Antalya ve İzmir’dir.

Türkiye’de ana merkezlerden yapılan uçuşlar haricinde uçuşlar, diđer adıyla çapraz uçuşlar ise çok az sayıda nokta arasında yapılmaktadır. Ana merkezler haricindeki noktalar arasındaki uçuşlar bağlantılı uçuşlarla gerçekleştirilmektedir. Bağlantılı uçuşlar, uzun aktarma (bekleme) süreleri ve yüksek bilet fiyatlarından dolayı cazip gelmemektedir.

Bu çalışma ile iki şehir arasında aktarmasız uçuş konulmasının hava taşımacılığı ve diđer taşımacılık türleri üzerindeki etkisi seyahat maliyeti, aşırı yük ücreti, seyahat süresi, aracın güvenilirliği ve prestij gibi deđişkenler üzerinden belirlenmeye çalışılmıştır. Bu amaçla, Bursa ve Kayseri şehirleri uygulama yapılacak şehir çifti olarak seçilmiştir.

Literatürde yolcularının ulaşım türü tercihi ve uçađa geçişe etkili olan faktörlere deđinen çalışmalar mevcut olup, aralarında aktarmasız uçuş bulunmayan hatları inceleyen çalışmalar az sayıdadır. Hava ulaşımına olan talebin artmasına paralel olarak rekabetin artması, havayolu firmalarını potansiyel yolcuların istek ve ihtiyaçlarına yönelik strateji geliřtirmeye yöneltmektedir. Bu bakımından talebi etkileyen faktörlerin bilinmesi havayolu firmaları açısından önem arz etmektedir. Bu çalışmanın aktarmasız uçuş bulunmayan yurtiçi hatlara uçuş koymayı düşünen havayolu firmaları ve planlayıcılara yol göstermesi açısından önemli olduđu düşünülmektedir.

Modelde ilgili seyahat moduyla yapılan seyahatlerde seyahat maliyeti, bilete ulaşım kolaylığı, istenilen koltuđu seçmenin kolaylığı, bagaj işlemlerinin eksiksiz ve hızlı yapılması, fazla bagaj ücreti, aracın emniyetli olduđuna dair güvenilirlik, yolculara karşı tutum, tarife uygunluğu, araç içi eğlence, aktarmasız ulaşım, araç içi konfor, araç içi ikramların çeşitliliđi ve kalitesi, ilgili hatta alternatif ulaşım

modlarının varlıđı, promosyonlu bilet olup olmaması, araçla seyahatte yolcunun kendi serbestliđinin (özgürlüđünün) olması, varış yerine hızlı ulaşım, konfor, seyahat süresi ve ilgili seyahat modunun kalabalık seyahat için uygun olması (Chen, 2017) deđişkenleri bulunmaktadır. Yapılan istatistiki analizler sonucunda, Bursa ve Kayseri şehirleri arasında en fazla tercih edilen seyahat modu özel araç/kişinin kendi aracı çıkmıştır. En az tercih edilen araç ise trendir. İlgili seyahat modunu tercih etmede en önemli etkenler aktarmasız ulaşım ile seyahat maliyetinin uygunluđu olarak bulunmuştur.

Katılımcıların hali hazırda iki şehir arasında ulaşımında en fazla (%49,9) kendi aracını tercih ettiđi görülmektedir. Bunda seyahatte serbestlik sağlaması, aracın emniyetli olduđuna dair güven ile kalabalık seyahatlerde ekonomik bir seçenek sunması etkili olmuş olabilir. İkinci sırada otobüs (%29,9) ve üçüncü sırada (%26,2) uçak gelmektedir. Uçađın üçüncü sırada yer almasında aktarmasız uçuşun olmaması (İstanbul üzerinden aktarmalı oluşu), Bursa'da havaalanı ile şehir merkezi arasında zaman kaybı, bagaj sınırlaması vb. faktörler etkili olabilir. Nitekim, araştırmaya katılan bireylerin büyük bir çođunluđu (%72,3) gelecekte her iki şehir arasında aktarmasız uçak seferleri konulması halinde uçađı tercih edeceđini belirtmiştir. Bu durumda, bu şehirler arasında aktarmasız uçuş olması halinde potansiyel talebin varolduđu söylenebilir.

Bu seyahatlerde otobüs veya kişinin kendi aracı yerine uçađın tercih edilebilmesi için uçak bilet fiyatının uygun olması gerekmektedir. Nitekim otobüs fiyatlarının aynı olması durumunda uçakla seyahatin tercih edileceđi, fiyatın 3 katına çıkması durumunda talebin düşeceđi görülmektedir. Seyahat maliyeti ve seyahat süresi yolcuların uçađa geçme olasılıđını arttırmaktadır.

Çalıřmada, üniversite mezunları ve bekar olan bireylerin uçađı daha fazla tercih ettiđi görülmüştür. Meslek açısından bakıldığında ise öğrenci, ev hanımı ve işsizlerin uçađı daha fazla tercih ettikleri görülmüştür. Bunun sebebi olarak ücreti kendilerinin ödememesi gösterilebilir. Ayrıca, çalıřmada evli bireylerin seyahatlerinde özel araç/kendi araçlarını daha fazla tercih ettikleri görülmüştür. Bunun bir nedeni de özel araç/kişinin kendi aracıyla seyahatin kalabalık yolculuklara olanak vermesidir. Havayolu işletmelerine aile indirimleri uyguladıkları takdirde evli bireyleri uçađa yöneltebilecekleri önerisinde bulunmaktadır. Yaş arttıkça uçađı tercih etme oranı azalmaktadır. Bu nedenle göreceli olarak düşük gelir seviyesine sahip genç bireylere uygun fiyat indirimlerinin sunulması önerilmektedir. Giriřimci ve üst düzey yöneticilerin büyük çođunluđunun ise (%75'i) kendi özel aracını tercih ettiđi görülmektedir. Bunda konfor ve seyahatte serbestliđin etkili olduđu söylenebilir. Ancak, girişimci ve üst düzey yöneticiler aktarmasız uçuş olması durumunda uçađa geçeceđini belirtmiştir.

Araştırmada elde edilen bir diđer önemli sonuç da, gelir ile fiyata duyarlılık arasında anlamlı bir iliřkinin olduđudur. Gelir arttıkça fiyata duyarlılıđın azaldıđı, bununla birlikte uçak tercihinin arttıđı görülmüştür. Ayrıca havalimanından ulaşım kolaylıđı, aktarmasız uçuş, toplam seyahat süresi, bagaj ücretinin düşüklüđu, erken alımlarda ucuz bilet bulabilme faktörleri uçak tercihinde etkili olan faktörler arasında yer almıştır. Buna karşın saygınlık, statü ve prestij sağlama faktörlerinin uçak tercihinde etkili olmadığı söylenebilir. Yalnız, meslek grupları içerisinde “uçakla seyahati statü sahibi kişilerin tercih ettiđi” ifadesine girişimci ve üst düzey yöneticilerin kalan meslek gruplarına göre daha fazla katıldıkları görülmüştür.

Bursa'dan Kayseri'ye seyahat edecek olursanız hangi ulaşım türünü tercih edersiniz sorusuna uçak diyenlerin büyük bir çođunluđu neden olarak “araç içinde TV, internet, film izleme imkanı olması” cevabını vermişlerdir. Bursa-Kayseri hattında havayolu şirketlerinin iç hat uçuşlarda da kabin içi eğlence hizmeti sunmaları veya yolcuların kendi cep telefonu, cihazlarıyla bu hizmetten faydalanmalarına olanak verilmesi önerilmektedir.

Havayolu şirketlerinin düşük maliyetli havayolu taşıyıcılarında olduđu gibi maliyetlerini düşürüp bilet fiyatlarını düşürmeleri önerilmektedir. Yolcunun havalimanına girişinden uçađa binışine kadar olan süreçleri sayısallaştırmanın (otomasyon) insan kaynađı maliyetini azaltacađı düşünülmektedir. Ayrıca, devletin havalimanlarına konma ve konaklama ücretleri almaması da önerilerden biridir. Bir diđer öneri, Dünya'da yönelim olan bölgesel uçaklara geçiştir. Bu uçaklarda birim maliyetleri (yolcu başı maliyet) her ne kadar yüksek olsa da bakım, ikmal ve işletme maliyetleri düşüktür. Ayrıca bu tip uçakların kısa mesafeli uçuşlara uygun olduđu bilinmektedir.

Havayolu şirketlerinin aşırı yük ücretlerini düşürmeleri veya yolculara daha fazla yük miktarından muafiyet tanımları durumunda uçakla seyahate olan talebin artacađı görülmektedir.

Çalıřmanın sonucunda, Bursa’da “havalimanına ulařım” havayolu talebini belirlemede çok önemli çıkmıřtır. Bunun sebebinin Bursa’da havalimana ulařım güçlüklerinden kaynaklandıđı düşünölmektedir. Belediye veya kamu kurumlarının havalimanı ve řehir merkezi arasında düzenli ulařım hizmeti sunması, yer hizmetleri veya havayolu řirketlerinin yine havalimanına ulařım hizmeti sunması uygun olacaktır. Bir bařka öneri ise, řehir merkezinden havalimanına raylı sistem kurulmasıdır. Böylelikle havalimanına hızlı bir ulařım sađlanacađı düşünölmektedir.

Bu çalıřmanın kısıtı bir řehir çiftine uygulanmıř olmasıdır. Daha fazla řehir çiftine uygulandıđı takdirde genel geçer sonuçlara ulařarak devlet planlayıcıları ve havayolu iřletmelerine daha dođru bilgiler üreteceđi varsayılmaktadır.