

Forecasting of Tourism Demand for Cyprus: Generalized Method of Moments

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Abstract

The purpose of this paper is to study the international demand for tourism in Cyprus as a destination place for seven main tourism sending countries, United Kingdom, Russia, Sweden, Greece, Germany, Netherlands and France. The ratio of tourists entering Cyprus was taken as dependent variable, and relative income, relative price, expectations and habits, international trade, infrastructures and unemployment were independent variables of the study. The required data were collected annually during 1996-2013. Tourism demand model was estimated through dynamic panel data method- GMM and using Eviews Software. Results of the study showed that relative income, expectations and habits, and international trade had positive effect on Cyprus tourism demand; on the other hand, relative price had a negative effect on this variable. In addition, no significant relationships between infrastructures and unemployment and Cyprus tourism demand were observed.

Keywords: Cyprus Tourism, Demand Forecasting, Generalized Method of Moments (GMM)

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1. Introduction

There is little doubt that tourist industry is an important sector of an economy. Tourism has a substantial role in job-creation and export earnings. It is a demand-driven, service-oriented industry experiencing rapid growth and innovation. Tourism plays a key role in the growth of our economy through employment, foreign exchange earnings, investment, and regional development. Tourism directly and indirectly contributes a certain percentage of nation's GDP (Chu, 2014, Chen et al., 2012).

In recent years, a number of researchers have focused on forecasting tourism demand (Claveria and Torra, 2014; Shahrabi et al., 2013; Tsui et al., 2014). The perishable nature of tourism products makes forecasting an important subject for future success. Thus, planning for the future and forecasting what is likely to happen next, is crucial to the success of the whole tourism industry. Long-term and short-term forecasting are both important for different managerial purposes. On the supply side of tourism planning, additional tourism investments such as public infrastructure and equipment, as well as hotels and resorts are costly and require a long time to develop. All these characteristics of tourism products make forecasting

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an important issue for both academics and practitioners (Gunter and Onder, 2015; Claveria and Torra, 2014). Accurate forecasts would help managers and investors make operational tactical and strategic decisions (Kun-Huang et al., 2012).

In general, the tourism literatures on the modeling of tourism demand focuses either on analyzing the impact of different determinants and/or on the accurate forecasting of the future tourism demand. This study lies within the group focusing on the underlying determinants (Olayinka, 2006).

There is a huge number of potential factors explaining tourism demand. Cunha (2003) identifies a set of potential determinants that can influence the decision to travel classified into the following categories: socioeconomic factors, such as, income level, relative prices, demography, urbanization and length of the leisure time; technical factors related to easier communications and transport facilities; psychological and cultural factors reflecting personal preferences and the style of life of the potential travelers; and random factors related to unexpected events, like political instability, weather conditions, natural disasters, epidemic diseases, etc (Proenca and Soukiazis, 2005).

The past work on tourism forecasting, is extensive. Tourism forecasting can be categorized as following one of two main approaches. The first is qualitative forecasting, such as judgmental forecasting and Delphi-style methods. The second approach, quantitative forecasting, can be further subdivided into two major categories. The first (and the one considered most often in the literature) is econometric forecasting. In this approach, the tourism demand is forecast using a number of explanatory variables (for example GDP of originating country, CPI of inbound country, etc.). The second approach is the time series approach (Andrawis et al., 2011).

Panel data analysis has appeared in tourism demand research. The panel data models that were used in the literature are pooled logit regression, the generalized method of moments (GMM) procedure, generalized least squares (GLS) panel data regressions, and ordinary least square (OLS) panel data regressions (which comprise of fixed and random effects models). Using a panel data approach has several advantages. It allows a combination of cross-sectional and time-series data. In addition, panel data give more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency (Kareem, 2005).

In spite of its advantages, comparing the volume of econometric and time-series analyses in tourism literature, discovered that panel data approach has rarely been employed in tourism demand research. Moreover, thus far, there is virtually no empirical research investigating domestic tourism demand using a panel data approach. This study uses a dynamic panel model. The benefit of such model is that it contains a lagged dependent variable which can be used to measure tourists' habit persistency (Kareem, 2005).

This study intends to forecast tourism to Cyprus. To that end, this paper is organized as follows. Section 2 shows some related literature. Section 3 describes the data. Section 4 explains the forecasting model. Section 5 compares the forecasting results. Section 6 concludes this paper.

2. Literature Review

Tourism demand refers to the consumers' willingness to buy different amounts of a tourism product at different prices during a period of time (Dwyer et al., 2010). Tourism is a complex decision where in several determinants contribute to explain tourism demand. Middleton et al. (2009) summarize the main determinants in nine factors: economic factors; comparative prices; demographic factors; geographic factors; socio-cultural attitudes to tourism; mobility; government/regulatory; media communications; and information and communication technology.

Review of the literature shows that relative income, relative price, expectations and habits, international trade, infrastructures and unemployment as the most important macroeconomic variables, have impact upon tourism demand. Each of these variables will be explained in continue.

2.1. Relative Income

Relative income refers to personal income relative to a benchmark, i.e., the average income in a society/country, and it reflects an individual's perceived income relative to others' income. Relative income also tends to influence tourism demand. Several social and economic theories can be further extended to explain how relative income influences domestic tourism demand, such as the theories of conspicuous consumption and individual well-being/happiness.

Conspicuous consumption is a type of consumption designed to signal the social position and wealth status of an individual. Tourism can communicate socioeconomic status because it could be associated with higher personal income and additional leisure time. To symbolize socio-economic status through tourism, tourists often purchase luxury products and services or consume fancy local foods.

A large body of literature has highlighted the positive association between individual well-being/happiness and relative income. It has also been suggested that people with a higher level of well-being/happiness are more likely to participate in various tourism activities. Therefore, people who possess a positive attitude towards life are more likely to participate in domestic tourism, which is a type of activity that can enhance people's sense of happiness and achievement (Yang et al., 2014).

Income factors particularly were used in many empirical studies that adopted econometric models to measure tourism demand elasticity. Findings showed that the income elasticity of tourism demand, especially for international demand, is positive and above one (Serra et al., 2013). Several studies reveal and confirm that for GDP the expected sign is positive, showing that tourism needs to be seen as a luxury good (Sinclair and Stabler, 2010). Mervar and Payne (2007) indicated that the demand for tourism in Croatia is directly related to the variable of income. Algieri (2006) has extracted a long-run equilibrium relationship between the total income of the world and transportation cost for Russia. Leitão (2010) suggests that income is the main determinants of tourism demand to Portugal.

Therefore, we propose the following hypothesis with respect to the relationship between relative income and domestic tourism demand:

Hypothesis 1: Relative income has a positive influence on domestic tourism demand in Cyprus.

2.2. Relative Price

Apart from being sensitive to their own income, tourists are also sensitive to prices. The tourism includes two price elements: the cost of travel to the destination and the cost of living in the tourist destination. However, their deficiency comes from the fact that the expenditure patterns of a tourist might be quite specific and therefore different from that of the average household in a certain country (Kareem, 2005).

Relative prices were used in several studies to analyze international tourism demand. As suggested in several studies, relative prices influence and reduce tourism demand (Serra et al., 2013). Most of the studies use Consumer Price Indices as a measure of tourism prices. The implicit assumption underlying the use of the Consumer Price Indices is that prices of tourism goods and services tend to move in the same direction as overall consumer prices. Song and Wong (2003) showed that the elasticity of demand for tourism, in terms of relative prices, is different in various countries. Habibi and Chin (2008) indicated that there is a long-run equilibrium relationship between the tourism model's variables and tourism demand in Britain and America shows more sensitivity to the price variable. Brida and Risso (2006) showed that the variables of living cost and relative prices negatively and significantly have influenced the demand for foreign tourism in Germany.

Therefore, we propose the following hypothesis with respect to the relationship between relative price and domestic tourism demand:

Hypothesis 2: Relative price has a negative influence on domestic tourism demand in Cyprus.

2.3. Expectations and Habits

Another important variable affecting the demand for tourism is expectations and habits that usually as lagged value of dependent variable (the demand for tourism) are entered into the demand model. The reason for entering the variable of expectations and habits into the function of tourism demand is that with the departure and travel of the tourists to the destination country and expressing their pleasure and desirability of trip to the mentioned country, the tourists will be more willing to travel back to this country; because, journey back to a country to which one has previously travelled is less risky and more attractive than travelling into a new country (Proenca and Soukiazis, 2005; Mohammad Zadeh et al., 2010).

In most empirical studies conducted in the field of estimating tourism demand function such as Song and Witt (2003), lagged value of dependent variable has been used as expatiations and habits. Lyssiotou (2000) had investigated the effect of preferences on tourism costs. According to the main results of this study, preferences have an important impact upon tourism costs. Muhittin and Kaplan (2008) showed that the variable of behavioral habits has a positive and significant impact on the demand for foreign tourism to Turkey, and the strain of tourism demand towards living costs is more than other strains. Arnesson et al. (2009) showed that the variable of behavioral habits has a positive and significant impact on the demand for tourism in these countries.

Therefore, we propose the following hypothesis with respect to the relationship between expectation and habits and domestic tourism demand:

Hypothesis 3: Expectation and habits has a positive influence on domestic tourism demand in Cyprus.

2.4. International Trade

According to the tourism literature, foreign trade is one of the factors affecting the demand for foreign tourism. The expansion of trade between countries of origin and destination country often leads to the continuation of travels to the destination country. Therefore, theoretically and empirically, the rate of foreign trade and tourism are related to each other. Foreign trade affects the tourism demand in two ways; so that bilateral trade between countries leads to the formation of preferences for the goods and services of the country of destination (the country that receives tourists) and reduces the cost of economic exchange between the countries of origin and destination countries. In this regard, it is expected that the cost of living index in the destination country, as an alternative variable of tourism cost, have had a negative impact on tourism demand. Moreover, tourists' tastes and habits, depending on the destination country, may have a different effect on tourism demand. On the other hand, with the departure and travel of the tourists to the destination country and expressing their pleasure and desirability of trip to the mentioned country, the tourists will be more willing to travel back to this country, because, journey back to a country to which one has previously travelled is less risky and more attractive than travelling into a new country (Leitao, 2010).

Shan and Wilson (2001) showed that a bilateral causal relationship has been established between foreign trade and tourism. Khan and Chua (2005) indicated that there is a one-way causality relationship between the foreign trade and demand for foreign tourism. Katircioglu (2009), in their study, evaluated the impact of growing trade in the countries that are business partners of Cyprus on international tourism demand in Cyprus. The empirical findings of this study indicate that increase of the trade volume, has had a positive and significant impact upon tourism demand in this country. Tamat and Norlida (2010) showed that the growing trade of ASEAN countries has positively and significantly influenced the demand for tourism in Malaysia.

Therefore, we propose the following hypothesis with respect to the relationship between international trade and domestic tourism demand:

Hypothesis 4: International trade rate has a positive influence on domestic tourism demand in Cyprus.

2.5. Infrastructures

The tourism product has been characterized by several researchers. Gunn (1988) defines the product as a complex consumptive experience that results from a process in which tourists use multiple services (information, transportation, accommodation, and recreation). Smith (1994) acknowledges the role of service infrastructure in creating a product experience. He argues that service infrastructure is housed within the larger macro-environment of the destination and that infrastructure and technology in a destination are key features that can enhance experience. Crouch and Ritchie (1999) state that tourism planning and development would not be possible without roads, airports, harbors, electricity, sewage, and potable water. Kaul (1985) is among the first to recognize the importance of transport infrastructure as an essential component of successful development in that it induces the creation of new attractions and the growth of existing ones.

Tang and Rochananond (1990) conclude that infrastructure is an important element in promoting Thailand as a tourist destination country. Kim et al. (2000) in discussing the case of Sun Lost City, South Africa, and McElroy (2003) in discussing small islands highlight the importance of infrastructure, particularly government financed infrastructure, in the success of a destination. Naude and Saayman (2005) identify available infrastructure as important factor on tourism demand.

Therefore, we propose the following hypothesis with respect to the relationship between infrastructures and domestic tourism demand:

Hypothesis 5: Infrastructures has a negative influence on domestic tourism demand in Cyprus.

2.6. Unemployment

In this research, unemployment is defined as a proxy used for the state of the economy in the origin country which might have a potential impact on future arrivals. The intuition behind this partially lies in the literature on “the wage curve” hypothesis. This theorem is based on the relationship between unemployment in the local labor market and the level of pay, where real wages are suggested to be negatively related to the unemployment rate. Lower real wages imply falling numbers going abroad (Gounopoulos et al., 2012). On the other hand, Malley and Moutos (1996) provided another angle by analyzing unemployment as a measure of aggregate income uncertainty. They find an inverse relationship between the level of consumption and unemployment that is attributable to an increase in precautionary savings during periods of high unemployment.

Further intuition behind the use of unemployment as a proxy lies in the growing body of work on the psychological effect of unemployment on the level of happiness and well-being. One conclusive finding that was held relatively unchallenged is that the level of unemployment reduces the level of happiness and well-being significantly (Gounopoulos et al. 2012).

Gounopoulos et al. (2012) generated short-term forecasts on tourist arrivals in Greece and performs impulse response analysis to measure the impact of macroeconomic shocks from the origin country on future tourism demand. Impulse response analysis on the impact of unemployment and tourists cost of living shocks shows that the source of downside risk to future tourism numbers is limited in scope, magnitude, and duration. Imani and Parvaneh (2013) declare that today ecotourism development through creating job opportunities, provides the native people in the deprived areas with economic benefits. Tourists, by entering into the area and benefiting from all facilities provided by indigenous people, have a significant impact on the employment rate which is the most important indicator of human development.

Therefore, we propose the following hypothesis with respect to the relationship between unemployment and domestic tourism demand:

Hypothesis 6: Unemployment rate has a positive influence on domestic tourism demand in Cyprus.

3. Methodology

The purpose of this paper is to study the international demand for tourism in Cyprus as a destination place for seven main tourism sending countries, United Kingdom, Russia, Swede, Greece, Germany, Netherlands and France which count for about 90% of the total tourist inflows in Cyprus.

A panel data approach is used to estimate the demand function of tourism in Cyprus. Panel data analysis has appeared recently in tourism demand research. Using a panel data approach has several advantages. It allows a combination of cross-sectional and time-series data. In addition, panel data give more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency (Allen and Yap, 2009).

However, comparing the volume of econometric and time-series analyses in tourism literature, Song and Li (2008) discovered that panel data approach has rarely been employed in tourism demand research. Moreover, thus far, there is virtually no empirical research investigating domestic tourism demand using a panel data approach.

This study uses GMM method as a dynamic panel model to analysis the research data. The benefit of such model is that it contains a lagged dependent variable which can be used to measure tourists' habit persistency. GMM method is one of the methods used to estimate the system of equations in dynamic panel data approach. When in the panel data model, the dependent variable appears as a lag at the right side of the model, other ordinary least squares estimations will not be consistent. In such circumstances, it is necessary to use GMM method. GMM method, through selecting correct instrumental variables or applying a weight matrix, can be considered a powerful estimator in the condition of variance anisotropy (Baltagi, 2005). In this study, also, the dependent variable of tourism demand with a time lag has been included in the regression model as a new independent variable (as expectations and habits). Therefore, to estimate the Cyprus tourism demand model, GMM panel data method is used (Allen and Yap, 2009). Data analysis will be performed using Eviews econometric software.

Accordingly, the estimated demand function for tourism in Cyprus involves the following variables:

3.1. The Dependent Variable

We use an expenditure approach to define the demand for tourism in Cyprus. We define tourism demand as the share of the expenditures of each sending country to the total expenditures on tourism in the receiving country (Cyprus) (Proenca and Soukiazis, 2005):

$$(1) \quad TR_{i,t} = \frac{\text{Number of Tourists of the Sending Country}}{\text{Total Number of Tourists in the Destination Country (Cyprus)}}$$

with $i = 1, \dots, 6$ (the six main sending countries, United Kingdom, Russia, Swede, Germany, Netherlands and France) and $t = 1996, \dots, 2013$. The source of the data is CTO (Cyprus Tourism Organization), Tourism Statistics, several years.

3.2. Explanatory Variables

The method of measuring macroeconomic variables affecting tourism demand in Cyprus is discussed in this section.

As we explained in the theoretical section, the most important factor influencing the decision of households to travel abroad is their real personal income. As a measure of the household's wealth, we use real per capita income of the sending country defined by the following ratio (Proenca and Soukiazis, 2005):

$$(2) \quad IN_{i,t} = \frac{GDP_{i,t}}{CPI_{i,t} * POP_{i,t}}$$

where, GDP, POP and CPI are Gross Domestic Product, Total Population and Consumer Price Index of the sending country, respectively. The source of the data is OECD (2015), National Accounts.

Moreover, in the study's model, lagged value of the logarithm of tourists' numbers who have entered into Cyprus is used as the variable of expectations and habits. Hence, travelling to the destination country and expressing their pleasure and desirability of trip to the mentioned country, the tourists will be more willing to travel back to this country, since, travelling back to a country to which one has previously travelled is less risky and more attractive than travelling into a new country (Heidari and Taghipoor, 2012).

Another important determinant of the demand for tourism is relative price between the receiving and the sending countries. Relative price is given by the ratio of the price index level of the receiving country (Cyprus) and the sending country adjusted by the bilateral exchange rate (Proenca and Soukiazis, 2005):

$$(3) \quad PR_{i,t} = \frac{CPI_{c,t}}{CPI_{i,t} * EX_{i,t}}$$

where, CPI_c and CPI_i are the Consumer Price Indexes in Cyprus and the sending country, respectively; and EX_i is the real effective exchange rate of the sending country with respect to Cyprus. The source of the Cypriot data is CTO and OECD for the other variables.

The other variable in this study is a more general supply measure related to infrastructures (airports, roads, railways, hospitals, and telecommunications, among others) which we believe may have welfare effects on the daily lives of the tourists that visit Cyprus. The number of airports and travel agencies in Cyprus is used as a proxy to capture the welfare effects emanated from public infrastructure networks (Proenca and Soukiazis, 2005). The data for this variable in Cyprus is collected from the OECD (2015), National Accounts.

Foreign trade is another independent variable in this study. To measure this variable the following equation is used (Heidari and Taghipoor, 2012):

$$(4) \quad TRD_{i,t} = \frac{X_{i,t} + M_{i,t}}{GDP_{i,t} + GDP_c}$$

In this equation, $X_{i,t}$, $M_{i,t}$ and $GDP_{i,t}$ are respectively representative of export, import and gross domestic product of the sending country, and GDP_c stands for gross domestic product of Cyprus.

Unemployment rate, as another macroeconomic variable affects tourism demand. Taken together, it is plausible to argue that unemployment levels, having a major effect on real wages, as well as people's level of happiness and wellbeing, could affect the level of tourism activity (Gounopoulos et al., 2012). Information on Cyprus unemployment rate in the studied countries is derived from Cystat (Statistic Service of Cyprus).

A dummy variable (D_1) is used to capture the effects of the Cypriot integration in the EU. The dummy variable takes the value of one in the years followed the accession to the EEC (since 2004) and zero in the years before the accession. The idea is to examine if the border openness with the accession of Cyprus in the EEC provoked a higher inflow of tourists into the country (Proenca and Soukiazis, 2005). Having defined the variables to include in the model we are now able to present the full specification of the demand function of tourism in Cyprus in a log linear form:

$$(5) \quad TR_{i,t} = \alpha_0 + \beta_1 INC_{i,t} + \beta_2 PR_{i,t} + \beta_3 EXP_{i,t} + \beta_4 INFR_{i,t} + \beta_5 TRD_{i,t} + \beta_6 UNMP_{i,t} + \beta_7 D_1 + \varepsilon_0$$

Where, $TR_{i,t}$ is the tourism number ratio in the host country (Cyprus);
 $INC_{i,t}$ is real per capita income of the sending countries;
 $PR_{i,t}$ is relative price between the host and sending countries;
 $EXP_{i,t}$ is tourism expectations and habits of the sending countries;
 $INFR_{i,t}$ is infrastructure investment in the host country;
 $TRD_{i,t}$ is international trade between the host and sending countries;
 $UNMP_{i,t}$ is the unemployment rate in the host country;
 $D1$ is dummy variables to capture the integration effects;
 $\varepsilon_{i,t}$ is the stochastic error.

The tourism demand model is estimated in a log-linear model where both the dependent and independent variable are expressed in logarithms. It is usual to apply this transformation to economic variables as it reduces heteroskedasticity and makes the variables to be consistent with a Gaussian distribution, which can take values on the real line. The use of logarithm also enables the estimated coefficients to be interpreted as elasticity. The model for estimation of the tourism demand can be expressed in log-linear form as:

$$(6) \quad \ln TR_{i,t} = \alpha_0 + \beta_1 \ln INC_{i,t} + \beta_2 \ln PR_{i,t} + \beta_3 \ln EXP_{i,t} + \beta_4 \ln INFR_{i,t} + \beta_5 \ln TRD_{i,t} + \beta_6 \ln UNMP_{i,t} + \beta_7 D_1 + \varepsilon_0$$

Where the \ln in front of the variables denotes logarithm Song et al. (2009).

The data are organized in a panel form with $i = 7$ and $t = 18$ (for a period of 18 years from 1996 to 2013) giving a total of 126 observations. Annual data is preferable in order to avoid seasonality problems which are dominant in this sector.

4. Data Analysis

To provide an overview of the important characteristics of the calculated variables, some descriptive statistic concepts of these variables are shown in table 1:

Table 1: Descriptive statistics of the study

Variable	Number of visits	Min	Max	Mean	SD
Tourism demand	126	0.1	0.6	0.11	0.16
Relative income	126	47.8	551.22	320.04	123.74
Relative price	126	0.01	0.1	0.129	0.013
International trade	126	0.00	0.09	0.028	0.019
Infrastructure	126	10600	19399	14883.77	2987.41
Unemployment	126	3.1	15.9	5.51	3.26

The highest demand for tourism in Cyprus, with the value of 0.6, belongs to the UK in 2004. While the lowest demand, with the value of 0.1, belongs to the Netherlands in 2013. Moreover, the mean of demand for Cyprus tourism for seven subject countries over the years 1996-2013, has been obtained 0.11. The Netherlands and Russia, respectively in 2008 and 1999, have had the highest and lowest relative income during the studied time period, and the average income in this period has been 320.04. According to the values, the maximum and minimum relative price is respectively 0.1 and 0.01, that Russia and Sweden in 1996 have respectively experienced the highest and lowest tourism cost in Cyprus. Furthermore, the

average cost of tourism in Cyprus has been 0.129. The minimum and maximum values of international trade have been 0 and 0.09, implying that no substantial exports and imports have occurred between Sweden and Cyprus in 1996 and 1997, and the highest volume of Cyprus foreign trade has been with Swede in 2000. In terms of tourism infrastructure, that is the number of airlines and travel agencies, the best situation in Cyprus has been in 2008 with the number of 19399 and the weakest situation has been in 1996 with the number of 10600. The average number of active airline companies and tourism agencies in Cyprus and during this period (1996-2013) has been 14,883. Finally, the lowest unemployment rate in Cyprus, with the rate of 3.1%, has happened in 1996, while, the highest unemployment rate, that is 15.3%, has occurred in 2013. In general, an average unemployment rate of 5.51% has been experienced in this country.

The study's hypotheses are tested in continue. In GMM method, the model of tourism demand is estimated in four states of fixed effect, random effect, difference, and orthogonal deviation, so that the obtained results can be compared with each other in these four states. The results obtained from the four mentioned states are shown in table 2:

Table 2: Estimating tourism demand function based on GMM method

Variable	Fixed Effect		Random Effect		Difference		Orthogonal Deviation	
	Coefficient	t statistic (P value)	Coefficient	t statistic (P value)	Coefficient	t statistic (P value)	Coefficient	t statistic (P value)
Constant	3.65	5.5 (0.000)	2.88	6.42 (0.003)	3.1	3.98 (0.012)	2.64	4.77 (0.000)
TA (-1)	0.78	7.04 (0.036)	0.65	6.13 (0.028)	0.59	7.11 (0.039)	0.69	5.09 (0.001)
INC	1.12	2.3 (0.03)	1.43	2.01 (0.042)	0.98	2.36 (0.039)	1.08	2.43 (0.02)
PR	-6.54	-9.54 (0.000)	-8.76	-7.52 (0.025)	-5.47	-12.03 (0.009)	-7.01	-8.96 (0.000)
TRD	11.2	4.03 (0.003)	9.86	5.05 (0.000)	11.23	8.83 (0.000)	8.76	2.54 (0.013)
UNMP	2.54	0.7 (0.481)	1.98	0.89 (0.533)	2.03	1.03 (0.349)	2.65	0.87 (0.412)
D1	0.03	1.21 (0.54)	1.01	0.54 (0.707)	1.23	1.78 (0.176)	0.86	0.7 (0.112)
J-Statistic (P Value)	19.26 (0.001)		14.34 (0.000)		24.04 (0.01)		17.12 (0.007)	
Instrument Rank	7		7		7		7	

According to the results of the table 2, the significance level of relative income has been obtained smaller than 0.05, indicating that this variable has a significant impact upon tourism demand. As the obtained coefficient is positive, it can be concluded that improving the level of relative income in the countries that send tourist, increases the demand for tourism in Cyprus. Since tourism is considered usually a normal or luxury good, this variable shows more sensitivity to income level and as one of the key variables is included in the demand function.

Regarding the relative price, the level of significance is also smaller than 0.05. Hence, the influence of this variable on tourism demand is confirmed as well. The negative relative price shows that, through rising cost of tourism for the countries of origin, the demand of these countries to visit Cyprus has decreased. The literature of the tourism demand also shows that tourists, in order to maximize their expected desirability, are highly sensitive about tourism costs.

In a similar way, the significance level of expectations and habits variable is also smaller than 0.05, implying its significant impact on tourism demand. The coefficient of this variable is also positive based on which, it can be concluded that tourists' expectations and habits have had impact upon their demand to visit Cyprus. The reason to achieve such a result is that, travelling to the destination country and expressing their pleasure and desirability of trip to the mentioned country, the tourists will be more willing to travel back to that country, because, journey back to a country to which one has previously travelled is less risky and more attractive than travelling into a new foreign country.

Finally, based on the significance level of foreign/international trade, its impact is confirmed on Cyprus tourism demand. The positive coefficient of this variable indicates that the expansion of foreign trade between the countries of origin and Cyprus makes more tourists enter into Cyprus and spend more money in this country. The expansion of trade between countries of origin and the destination country often leads to the continuation of travels to the destination country.

Finally, according to the results of table 1, the significance level of infrastructure, unemployment rate and virtual variable is higher than 0.05 and, thus, their impact on Cyprus tourism demand is rejected. Therefore, one cannot expect that the development of infrastructure, unemployment and even Cyprus membership in the European Union have had a very significant impact on the number of tourists travel to Cyprus and the money they spend in this country.

Moreover, J-statistic indicates the significance of the total model. As the significance of level of J-statistic is lower than 0.05, it can be concluded that the estimated models are significant in all four states of fixed effect, random effect, difference and orthogonal deviation.

5. Conclusion and Recommendations

Nowadays, owing to the importance of tourism and its role in the economic and cultural development of different countries, paying attention to this industry and effort to empower and introduce tourist attractions, with an emphasis on strategic planning, seems essential. Regarding Cyprus, as one of the world's major tourist destinations, a great deal of economic growth in this country is due to the foreign currency revenues earned by attracting foreign tourists. In this regard, the most important issue is to identify the factors that can influence the demand for Cyprus tourism. Reviewing the literature of the study showed that the influential factors can be divided into a number of main categories including macroeconomic, sociological, political and so forth. In this regard, the present study, through considering the most important macroeconomic factors and non-economic indicators such as the level of income in the countries of origin, the relative costs of tourism, tourists' expectations and habits, tourism infrastructures in Cyprus, international trade exchanges between Cyprus and the countries of origin, and the level of unemployment in Cyprus, as well as considering the countries of England, Russia, Germany, the Netherlands, Greece and France as the countries

of origin (countries that send tourist). The present study is an attempt to estimate the function of Cyprus tourism demand over the years 1996-2013. The results obtained from the estimation of tourism functions by using the statistical approach of dynamic panel data and GMM show that the variables of relative income, expectations and habits, and foreign trade have had positive impact on the Cyprus tourism demand. Moreover, relative price, as the study's another factor, had a negative impact on the Cyprus tourism demand. Finally, no significant relationship was found between the variables of infrastructures and unemployment rate in Cyprus, and the costs spent by the tourists in this country.

According to the results of this study, the following suggestions are offered to the tourism-related policymakers in order to accelerate the developmental process of tourism in Cyprus:

- In selecting the target markets to attract foreign tourists, policymakers of Cyprus tourism industry are recommended to focus on the countries with a high general level of income.
- Adopting such appropriate policies as lowering the tariffs, limitations and trade barriers, the country's economic policymakers are recommended to increase international exports and imports and thereby contribute to tourism development.
- Given the negative impact of relative costs (the ratio of prices in the countries of origin and destination), through observing financial and monetary disciplines, policymakers can reduce the general level of prices and control inflation rate and, thereby, in addition to maintaining the competitiveness of Cypriot economy in the region, contribute to the development of the country's tourism industry.
- Given the significant and direct impact of expectations and habits on the foreign demand of Cyprus tourism, tourism and economic experts are suggested to apply appropriate policies and, thereby, provide the tourists with inclusive and sustainable security and an attractive environment as well.

The most important limitation this study faced with was the access to some required data. In this regard, researchers have eliminated the variables used in estimating the function of tourism demand such as the variable of tourism costs in the alternative countries.

The future researchers are suggested to estimate the function of Cyprus tourism demand by considering other influential factors. Moreover, they are recommended to, using time series method, estimate the function of tourism demand and compare the results with the findings of panel data method.

6. References

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