

An Empirical Analysis of the Determinants of International Tourism Demand :

The Case of Izmir

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Abstract

Tourism has become an important sector in Turkey as a growing source of foreign exchange reserves and employment over the last two decades. After being one of the most important tourist destinations for decades, Izmir lost its relative importance after 1990's. With its historical, cultural values and its nature Izmir still has a significant tourism potential.

Given the importance of this sector for Izmir, this paper investigates the factors affecting international tourism demand in Izmir using time series data between 1980-2005. Double logarithmic model is used in estimation. Real exchange rate, GDP per capita of OECD countries, GDP per capita of Izmir and transportation public capital stock of Izmir are the variables used to explain international tourist arrivals of Izmir. The empirical results show that price and income of the tourist generating country are the main determinants of tourism demand. Income and price elasticities are above one. Local factors related to the development level of Izmir and transportation public capital stock have no significant effect. Policy implications derivable from this study suggest that government should encourage alternative forms of tourism development besides mass tourism via experience economy

Keywords: Tourism demand, Izmir, experience economy.

JEL classification: R11, C13

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1. Introduction

Tourism has become an important sector in Turkey as a growing source of foreign exchange reserves and employment over the last two decades. Contribution of tourism to Turkish economy has also been stressed by some researchers (see, Gunduz and Hatemi-J, 2005).

When the historical background of tourism in Turkey is examined, it is seen that the development of tourism sector has merely depended on mass tourism and tourism plans has been prepared to promote coastal activities, namely sea-sand-sun (3S) type of activities. Moreover although Turkey has high tourism potential, she had not developed alternative modes of tourism mainly depending on natural, cultural and traditional assets of the country.

Izmir, as being one of the leading tourism destinations at the beginning of modern tourism activities in Turkey has also problems to realize its tourism potential after 1990's. However tourism is an important sector for the region in terms of employment and growth. Factors affecting international tourism demand in Turkey has been investigated in Turkey (see, Icoz, et al. 1998, Akis, 1998, and Akal, 2004 for example). However, there appears to be no study related to the determinants of international tourism demand as far as Izmir is concerned.

Given the importance of the sector for Izmir, the aim of this paper is to investigate the factors affecting international tourism demand in Izmir. The rest of the paper is organised as follows. Section 2 gives some information about tourism sector in Turkey and Izmir. Section 3 explains the theoretical model. Section 4 gives detailed information about data employed in the study. Section 5 gives the estimates of the study. The final section underscores the main findings of the study and gives some policy recommendations.

2. Tourism in Izmir

The most strategic port and the third largest city of Turkey, Izmir is located at the intersection point of many touristic centers. With a mystical history of 7,000 years, Izmir proudly hosts a large number of extremely important architectural designs and archeological sites.

On the other hand, Izmir presents its services to cultural tourism with its countless historical sites reaching to our days from prehistoric times, works and buildings, museums, typical Mediterranean kitchen, handicrafts, festivals, festivities, and other local cultural specialties, as well as offering its respectful participation in the belief tourism with a large collection of sacred places.

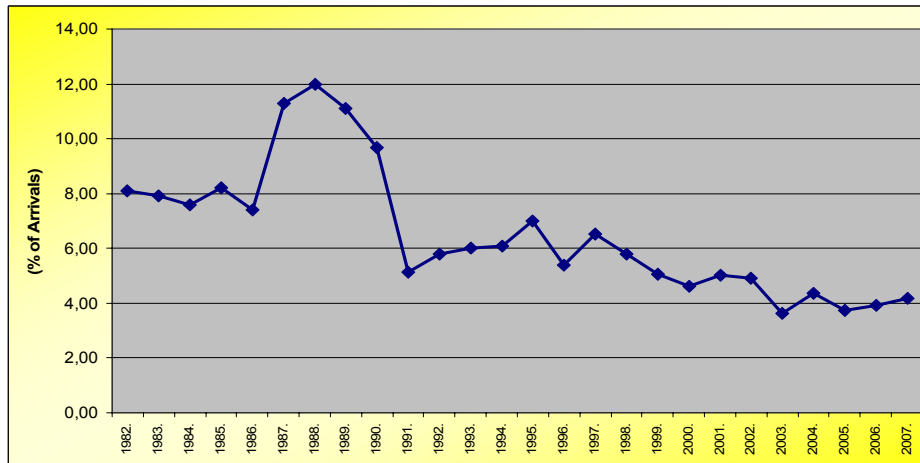
Congress tourism is rapidly developing, thermal waters are a very important tourism resource for Izmir, as well as in all the Aegean Region. In the health tourism sector, Izmir has numerous facilities. Touristic facilities in metropolitan Izmir are well developed, with a wide range of possibilities to deserve the appreciation of every taste and savor.

With its historical identity, beaches and sea, mountains and plateaus, thermal waters, macchia and red pine forests, Aegean agricultural products and soft climate, Izmir presents

many unique opportunities to realize recreational activities and nature-compliant tourism types (see, Pirnar 2005, for details).

After being one of the most important tourist destinations for decades, Izmir lost its importance after 1990's. With its historical, cultural values and its nature Izmir still has a significant tourism potential. Revival of tourism industry for the city will contribute the regional and national economy. However the success of a destination is not easy since many new destinations and variations of touristic products are introduced within the international tourism market and current destinations and products try harder to strengthen their competitiveness. (see, Ozdemir, 2005, for details).

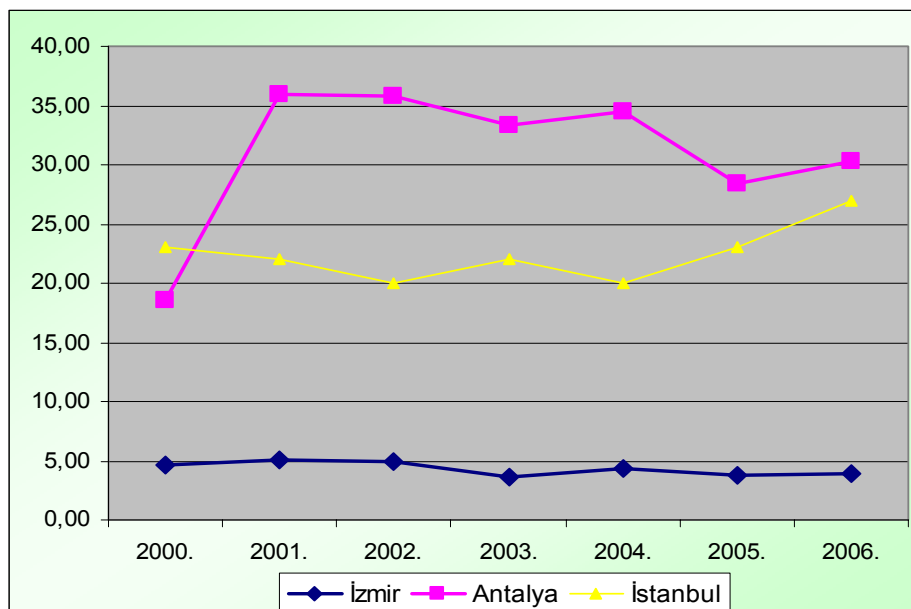
The continuous decrease of share for tourism in and around Izmir can be seen from Figure 1. In the last 25 years Izmir has lost its share with 50% (i.e. from 8% to 4%). The tourism industry has been growing in Turkey but Izmir were incapable of adapting to this growth. This has several reasons; the first reason was that the southern Turkey had long and unoccupied seashore and became the "Turkish Riviera". After 1995, Antalya province has become the star of Turkish Tourism with a 30% of share for arrivals (see, Figure 2), the second reason was that the Aegean Region was occupied by the summer residences which did not leave enough space for the development of tourism. The third reason was that the facilities became old-fashioned.



Source: Ministry of Culture and Tourism, www.kultur.gov.tr

Figure 1: Share of Izmir in Touristic Activities (% of Arrivals in Turkey)

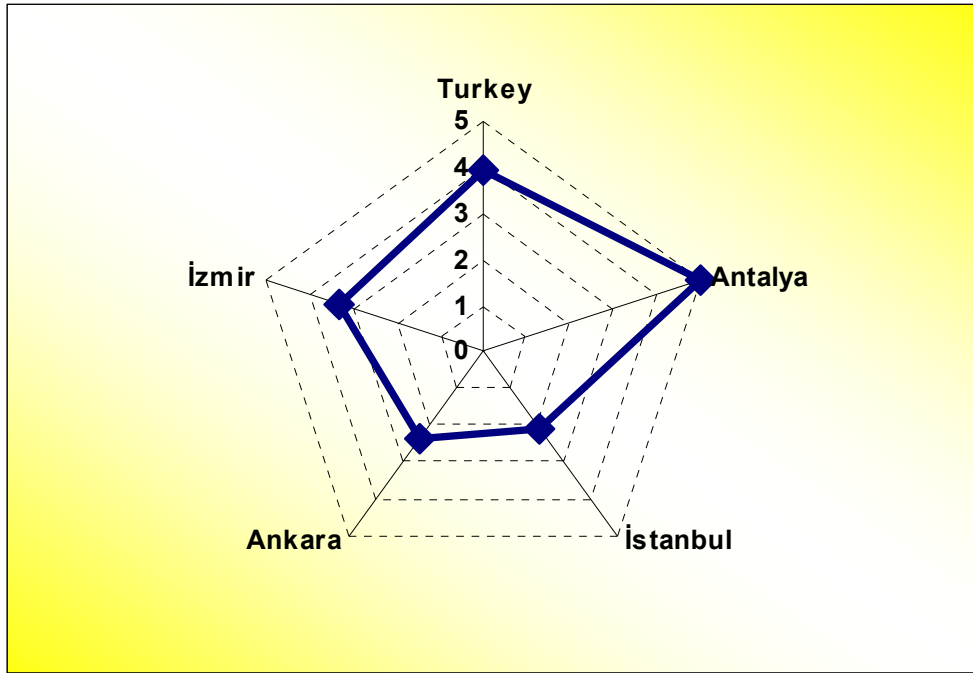
As can be seen from Figure 2, Izmir is still a destination for traditional tourist sending countries, however southern Turkey (i.e. Antalya Region) has become one of the top destinations for Russian tourists. Izmir cannot attract those new tourist sending countries. Istanbul is increasing its share with the new efforts being performed in the last couple of years.



Source: Ministry of Culture and Tourism, www.kultur.gov.tr

Figure 2: Share of Izmir, Antalya and Istanbul in Touristic Activities (% of Arrivals in Turkey)

Figure 3 presents the average length of stays in 2006. As can be seen from the figure average length of stay in Turkey is 4 days, where Antalya province has 5 days of average stay. Ankara and İstanbul have lower average length of stay due to business trips, congress tourism etc. Izmir has an average length of stay slightly above 3 days due to its position as a hub with its port and airport.



Source: Ministry of Culture and Tourism, www.kultur.gov.tr

Figure 3: Average Length of Stay (Days-2006)

The following table presents the average length of stay and occupancy rates in Izmir. The occupancy rate reveals important information about the present situation and the potential for tourism. The occupancy rate for Izmir, excluding the camping sites, cannot exceed 50% which shows that there is no need for more investment for new facilities whereas the need for effective marketing efforts can obviously be seen. The highest rates are for 4 star hotels and holiday villages (see Table 1).

Table 1: Average Length of Stay (Days) and Occupancy Rates in Izmir by Type and Class of Establishment (Izmir 2006)

Type and Class of Establishment	Average Length of Stay			Occupancy Rate %		
	Foreigner	Citizen	Total	Foreigner	Citizen	Total
HOTEL						
5 Star	3,0	1,9	3,4	20,78	17,97	38,75
4 Star	3,9	1,5	2,6	31,26	15,58	46,84
3 Star	2,2	1,5	1,6	6,35	26,56	32,91
2 Star	2,8	1,7	1,9	6,93	27,13	34,06
1 Star	1,8	1,1	1,2	3,23	30,62	33,85
Special Licence	2,0	1,5	1,9	20,41	3,96	24,37
Thermal	-	-	-	-	-	-
Boutique	-	-	-	-	-	-
Apart	-	6,2	6,2	-	2,57	2,57
TOTAL	3,1	1,7	2,1	17,46	20,69	38,14
MOTEL	4,4	4,6	4,5	13,61	14,66	28,27
BOARDING HOUSE	7,3	2,7	2,9	1,48	12,43	13,91
HOLIDAY VILLAGE	5,9	3,5	4,2	17,59	27,16	44,75
INN	-	-	-	-	-	-
CAMPING	10,4	13,8	12,5	24,39	51,76	76,15
GOLF EST.	-	-	-	-	-	-
TRAINING EST.	2,8	1,3	1,4	2,62	17,46	20,08
TOURISM COMPLEX	-	-	-	-	-	-
MOUNTAIN HOUSE	-	-	-	-	-	-
GRAND TOTAL	3,3	1,8	2,3	17,29	21,38	38,66

Source: Ministry of Culture and Tourism, www.kultur.gov.tr

3. Model

Tourism demand has been extensively investigated in the literature for different countries (see, Crouch, 1994, Lim, 1997, and Li et al. 2005, for a survey). Income and relative prices are mostly used variables. Tourism prices are not in general available. Exchange rates have used as a proxy variable for price. Other exogenous variables are also considered like cost of transportation, attributes of the destination like safety, infrastructure etc.

Based on the literature, the international tourism demand model can be written as follows

$$TOUR_t = \alpha + \beta_1 EXCH_t + \beta_2 GDPOPC_t + \beta_3 GDPPC_t + \beta_4 TRANSP_t + \varepsilon_t \quad (1)$$

where $TOUR_t$ represents tourist arrivals, $EXCH_t$ is the real Exchange rate, $GDPOPC_t$, is the per capita GDP of the OECD countries, $GDPPC_t$ represents GDP per capita of the Izmir, $TRANSP_t$ is the transportation public capital stock, ε_t is error term and t is time.

The per capita GDP of the OECD countries are used as a proxy for income. It is expected that tourist arrivals increase as the income increases. The real exchange rate is defined as the price of the tourist generating countries currency in terms of host countries currency. The coefficient of the real exchange rate is expected to be negative. GDP per capita of the region is an indicator of the level of economic development, which could promote tourist arrivals. The coefficient of the GDP per capita for Izmir is expected to be positive. Transportation infrastructure is expected to have a positive impact on tourism. If the tourism demand model is estimated in the log-log form, the coefficients could be interpreted as elasticities.

4. Data

In order to measure the tourism demand we have used tourist arrivals. Another measure could be tourism receipts which were not available for Izmir. Data on tourist arrivals are obtained from Turkish Statistical Institute (TURKSTAT). Data on real exchange rate are collected from electronic delivery system of Central Bank of the Republic of Turkey. Data on GDP per capita of OECD countries based on purchasing power parity (PPP) are obtained from OECD datasets. Per capita income and transportation public capital stock data for Izmir are obtained from Önder *et al.* 2007. Except for data on GDP per capita for Izmir and transportation capital stock annual data from 1980 to 2005 were available. Data for GDP per capita for Izmir and transportation capital stock were only available from 1980 to 2001. All the variables are used in logarithmic form.

5. Estimation

Table 2 presents the results of estimation of Equation 1. The equation is estimated by method of least squares (see, Witt, 2000 for different methods). The dependent variable is tourist arrivals and real exchange rate, GDP per capita of the OECD countries, GDP per capita of Izmir and transportation capital stock of Izmir.

As can be seen from the table the coefficients of real exchange rate and GDP per capita of the OECD countries are as expected and significant. Price elasticity, -1.578 indicates a price elastic demand for international tourism. The results also show that income elasticity is above 2 indicating that tourism is a luxury good which is in line with previous literature on tourism demand (see Eilat, and Einav, 2004, for example) All the diagnostic tests are satisfactory.

Table 2: Results of the Model I 1980-2001

Dependent Variable: TOUR

Variable	Coefficient	t-ratio
Constant	-8.952	-0.60
EXCH _t	-1.578	-3.59***
GDPOPC _t	2.117	3.25***
GDPPC _t	1.3946	0.77
TRANSP _t	-0.336	-0.72
Adj R ²	0.872	
Diagnostic Tests		
Normality	0.45 (0.79)	
Autocorrelation $\chi^2(1)$	0.26 (0.61)	
Heteroscedasticity F(8,22)	1.165(0.39)	

Notes: Normality is the Jarque-Bera Test has Chi-squared distribution under null normality of residuals. Autocorrelation is a Lagrange multiplier test for first order serial correlation. White heteroscedasticity test has F statistic under the null of homoscedastic error. p values are in parenthesis.

The coefficient of the GDP per capita of Izmir and transportation capital stock of Izmir are found to be insignificant indicating that the local factors of Izmir does not have a significant effect on international tourist arrivals.

We reestimate the model by excluding these two insignificant variables. Table 3 presents estimation results of the new model. Adjusted R^2 is higher in this model. The price and income elasticities are again above one and significant. This implies that income and price policies has a strong effect on international tourism demand for Izmir. However policies related to local factor are found to be ineffective.

Table 3: Results of the Model II 1980-2005

Dependent Variable: TOUR

Variable	Coefficient	t-ratio
Constant	-0,342	-0.19
EXCH _t	-1.267	-4.20***
GDPOPC _t	1.956	14.36***
Adj R ²	0.891	
Diagnostic Tests		
Normality	1.03 (0.60)	
Autocorrelation $\chi^2(1)$	0.17 (0.67)	
Heteroscedasticity F(5,20)	0.95(0.46)	

Notes: Normality is the Jarque-Bera Test has Chi-squared distribution under null normality of residuals. Autocorrelation is a Lagrange multiplier test for first order serial correlation. White heteroscedasticity test has F statistic under the null of homoscedastic error. p values are in parenthesis.

6. Conclusion

In this study we estimated international tourism demand for Izmir, which is an important tourism destination in Turkey. We used double logarithmic model for the time series data between 1980-1995.

The results of the study show that price and income of the tourist generating country are the main determinants of tourism demand. Income and price elasticities are above one. Local factors related to the development level of Izmir and transportation public capital stock have no significant effect. This result implies that tourism demand in Izmir is mainly depends on the factor of tourism generating countries. Local factors of Izmir are not effective in demand generation, which is typical for mass tourism generating regions.

Izmir has a distinct place from the aspect of being an important center for tourism and having a developed infrastructure as well as having rich natural, cultural and historical resources and having a close location to tourist sending countries.

As being one of the leading tourism destinations at the beginning of modern tourism activities in Turkey, Izmir has a very important potential for tourism with its location on the Aegean shore, 7000 years of history and its organic agriculture in the recent years. Homeros wrote his world famous Iliad here and the oldest temple for goddess Athena was built in Izmir. Besides these, Izmir was a home for Hitites, legendary tribe of Amazones, Phrygians and many others.

Despite all these natural, historical and cultural richness the city cannot benefit this potential. Thus the demand for tourism is quite low and the city stayed at the back of many shining tourism destinations in the 1990's.

Policy implications derivable from this study suggest that government should encourage alternative forms of tourism development besides mass tourism via experience economy (including arts craft and design, artisan food alongside culinary, environmental,

archaeological and the variants of cultural tourism) for Izmir. Organic agriculture and food industry depending of organic agriculture has a remarkable place in the tourism policy in relation with experience economy. From this point of view Izmir has a great potential and the government started activities to form clusters for organic agriculture and considerable amount of support will be supplied. In such a cluster, culinary tourism can be developed, organic farms and a gourmet institute can be founded, world famous chefs and cooks can be educated and food festivals can be organized.

Besides organic agriculture the richness of the 7000 years of history can be utilized to present the visitors meaningful experiences (performances about daily living in ancient times etc.). By this means the number of visitors and the revenues can be increased. Izmir can also be a leading city for health tourism with its thermal resources. The city can increase its activities with conferences, festivals, concerts, exhibitions, fairs, sports, cultural events.

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