
RELIGION AND TOURISM IN TURKEY: AN ECONOMICALLY EMPIRICAL STUDY*

Fatih ÇAKMAK¹

Serkan DİLEK²

Abstract

People prefer to consume products and services that do not violate their religious beliefs. On the other hand, this tendency has particularly influenced their preferences and activities in the spheres of banking, food, and tourism. The Halal concept, which is important for Muslims, is particularly salient in the context of tourism. This study examines the impacts Muslim tourists and non-Muslim tourists have on Turkey's tourism income by using regression analysis. This study focuses on the period between 1996 and 2015. The study also compares the impacts Arab tourists and non-Arab tourists have on Turkey's tourism income. The results reveal that Muslim tourists contribute less to Turkey's tourism income than their non-Muslim counterparts. On the other hand, we have also found that Arab tourists contribute more to Turkey's tourism income than non-Arab tourists.

Keywords: *Tourism Income, Muslim Tourist, Arab Tourist, Halal*

JEL Classification: Z30, C10, C22

TÜRKİYE'DE TURİZM VE İNANÇ: İKTİSADİ AÇIDAN AMPİRİK BİR ÇALIŞMA

Öz

İnsanlar inançlarını ihlal etmeyen yan ürünler ve hizmetler tüketmeyi tercih etmektedirler. Bu durum bankacılık, gıda ve turizm sektöründe açıkça etkisini göstermiştir. Müslümanlar için önemli olan Helal kavramı, özellikle turizm bağlamında son zamanlarda dikkat çeken bir husustur. Bu çalışma 1996 ve 2015 yılları arasındaki döneme odaklanarak Müslüman ve gayrimüslim turistlerin Türkiye'nin turizm gelirleri üzerindeki etkilerini regresyon analizini kullanarak incelemektedir. Çalışma aynı zamanda Arap turistlerin ve Arap olmayan turistlerin Türkiye turizm geliri üzerindeki etkilerini de karşılaştırmaktadır. Sonuçlar, Müslüman turistlerin Müslüman olmayan meslektaşlarına göre Türkiye turizm gelirine daha az katkıda bulunduğunu ortaya koymaktadır. Öte yandan, Arap turistlerini, Arap olmayan turistlere göre Türkiye turizm gelirine daha fazla katkıda bulunduğu tespit edilmiştir.

Anahtar Kelimeler: *Turizm Geliri, Müslüman Turist, Arap Turist, Helal*

JEL Sınıflandırması: Z30, C10, C22

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¹ Ast. Prof., Kastamonu University, Faculty of Economics and Administrative Sciences, Department of Business Administration, fcakmak@kastamonu.edu.tr, ORCID: 0000-0003-4439-0242

² Assoc. Prof., Kastamonu University, Faculty of Economics and Administrative Sciences, Department of Economics, sdilek@kastamonu.edu.tr, ORCID: 0000-0002-0393-4509

1. Introduction

Tourism contributes significantly to Turkey's gross national product (GNP); in fact, its annual output exceeds 20 billion US Dollars (USD). Turkey has also been a significant center for tourism at the global level since the 1980s (Çimat and Bahar, 2003). Turkey's tourism industry has even more potential for growth thanks to its natural beauty and distinct demographic and social characteristics. This potential for growth has in turn intensified competition within the tourism industry. Therefore, it is all the more important to address this potential in an efficient manner. To this end, it is important to carefully study the tourist population in Turkey; it is especially important to identify the kind of tourists who visit Turkey on a frequent basis. In addition, it is also important to invest in a manner that will appeal to these frequent visitors. Doing so would drive Turkey's economy and increase its GNP. This can be accomplished by creating new tourist destinations and opportunities, especially for qualified tourists with high spending capacity.

According to a report published by the World Tourism Organization (UNWTO) in February 2016, Turkey ranked sixth among the top tourist destinations in the world for the year 2014. The report also ranked Turkey eleventh in terms of revenue generated through tourism. As per the report, the average tourism income per visitor stood at 1100 \$ in 2014, and Turkey's average tourism income per visitor was 828 \$. On the other hand, the following countries earned more than the global average: the US (2,371 \$), Thailand (1,551 \$), and the UK (1,388 \$).

According to the Turkish Statistical Institute (TUIK), as of 2015, the most number of foreign tourists to Turkey came from the following countries: Germany (13.4%), Russia (8.8%), and England (6.1%) (TUIK, 2016). Moreover, the UNWTO's February 2016 report also states that Tunisian tourists in Turkey typically spent the highest (1,715 \$), followed by the British (691 \$), the Germans (632 \$), and Russians (521 \$). It is also interesting to note that Muslim tourists from foreign countries spend a significant amount of money in Turkey. This is all the more salient since Muslims constitute approximately 23% of the world's population (Henderson, 2010:246). Therefore, it is necessary to identify the needs of Muslim tourists and invest in addressing those needs in order to capitalize on their significance. Religion is known to be one of the most important factors in attracting tourists—it influences a believer's preferences and activities (Battour et.al, 2010). For instance, Jews generally abide by the regulations of Kashrut (dietary law), and those who do consume only kosher foods (Masoudi, 1993). All Muslims should make pilgrimage to holy city Mecca at least once in a life time (Henderson, 2011). Similarly, Muslim tourists typically abide by Sharia law (Battour et.al; 2011; Henderson, 2010). Millions of tourists abide by religious laws and regulations, and large number of hotels caters to these tourists (Henderson, 2010).

Muslims typically abide by Islamic law, which represents the religious principles of Islam. Islamic law is essentially based on two sources: the Quran and Sunnah. The latter represents the sayings and teachings of Prophet Muhammad, and is transmitted orally (Sriprasert et.al, 2014). Islamic law, or Sharia, regulates the everyday behavior of Muslims (Henderson, 2010). Muslims are expected to abide by Sharia and consume Sharia-compliant products—including food, cosmetics, and vaccines, among other things—even while traveling. The word "Halal" refers to a Muslim's compliance to Islamic law; in Arabic it literally means "permissible" (Sriprasert et.al, 2014). Therefore, one way to attract Muslim tourists is to encourage hotels to adopt Sharia-compliant practices (Mohsin et.al, 2016). This has paved the way for the emergence of such concepts and practices as Halal tourism.

Halal tourism is not an entirely recent phenomenon; it can be traced to the early days of Islamic civilizations (Gohary, 2016:125). However, it has received scholarly attention only recently. Researchers define Halal tourism in different manners. Some argue that Halal tourism is a practice mainly based on compliance to Islamic law (Mohsin et.al, 2016; Dilek and Çakmak, 2017). The popularity and importance of Halal tourism continues to increase (Eid, 2015:250), and this presents great opportunities for countries and entrepreneurs. Halal tourism is especially salient for Muslims who follow an Islamic lifestyle and abide by Islamic law (Kamarudin and Ismail, 2014). Muslims

travel for a variety of reasons. Devout Muslims undertake a pilgrimage to Mecca (Umrah and Hajj); they may also travel in order to discover local Islamic traditions, to gain more knowledge, or to ponder the wonders of God's creation (Gohary, 2016). According to Samori et.al (2016:134) in order for a hotel to be Halal, it must not serve alcohol; it must serve Halal food, have the Qiblah signage, prayer mats, and bidets. A Halal hotel must also have separate recreation facilities for men and women. Another essential condition is that it should not provide adult entertainment (ibid). Battour et.al. (2014) states that Islamic attributes of destinations are also important factors affect decisions of Muslim tourists.

Turkey's tourism revenue has steadily increased over the last two decades. As a result, Turkey's tourism industry has contributed significantly to its GDP. Another consequence of the rise of Turkey's tourism industry has been the emergence of Research and Development (R&D) initiatives in the tourism sector. R&D initiatives are particularly important in order to identify tourists' needs based on their nationalities. Doing so enables a host country to cater to the specific needs of tourists, and this may in turn improve the country's tourism revenue.

This study aims to identify the significance of religious tourism in Turkey; more specifically, it focuses on the ways in Muslim tourists and non-Muslim tourists shape Turkey's tourism industry. The study also focuses on the preferences and activities of tourists who visit Turkey from Europe, the Arabian Peninsula, and Africa; in particular, it seeks to identify the ways in which these tourists influence Turkey's tourism revenue. By doing so, this study aims to throw light on the economic significance of addressing the distinct travel needs and preferences of Muslim tourists.

2. Literature Review

Zamani and Farahani (2010) focus on the factors that drive the development of the tourism sector in Islamic countries. They examine the relationship between Islam and tourism, and their analysis pertains to elements such as politics in the context of tourism, management, marketing, and community participation. Riyad Eid and Hatem El-Gohary (2014) have developed the Muslim Tourist Detection Value (MTPV), a scale which consists of 24 items, which in turn are divided into six dimensions: quality, price, emotional, social, physical, and non-Islamic physical attributes. The scale was developed using a multidimensional method. The correctness of the scale was determined by it against a sample of 537 Muslim tourists. By using this scale, the authors have also identified a range of operative factors that make tourism firms more competitive in a dynamic market.

Battour et al. (2011) argue that it is feasible to base Halal tourist packages on the distinct qualities of Islamic destinations. Qualitative data was obtained from two focus group discussions and 53 interviews conducted in Malaysia. The authors thus identified two of the most important factors for Muslim tourists: worship facilities and Halal food. In addition, the authors also suggest ways to satisfy the distinct needs and preferences of Muslim tourists.

Jafari and Scott (2014) seek to introduce certain Islamic concepts and practices to non-Muslim tourists. To this end, they explore the feasibility of introducing academic courses on tourism. They argue that doing so would enable scholars to develop new perspectives about tourism. Their study also seeks to understand the behavior patterns and needs of Muslim tourists. Especially, it is stated that Muslim world can offer new insights and opportunities. Riyadh's study (2015) seeks to define the dimensions of the Muslim Customer Perception Value (MCPV). The study also seeks to identify the links between the scale and factors such as customer satisfaction, customer loyalty, and Muslim customer retention. It also aims to develop and analyze a conceptual model for tourism based on the results obtained by applying the MCPV. The study is based on 221 samples, and it also involves 13 hypotheses. An exploratory and confirmatory factor analysis was conducted in order to test the validity of the measurements. The hypotheses were tested using structural equation models. The results show that the features of the proposed MCPV model are very instrumental in gaining the loyalty of Muslim tourists. In particular, the results show that that the

value of the proposed Islamic qualities, together with the conventional value dimensions, are instrumental in satisfying Muslim tourists who opt for a tourist package.

Seongseop et al. (2015) focus on the rapidly increasing number of foreign Muslim tourists in Korea. They argue that, compared to Chinese Muslim tourists, their Malaysian counterparts were more likely to be considered a target brand by Korea. In addition, the authors argue that Japan outdoes Korea in terms of brand image. Korea, however, fares better than Japan in terms of Muslim cultural reach, a factor that constitutes brand image in this context. Korea stood somewhere between China and Japan in terms of loyalty, emotional attributes, and brand awareness. Participants also revealed that they felt closer to China than Koreans living in Korea. A key finding of this research is that Malaysian Muslim tourists have distinct tourism needs and preferences, which in turn influence their tourist activities. Their distinct needs and preferences are attributed to the unique socio-demographic characteristics of Malaysia.

Egresi et al. (2014) aims to evaluate the impact of religious tourism development on the local community and economy. The effect is found mainly positive in this paper. In addition, it was found in the study that the development of religious tourism led to the creation of many new jobs.

Tekin (2014) examines the relationship between Islam and tourism. In particular, the author focuses on conservative Muslim tourists in order to examine the relationship between Islam and tourism. He seeks to identify the structural features of Islamic tourism firms. In addition, the author focuses on Islamic tourism in the contexts of Turkey's tourism industry and the global tourism industry. Tekin states that the growing Turkish tourism market will continue to attract a large number of tourists, which in turn would increase the country's tourism revenue. The author contends that Turkey can further improve its status as a major tourist destination by creating new, appropriate, and feasible opportunities for tourism.

Dilek and Çakmak (2017) conducted a survey in order to identify the ways in which tourists who visited Kastamonu perceived Halal tourism. They found that these tourists typically preferred the following kind of hotel: hotels that served Halal foods, but not alcohol and pork. Interestingly, the study also revealed that tourists who identified themselves as politically conservative were more interested in Halal tourism. Rahim et.al (2015) argue that the following three factors influence the perceptions and awareness of Muslim consumers who prefer Halal cosmetics and personal care products: advertising, knowledge, and attitudes.

Graave et al. (2017) examine the economic impact of pilgrimage to Santiago de Compostela in the NUTS 2 region Galicia (Spain) in 2010. This study points out that even in the most conservative scenario, the impact of pilgrimage is significant on the local economy of Galicia.

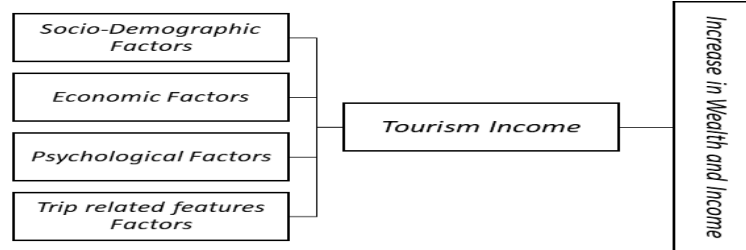
Murti (2017) argues that Muslims typically prefer Sharia-compliant products and services. As of 2015, Muslim consumers spent an estimated 2 trillion \$ on Halal products and services. This number is expected to grow in the future. Kandemir and Gökbeşe (2017) conducted a focus group interview in order to study the potential for Halal tourism in Kastamonu city. They found that the main problem affecting Halal tourism in the region was the lack of publicity and advertisements. Many Turkish cities, including Kastamonu, have embraced Halal tourism, but they are not advertised in an effective manner.

3. Number of Tourists and Tourism Income

For host countries, tourism income is more important than the number of tourists who visit the country. Although Turkey is the sixth most visited country in the world, it ranks tenth in terms of tourism income, or revenue generated through tourism (http://www.tuik.gov.tr/basinOdasi/haberler/2017_08_20170215.pdf). Therefore, it is as important for Turkey to convince tourists to spend more money as it is to attract richer tourists. The factors that influence tourist expenditures can be classified into four groups: socio-demographic factors (age, gender, education, etc.), economic factors (income), psychological

factors (motivations and preferences), and trip-specific factors (duration of stay, type of accommodation, etc.) (Marrocu et.al. 2015; Wang and Davidson, 2010b). Creating new opportunities for tourism enables a host country to increase its total income and wealth (Hung et.al. 2013; Unur, 2004).

Figure 1: Tourism Income and Economic Results



Socio-Demographic Factors: Several studies have focused on the ways in which factors such as age, gender, and marital status influence tourists' expenditure (Sanchez et.al, 2013; Wang and Davidson, 2010a). Studies that focus on economic factors, however, have been unable to arrive at a consensus about the impact of marital status on tourists' expenditure (Wang and Davidson, 2010b:516). However, most studies agree that age, household size, and education determine tourists' expenditure (Juan and Fransisko, 2005).

Economic Factors: A tourist's capacity to spend depends on the prices of commodities and services at the tourist destination as well as his or her income (Hung et.al, 2013; Juan and Fransisko, 2005; Seiler et.al, 2003; Wang and Davidson, 2010b). The income elasticity of demand is generally high (Wang and Davidson, 2010b). However, some studies argue that tourists' incomes do not influence their spending capacity in any significant manner (Tavares et.al. 2016).

Psychological Factors: Psychological factors include travelers' evaluation of a trip as well as their psychological characteristics, motives, and tastes (Wang and Davidson, 2010a).

Trip-Specific Factors: These include variables such as the number of people planning a trip as well as the intended and actual duration of a trip. Whether one is a first-time visitor or a repeat visitor and the type of accommodation are also factors that influence tourists' expenditure (Hung et.al, 2013; Tavares et.al, 2016; Wang and Davidson, 2010b; Sanchez et.al, 2013). As the size of a traveling party increases, the tourism spending per capita decreases (Wang and Davidson, 2010b). The duration of stay is a particularly important factor. As the duration of stay increases, the total spending also increase; however, the daily touristic expenditure decreases (Seiler et.al, 2003; Wang and Davidson, 2010b, Sanchez et.al, 2013). According to Seiler (2003), household income determines duration of stay, and duration of stay determines touristic spending. In addition, tourists who travel alone spend tend to spend more during trips (Tavares et.al, 2016).

As per most empirical studies, satisfied tourists tend to spend more (Wang and Davidson, 2010a; Unal et. al, 2014). In addition, tourism also plays an important role in regional development (Sriprasert et.al, 2014; Kamarudin and Ismail, 2014) and drives economic growth.

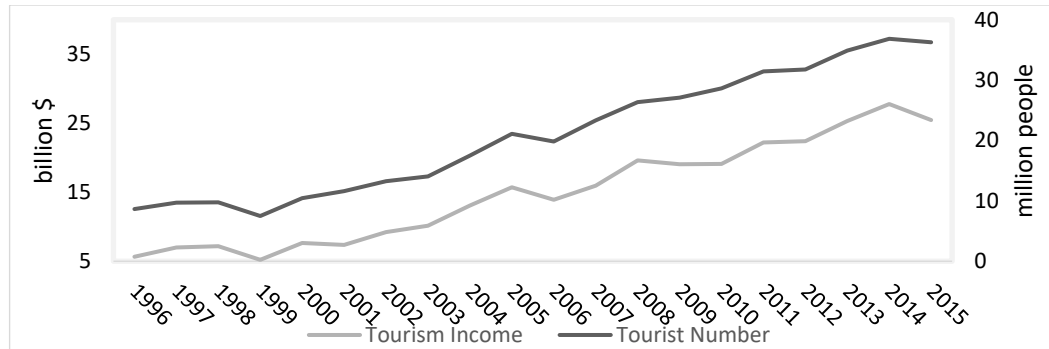
4. Structural Features of Turkey's Tourism Industry

It can be argued that Turkey's tourism industry was revived in 1983. In this way Turkey has attracted a large number of tourists, and its tourism revenue has also increased significantly (Aktaş, 2005). Since 1980, Turkish policy makers have focused on international tourism, especially given its capacity to drive economic development and growth (Akkemik, 2012:791).

Turkey is an important international tourist destination, and it typically attracts a very high number of international tourists. As Figure 2 shows, the number of foreign tourists who visited Turkey in 1996 was around 8 million, whereas it increased to 36 million in 2015. During the same period, the annual tourism income also increased manifold, from \$5 billion to over \$25 billion.

While the number of tourists increased between 2008 and 2010, Turkey's tourism income stagnated. One reasons for this stagnation is the decrease in the number of wealthy tourists, or tourists from the high income group.

Figure 2: Distribution of Foreign Visitors and tourism income to Turkey by Years (1996-2015)



Source: TURKSTAT Tourism Statistics, 2016

Table 1: Number of Foreign Tourists in Turkey (2014–2016)

Nationality	YEARS			NATIONALITY SHARE (%)			% CHANGE RATE	
	2014	2015	2016	2014	2015	2016	<u>2015/2014</u> 4	<u>2016/2015</u> 5
Europe OECD	16 376 814	15 870 330	10 352 977	44,46	43,79	40,84	-3,09	-34,77
Total OECD	18 047 633	17 498 852	11 204 225	48,99	48,28	44,19	-3,04	-35,97
Total Europe	19 443 455	19 102 424	13 161 876	52,78	52,70	51,92	-1,75	-31,10
Com.Wea.Nations	8 850 923	8 134 242	5 670 686	24,03	22,44	22,37	-8,10	-30,29
Total Africa	888 107	885 887	666 733	2,41	2,44	2,63	-0,25	-24,74
Total West Asia	3 377 008	3 563 993	2 505 651	9,17	9,83	9,88	5,54	-29,70
Total South. Asia	2 331 648	2 596 932	2 282 126	6,33	7,17	9,00	11,38	-12,12
Total Asia	5 708 656	6 160 925	4 787 777	15,50	17,00	18,89	7,92	-22,29
Total	36 837 900	36 244 632	25 352 213	100,0	100,0	100,0	-1,61	-30,05

Source:(TÜRSAB), 2017

Table 1 shows that European tourists represent more than half the number of the total tourists who visited Turkey between 2014 and 2016. This is not entirely surprising since Turkey is easily accessible through Europe. In addition, Turkey also has what are called sea-sand-sun opportunities; the diversity of visiting tourists creates a price-quality relationship in Turkey, and the country also

represents nearly a half of the world's travel market (Demir, 2010). Additionally, tourists from the Commonwealth of Independent States also visit Turkey in large numbers.

Table 2: Number of Tourists Coming to Turkey from the Organization of Islamic Cooperation (OIC) Member Countries and Their Ranking

	1996	A-1996 Rank	2005	B-2005 Rank	2015	C-2015 Rank
Iran	379.003	1	957.245	↔ 1	1.700.385	1 ↔
Iraq	14.137	12	107.968	↓ 4	1.094 .144	2 ↑
Syria	92.033	3	288.626	↔ 3	847.275	3 ↔
Azerbaijan	100.249	2	411.652	↔ 2	602.488	4 ↓
Saudi Arabia	22.042	9	36.328	↓ 12	450.674	5 ↑
Kazakhstan	31.373	5	106.196	↔ 5	423.744	6 ↓
Libya	5.298	16	29.319	↑ 15	234.762	7 ↑
Lebanon	23.782	7	41.074	↓ 11	197.552	8 ↑
Kuwait	858	28	11.086	↑ 20	174.486	9 ↑
Turkmenistan	5.035	17	34.282	↑ 13	174.330	10 ↑
Algeria	33.994	4	45.017	↓ 8	171.873	11 ↓
Jordan	23.731	8	43.700	↓ 9	162.866	12 ↓
Uzbekistan	13.558	13	24.689	↓ 17	143.331	13 ↑
Morocco	11.091	14	24.915	↓ 16	109.775	14 ↑
Tunisia	23.936	6	61.093	↔ 6	102.341	15 ↓
Egypt	19.861	11	43.149	↑ 10	100.040	16 ↓
Kirghizstan	8.052	15	31.023	↑ 14	88.369	17 ↓
Albania	20.971	10	51.296	↑ 7	80.032	18 ↓
Malaysia	3.903	20	19.182	↑ 18	69.616	19 ↓
Pakistan	1.241	26	11.756	↑ 19	59.700	20 ↓
Indonesia	3.345	21	8.269	↓ 23	56.867	21 ↑
U.A.Emirates	4.386	18	8.812	↓ 22	51.600	22 ↓
Katar	674	30	1.955	↓ 31	35.832	23 ↑
Bahrain	3.939	19	4.201	↓ 25	32.476	24 ↑
Afghanistan	1.506	24	9.401	↑ 21	31.983	25 ↓
Tajikistan	3.087	22	6.811	↓ 24	31.917	26 ↓
Nigeria	1.190	27	2.713	↓ 29	27.711	27 ↑
Yemen	1.463	25	2.525	↓ 30	24.237	28 ↑
Oman	408	31	763	↓ 33	18.787	29 ↑
Palestine	357	32	3.282	↑ 26	16.218	30 ↓

Bangladesh	705	29	2.939	↑ 27	12.212	31↓
Sudan	1.838	23	2.897	↓ 28	11.434	32↓
Senegal	0	33	1.384	↑ 32	5.483	33↓

Table 2 presents a list of the member states of the Organization of Islamic Cooperation (OIC). The list was compiled by the Turkish Statistical Institute (TURKSTAT). Table 2 shows the number of tourists who visited in Turkey in 1996, 2005, and 2015. Columns B and C represent the rankings of the countries in terms of the number of visitors, and the “↔” symbol represents an unchanged position, whereas “↑” represents improvement in ranking. The “↓” symbol represents downward movement in the rankings. Table 2 shows that most tourists to Turkey came from Iran during the years in focus. The number of tourists from Arab countries, such as Iraq, Saudi Arabia, Libya, and Kuwait also increased remarkably during this period. Iraq ranked twelfth in terms of the number of tourists who visited Turkey in 1996; it rose to the fourth spot in 2005. In 2015, Iraq climbed to the second spot. Similarly, Kuwait was ranked twenty-eighth in 1996. It rose to the twentieth spot in 2005, and by 2015, it had climbed to the ninth spot. On the other hand, one can also notice that the number of tourists from Tunisia decreased during the same period. Tunisia was ranked sixth in 1996, but it came down to the fifteenth spot in 2015.

On the whole, however, barring a few exceptions, the number of tourists to visit Turkey from Islamic countries has increased. Therefore, it is important to identify and examine the needs and preferences of tourists from these countries in order to further increase the number of tourists from these regions. The following sections focus on the impacts Muslim tourists have on Turkey’s tourism revenue.

5. Data and Method

In this section, the impacts of foreign tourists visiting Turkey on the country’s tourism industry, particularly, its tourism income, are examined using regression analysis. The analysis focuses on the period between 1996 and 2015. In this context of this analysis, the yearly tourism income (TI) is considered a dependent variable in the econometric model. On the other hand, the number of tourists from (i) OIC countries (OIC), (ii) Arab countries (AT), (iii) non-Arab countries (NAT), and (iv) non-OIC countries (NOIC) are treated as independent variables. Table 3 shows the definitions of variables. The following OIC member states have been excluded from this analysis owing to a lack of data: Chad, Guinea, Mali, Mauritania, Niger, Somalia, Sierra Leon, Gabon, Gambia, Guinea, Uganda, Burkina Faso, Cameroon, Comoros, Maldives, Djibouti, Benin, Djibouti, Brunei, Mozambique, Suriname, Togo, and Guyana.

In addition, OIC, AT, and the number of tourists from non-Muslim member states of the OIC (GMT) are also treated as independent variables. These variables also pertain to the period between 1996 and 2015. These data have been obtained from TURKSTAT’s tourism statistics. The data pertain to the monthly foreign-citizen entry-exit numbers, and they were taken directly from the Security Passport Authorities. Data regarding tourism income for the period between 1996 and 2000 have been obtained from The Association of Turkish Travel Agencies (TURSAB). Data for the period between 2001 and 2015 have been obtained from TURKSTAT’s tourism statistics. The tourism income value has been recalculated by TURKSTAT, and it represents the equivalent of the US Dollar.

Regression analysis is the estimation or prediction of a dependent variable as another independent variable whose known or unchanged value is its dependency (Gujarati, 2010). Since more than one independent variable is used to examine the impacts Muslim and non-Muslim tourists have on Turkey’s tourism income, this study employs multiple regression analysis.

Table 3: Definition of Variable

Variable	Definition	Role
TI	yearly tourism income	Dependent variable
OIC	the number of tourists from Organization of Islamic Cooperation countries	Independent variable
AT	the number of tourists from Arab countries	Independent variable
NAT	the number of tourists from non-Arab countries	Independent variable
NOIC	the number of tourists from non-Organization of Islamic Cooperation countries	Independent variable

Two different models are used in this study. In order to analyze the impacts tourists from OIC member countries and non-OIC countries have on Turkey's tourism income, we used the following model:

$$(TI)_t = \beta_0 + \beta_1(OIC) + \beta_2(NOIC_t) + \epsilon_t \quad (1)$$

To analyze the impacts tourists from Arab countries have on Turkey's tourism income, we used the following model:

$$\text{Log}(TI)_t = \beta_0 + \beta_1 \text{Log}(AT) + \beta_2 \text{LOG}(NAT_t) + \epsilon_t \quad (2)$$

The models are estimated using the least squares method. In the context of this analysis, the expression $t = 1, 2, 3 \dots n$ shows time, whereas " ϵ " shows error. The Eviews 9 package is also used in this analysis.

6. Results and Discussion

It is necessary to make some assumptions and conduct statistical tests in order to obtain the desired properties and for these properties to have a valid statistical analysis. The predicted values will be reliable and reflect the truth only after the assumptions are provided.

In order to check whether the error terms have normal distribution for both models, we have used the skewness value, kurtosis, and Jarque-Bera statistics. In data sets that match normal distribution, the kurtosis value is 3. If the kurtosis value is greater than 3, the series is steeper than normal. If the kurtosis value is lesser than 3, the series is flatter than normal. If skewness value is equal to zero, it can be said that the series matches normal distribution. If skewness value is greater than zero, it can be said that the series is positively skewed. On the other hand, if skewness value is lesser than zero, it can be said that the series is negatively skewed.

The Jarque-Bera value will also be zero for normal distributions. When the variables resemble a normal distribution, the Jarque-Bera value also increases (Şenesen, 2007). Table 4 shows the normal distribution of error terms in both models.

Table 4: Normality Test Results

Model 1		Model 2	
N	20	N	19
Mean	0,00	Mean	0,00
Median	-54904,44	Median	-0,01
Std. deviation	634823,5	Std. deviation	0,05
Skewness	0,07	Skewness	-0,12
Kurtosis	3,10	Kurtosis	3,27
Jarque-Bera	0,03	Jarque-Bera	0,08
Prob.	0,98	Prob.	0,86

It is necessary to examine whether series are stable while using time series. In other words, the stability of series should be tested, and the unit root tests should be done. It is also important to complete stability transactions. These measures are necessary in order to prevent the occurrence of "spurious regression." Failure to do so may result in erroneous estimations, which may also indicate a fake relationship. If the series are not stable at level values, their differences can be considered stable. Thus, resolving the spurious regression problem enables a researcher to achieve more healthy results. (McKinnon, 1991).

The extended Dickey Fuller (ADF) test was used to ascertain whether or not the series contain unit root. Table 5 presents the results of the stability test for Model 1, which includes elements such as TI, OIC, and NOIC. Table 5 also presents the results of the stability test for Model 2, which includes the logarithm of TI (LOGTI), the logarithm of AT (LOGAT), and the number of non-Arab tourists (LOGNAT). The results of the augmented Dickey Fuller (ADF) test are also presented in Table 4. The results indicate that none of the variables are stable at the stationary level. The variables were stabilized by taking first differences.

During regression analysis, TI, OIC, and NOIC variables are stable in first differences for Model 1, and the first differences of these variables are FARKTI, FARKOIC, and FARKNOIC respectively. The logarithmic values of the variables are used for Model 2. LOGTI, LOGAT, and LOGNAT are stable in first differences. The following variables are also used: FARKLOGTI, FARKLOGAT, and FARKLOGNAT. The constant and trend elements are used in both the models.

Table 5: Results of Stability Tests

Model 1						
	I and T	ADF (Stationary)		I and T	ADF (First differences)	
		I	N		I	N
TI	-3,52 (0,06)	0,91 (0,99)	1,97 (0,98)	-4,88 (0,006)	-4,60 (0,002)	-3,73 (0,001)
OIC	4,47 (0,99)	2,62 (0,99)	-2,36 (0,38)	-6,05 (0,000)	-3,63 (0,01)	0,35 (0,77)
NOIC	-2,88 (0,18)	0,10 (0,95)	2,71 (0,99)	-3,88 (0,03)	-4,10 (0,006)	-0,81 (0,34)
Model 2						
LOGTI	-2,87 (0,19)	-0,42 (0,88)	2,09 (0,98)	-4,00 (0,03)	-4,16 (0,005)	-0,81 (0,34)
LOGAT	-0,85 (0,93)	3,47 (1,00)	3,01 (0,99)	-6,59 (0,000)	-1,62 (0,44)	0,95 (0,90)
LOGNAT	-1,07 (0,90)	-3,70 (0,01)	2,55 (0,99)	-4,95 (0,007)	-4,90 (0,001)	-0,67 (0,40)

Explanations: I and T model with trend and constant, I; model with only constant and N is model without trend and constant.

The test values in the table are the ADF test values and the probability values for each test are given in parentheses.

Table 6: Estimation Results

Model 1			
<u>Dependent Variable:</u>	Coefficients	St. error	p-value
FARKTI			
Constant	-138117,8	462292,4	0,047
FARKOIC	0,83	0,68	0,000
FARKNOIC	1,02	0,15	0,000
TREND	-23154,81	42706,33	0,000
R ² : 0,83			
$\bar{R}^2$: 0,79			
Durbin-Watson: 2,25			
F-Statistics: 24,385			
Significance: 0,000			
Model 2			
<u>Dependent Variable:</u>	Coefficients	St. error	p-value
LOGFARKTI			
Constant	-0,0006	462292,4	0,01
FARKLOGAT	1,19	0,68	0,01
FARKLOGNAT	0,52	0,15	0,00
TREND	-0,008	42706,33	0,01
R ² : 0,86			
$\bar{R}^2$: 0,84			
Durbin-Watson: 2,13			
F-Statistics: 31,40			
Significance: 0,000			

The estimated results for both models of tourism income are shown in Table 5. The estimated results indicate that p values of (i) FARKOIC and FARKNOIC in Model 1 and (ii) FARKLOGAT and FARKLOGNAT in Model 2 are smaller than 0,01. Therefore, the coefficients are significant at %1 level. On the other hand, R² shows the disclosure rate of dependent variable by independent variables. The R² value for Model 1 is 0,83, and the R² value for Model 2 is 0,86. Therefore, it can be said that the two models have enough value to disclosure. When the F-statistic value is taken into account, these values are greater than the significance F values for both models. Therefore, both models are meaningful as a whole (Yalçın and Çakmak, 2016). When the estimated coefficients for Model 1 were examined, one unit increase in OIC caused an increase of 0,83 units in the same direction in TI, whereas an ncrease in NOIC resulted in an increase of 1.02 units in TI.

When the estimated coefficients for Model 2 were examined, we found that a change of 1 percent in the FARKLOGAT variable was caused by a change of 1.19 percent in the FARKLOGTI variable. Similarly, a change of 1 percent in the FARKLOGNAT variable was caused by a change of 0.52 percent in the FARKLOGTI variable.

Since the econometric model employed in this study uses few independent variables, the effects of excluded variables are collected on the error term. For this reason, it is more important for the assumptions about the error term to be realized in terms of the significance of the parameters and the overall significance of the test. So, it is reasonable to expect the error term to be cleared from autocorrelation and homocyclic (Yalçın and Çakmak, 2016). We used the Durbin-Watson test in order to ascertain whether autocorrelation exists. In both models estimated for the TI value, it was concluded that there was no autocorrelation because the Durbin-Watson test statistic value was close to 2. This is shown in Table 6. We analyzed heteroscedasticity assumption using White test, and the results are shown in Table 7. The calculated Chi Square probability value is greater than 0.05. Therefore, this result indicates that there is no variance in both models; in other words, the error term is homoscedastic.

Table 7: Results of the White Test

White Test Results For Model 1			
F-stats:	0.858917	Probability F(9,9):	0.5878
Observations*R ² :	8,778993	Probability Chi Square (2):	0.4579
		Probability Chi Square (2):	0.9875
White Test Results For Model 2			
F-stats:	0,502118	Probability F(9,9):	0,8403
Observations*R ² :	6,351190	Probability Chi Square(2):	0,7043
		Probability Chi Square (2):	0,8432

According to another assumption, there are no multiple linear relationships between the independent variables. However, this assumption is not valid for multi regression models in which some or all independent variables have a strong relationship between themselves. Moreover, if the mentioned relationship is not strong, only a weak relationship can be expected between the economic variables. The value of the variance magnification factor (VIF) must be less than 5 for the detection of the multiple linear links (Tari, 2010: 157–158).

Table 8: Multicollinearity Test Results

Model 1		Model 2	
Variable	VIF	Variable	VIF
FARKNOIC	1,254553	FARKLOGAT	2,1899
FARKOIC	1,765211	FARKLOGNAT	1,6032
TREND	1,481763	TREND	1,7590

As shown in Table 8, the VIF values are lesser than 5 for both models. Therefore, it is not possible to detect multiple linear links. The forecast values calculated from the assumption that all necessary assumptions are satisfied are reliable and will reflect the truth.

Islamic tourism has emerged as an important sub-category within the tourism sector (Rahim et.al, 2015; Henderson, 2010; Mohsin et.al, 2016; Battour and Ismail, 2016). However, very few studies have examined the importance of Islamic tourism for the Turkish tourism industry (Tekin, 2014:759). The contributions made by Muslim tourists toward Turkish tourism are less than the contributions made by non-Muslim tourists. Although the number of hotels that cater to Islamic tourism has increased in recent years in Turkey, there is shortage of Islam tourists. Moreover, the disposable income of Muslim countries is lower than the disposable income of other countries. For these two reasons, Turkey's revenue from Halal tourism was not very significant. However, Turkey can nonetheless earn more in the future by improving Halal tourism (Kandemir and Gökbeşe, 2017:303). Halal tourism can also be marketed in order to attract tourists from high income countries (Rahim et.al, 2015; Henderson, 2010). More critical research is required in order to (i) gauge the exact contributions of Halal tourism toward Turkey's tourism industry and (ii) to identify ways to improve opportunities for Halal tourism in Turkey.

7. Conclusions

Two different models were used in this study. Model 1 was used to represent the impacts Muslim tourists have on Turkey's tourism industry. This model allows us to identify benchmark effects of Muslim tourists and non-Muslim tourists. The results reveal that a one unit increase in the number of Muslim tourists increases tourism income by 0.83 units. However, a one unit increase in the number of non-Muslim tourists increases tourism income by 1.02 units. Therefore, Muslim tourists have less impact on Turkey's tourism income than non-Muslim tourists. This result

is generally considered a reflection of the fact that most Muslim countries are either developing or underdeveloped countries.

Model 2 was used to examine the impact of tourists from West Asian countries. The model was also used to compare the differences between West Asian countries and other Muslim countries in terms of their impact on Turkey's tourism income. The countries considered in Model 2 are Arabic and other Muslim countries. The results reveal that, every %1 increase in the number of tourists will cause a %1,19 increase in Turkey's tourism income. Additionally, every %1 increase in the number of non-Arab tourists will cause a %0,52 increase Turkey's tourism income. Therefore, the contributions of Arab tourists are 2,5 times higher than the contributions of other tourists.

Given these results into, it is important to examine the reasons behind the fact that the contributions of Muslim tourists are lesser than the contributions of non-Muslim tourists. As mentioned earlier, one reason for this is that Muslim countries typically have low disposable income. On the other hand, Arab tourists contribute more in spite of the fact that they come from undoubtedly Muslim countries. Therefore, it is important to focus on the ways in which a Muslim country can attract rich Muslim tourists. In addition, in order to ensure that Muslim tourists, other than Arab tourists, choose Turkey as their tourist destination, it is important to develop the necessary tourist infrastructure. One way to accomplish this is by encouraging hotels to adopt Sharia-compliant practices in order to attract more Muslim tourists

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