



The Study of Factors Influencing Tourism Demand with Emphasis on the Degree of Openness of the Economy

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Abstract: Tourism as the most important and most lucrative industries in the world in the third millennium and can cause supply of foreign currencies, create jobs in the service and manufacturing sectors and help increase government revenues. Meanwhile, the role of trade is very important, because it can be said one of the factors that can affect tourism demand is trade. Trade can be raised the important and influential factors in creating the necessary infrastructure and investment in the destination countries. For this reason, this study attempts to examine the impact of trade on tourism demand in selected developing countries in period of 1999 to 2015 using GMM method. The results show that trade; real effective exchange rate, per capita income and economic security have positive effect on tourism demand.

Keywords: Tourism Demand, Degree of Openness of the Economy, Developing Countries, GMM Methods.

1. Introduction

With the 21st century starting, tourism has become one of the most high-payment industries of the world and there is a compact competition between many countries of the world to attract tourists; tourism industry has dedicated an important portion of economic and commercial activities to itself in developed and developing countries with its own specialties (Taghavi et al., 2012: 28). This industry has been considered by many politicians and planners of political systems and application managers in different countries as an activity which has exhibited the ability of affecting the process of equal and wise development in the whole world (Ebrahimzadeh and Agassizadeh, 2009: 108). Tourism is one of the massive forces shaping our world today which has had interesting economic advantages for societies and has a special role on regional levels and internationalizing its role (Tucker, 2003: 1). Also this industry is considered as a dynamic force in equalizing societies and commoditizing cultures internationally. Economically, tourism is the most high-income industrial commodity for many nations (Theobald, 2005: 3).

Nowadays, tourism is considered as one of the leading sectors in world's economy and offers a big source of incomes, employment, exports and tax. According to statistics given by United Nations World Tourism Organization (UNWTO), the income of all world countries from an international tourism location in 1950 was 2.1 billion dollars which reached 856 billion dollars in 2007 and one trillion dollars in 2010 (UNWTO, 2012). According to statistics given by World Travel and Tourism Council (WTTC), in year 2014, tourism industry has helped 7580 billion U.S dollars (9.8 percent of the world's gross domestic production) to the world's economy and during the year, 1 billion 133 million tourists have traveled around the world. UNWTO predicts that in year 2030 the number of international tourists will reach 1 billion and 800 million. Considering this amount of financial exchanges, tourism can result in increase of economic variety and elimination of single-product economy in a country. Because of having high multiplier effect and inclusion of various industries such as staying, transportation, energy (fuel), food and drinks provision, etc., this industry can activate the engines of the economy of countries (Nazari et al., 2017: 219).

Also according to WTTC, over 276 million jobs have been created by tourism around the world which contains 10.7 percent of all the jobs in the world. Because of employment of the youth in this industry, countries suffering from unemployment problems take use of tourism as a tool for solving these problems. Additionally, the pollution caused by tourism is much less comparing to other production sectors. Because of that, many countries by apply strategies of development based on tourism, make more effort to develop tourism industry, so that the income of tourism is considered the biggest source of exports income for some small developing countries and sometimes includes more than a quarter of their gross domestic production (Yang et al., 2010: 829).

The growth of the tourism industry is due to the multifaceted effects of countries. Establishing a balance and balance in the status of payments, economic diversity, rising incomes and creating job opportunities are the consequences of this industry. Meanwhile, achieving sustainable economic growth is one of the main indicators of progress for developing countries. Tourism includes the bulk of the country's economic income and 10% of its gross national product. In at least one third of developing countries, tourists are the main source of income and are in fact generating economic revenues for countries. For this reason, the significant growth of tourism in the last 50 years has been considered as one of the most important economic and social phenomena of the 21st century. Tourism has overshadowed all the economic sectors and has been influential in the global economic activity. It also has a huge impact on the economic, social, cultural and environmental spheres both globally and nationally. Tourism can play an important role in the stimulus of economic development by contributing to three main goals of developing countries that generate income, employment and income from foreign exchange inflows. This industry creates good job opportunities for different social groups and, as a result, can play an important role in eradicating poverty in developing countries.

In addition, tourism encourages the government of each country to develop its infrastructure, also plays a role in balancing national payments. In other words, tourism is considered a powerful engine of progress in developing countries. Tourism development as a set of economic activities has a significant impact on strengthening the economic foundations of societies, and its role is important, as a new source for job creation, monetization, more tax receipts, currency attraction and infrastructure strengthening (Holzner, 2010: 7-14). On the other hand, the awareness of societies that tourism provides a very substantial and substantial source of foreign exchange income to the economy of a country has led tourism to become very broadly conceptualized in various economic, social and cultural dimensions (Khani et al., 2012: 112). Many countries consider the tourism industry to be the main source of income, employment, private sector growth and infrastructure development (Ketabfroush et al.; 2013, He and Zheng, 2011) and in this way, these countries have been able to participate actively and consciously in the field of global communications and information, provide more and more development opportunities for their people (Ranjpour et al., 2011; Ferrari et al., 2018).

Therefore, we can say that special attention to the concept of tourism demand in various countries seems very important and vital. For this purpose, the present study is trying to consider the impact of trade on tourism demand in selected developing countries in period of 1999 to 2015 using GMM method.

2. Theoretical and Empirical Literature Review

2.1. Tourism Demand

Originally, economic development in any country requires investment in its various economic activities and sectors (Shakeri and Salimi, 2006: 1). One of the sectors which have the ability of attracting domestic and foreign capital and consequently economic development is tourism (Khani et al., 2012: 112). Therefore, required conditions for the development of tourism as an important strategy from economic, social and cultural aspects. The first reason of tourism development in many countries is taking use of its economic advantage, however there are other reasons offered about this. (Yavari et al., 2010: 206).

Alongside these economic advantages, there are special features in this industry which slow its growth and development. Since tourism is considered as a service industry, it also has one of the primary features of services which is mortality and its commodities being not savable. It means the commodities cannot be saved to be used in the future. This feature is clear in transportation and residence section. So being aware of the demands of tourists in the future and following that, management of provision is one of the factors affecting planning and as a result, success in tourism industry. The activists of the tourism industry are also looking to reduce their risk of decision making, which means to reduce the possibility of their decisions ending as a failure. One important way of reducing risks, is to determine definite events of the future and the industry environment which can happen easily by predicting demands. Additionally,

most of the activities of the provision sector are related to investments in big amounts and long-term. Therefore the future demand must be estimated correctly in order to prevent the costs of capacity increase or uncreated demand opportunities (Nazari et al., 2017: 220). Knowing, describing and analyzing the current demands and predicting the future demands is one of the most important steps in policy making in any field. Because of its features such as fragile structure and being sensitive to environmental changes and including various industries, this subject has special importance in tourism. Analyzing tourism demands is considerable from a few aspects. First, the policy makers of the vast section of the country need to analyze the progress and determine demands. Calculating the amount of demands of tourism can be used as the help of tourism to the country's national economy and offer a guide for using and dedicating general resources and the budget of the country. Second, the decision makers of tourism sector can provide with better planning and strategies for improving and developing sections of tourism such as attractions and infrastructures and increase the preparation of the destination for hosting international tourists by knowing the amount of tourism demands and the importance of factors included in the demands. Also the activists of the private sector and actual and potential investors will be able to make decent decisions for continuing their activity in tourism industry by having the map of the progress and determined future of tourism of the country.

2.2. Trade

Trade has an important role in the economy of countries. Most of the countries are looking for developing their trade with other countries and producing commodities based on relative advantage in order to increase economic growth. Foreign trade is very important in the complex of the economic activities and growth and development of countries (Ghanbari et al., 2010: 60). Nowadays the foreign trade sector is considered as one of the most important economic sectors in most of developing countries. Recent studies have shown that only countries can have innovation of action in this section that have a special plan considering the long-term social-economic aims. It is obvious that for applying decent policies in foreign trade sector, more accurate awareness of exports and imports is required (Tashkini and Bastani, 2006: 206). Trade is defined according to imports and exports. For exports has an important role in the advancement of countries, various aspects of the impacts of exports are wider than imports. So there are two approaches base on production factors and based on technology according to determining factors of exports function. The one based on production factors is an approach in which the relative advantage of the corporations is determined according to primary production factors. In this case, the relative advantage is built through the existence of natural monopolies and based on abundances of primary production factors and stability of technology. The one based on technology is an approach in which the relative advantage is built on the quality of commodities of corporations and primary services. In this approach, the function of exports on investments of the corporations for taking use of new technologies will result in new development (Mobarak, 2010: 40). The progress of trade in world has had highs and lows. We can say that the source of today's Scientific and Contemporary Economics goes back to publishing of Adam Smith's book called *Wealth of Nations* in year 1776. Anyways, written forms and works related to trade dates back even more in countries such as England, Spain, France, Portugal and Netherlands; when these countries started moving towards modern economy and it was before the era of Adam Smith (Salvatore, 2010: 44). In this subject we can mention Mercantilism's theory. After the theory of tradespeople, the viewpoint of Classics was born. In the theory of classics, Adam Smith and David Ricardo have offered their own ideas by absolute and relative advantage theories. In year 1836 the theory of costs of opportunities was offered by Haberler. For about three decades (1930-1950) the theory of Heksher and Ohlin was discussed in economic fields. During years 1960-1970 relative advantage theories of Linder, relative revealed advantage of Balasa and Cycle theory of Vernon were first declared. In 1980s, the theory of technology gap and Heksher and Ohlin's new theory and finally the theory of competitive advantage in 1990 were given.

2.3. Previous Studies

Croes et al. (2018) examines the relationship between quality of life (QOL), tourism specialization, and economic growth as applied to small island destinations in Malta. Results indicate that the relationship between tourism specialization and both QOL and economic growth is only partial. Tourism specialization improves the residents QOL but, only on the short term. The study enhances the existing empirical evidence of the literature that examines the relationship between tourism specialization and residents' QOL in the medium- and long-term in that it controls for endogeneity. The translog production function methodology is novel as it allows for examining tourism returns and the factors that

shape tourism preferences. This permits supply and demand variables to be combined into a production and consumption system.

[Algieri et al. \(2018\)](#) studied the determinants of competitive advantages in tourism services for the EU-28 countries over the period 2000–2013. After having extended the Balassa methodology to measure competitive advantages, a dynamic panel data model is implemented to explain their drivers. The econometric analysis indicates that specific factor-proportions variables, as well as variables related to the new trade theory, contribute significantly to the explanation of international competitive advantages in tourism. At the same time, factors related to the new trade theory help strengthening these advantages. Particularly interesting seems to be our finding about the negative statistical association between competitive advantages in tourism and the overall efficiency of the country, measured by per capita GDP. Some policy and managerial implications conclude the work.

[Yang et al. \(2018\)](#) have estimated several Poisson gravity models incorporating a CD measure based on national cultural scores from the World Values Survey (WVS) using international tourist arrival data between 94 countries for the period 1995–2012. Their estimation results show a negative and significant effect of CD on international tourist flows, the elasticity of which is 0.158, and the effect appears significantly smaller between countries with historical colonial linkage. Most notably, the tourism-inhibiting effect of CD began a downward trend in 2003. In particular, they find that economic globalization and technology advancement can be used to explain the declining effect of CD. Major conclusions are substantiated in a robustness check using two alternative CD measures.

[Khazaei et al. \(2018\)](#) evaluated the suitability of Torghabeh Shandiz in Khorasan Razavi Province, Iran, for intensive tourism development. Due to having a sensitive and fragile ecosystem, consisting of mainly erodible soils and vulnerable vegetation, a non-compensatory framework was developed and applied. To do so, a complete list of 60 evaluation criteria was screened by the Simple Additive Weighting (SAW) method, resulting in 25 criteria divided into four categories including environmental, economic, socio-cultural, and managerial. The results showed that limitations in some criteria such as soil erosion and soil fertility resulted in no highly suitable regions for intensive tourism development, such that about 85% of the region was not suitable for intensive tourism development. However, this kind of tourism is more than extensive tourism development in the study area, thereby highlighting the importance of adopting land-use planning strategies aiming at sustainable development.

[Kim et al. \(2018\)](#) studied the effects of the overall quality of national governance institutions of a country, along with the quality of some of its key characteristics on international tourism inflows and the revenues a country derives from them. They argue that increases in institutional quality reduce transaction costs and risks faced by both suppliers of international tourist services and tourists. In this study hypothesize that countries with ‘higher quality’ of governance institutions are likely to attract more international tourists and derive more revenues from them. Their hypothesis is tested using panel data drawn from 108 countries between 1996 to 2011. The results strongly support the hypothesis and show that regulatory quality and the rule of law are the governance characteristics that have the most impact on international tourism flows. Improvement of institutional quality has more impact on tourism in high income countries than in emerging economies. The results are robust to different estimation methods, different measures of international tourism and institutional quality.

[Athanasopoulos et al. \(2018\)](#) introduced bootstrap aggregation (bagging) in modeling and forecasting tourism demand. The aim of this study is to improve the forecast accuracy of predictive regressions while considering fully automated variable selection processes which are particularly useful in industry applications. The procedures considered for variable selection are the general-to-specific (GETS) approach based on statistical inference and stepwise search procedures based on a measure of predictive accuracy (MPA). The evidence based on tourist arrivals from six source markets to Australia overwhelmingly suggests that bagging is effective for improving the forecasting accuracy of the models considered.

[Ferrari et al. \(2018\)](#) examined the effects of tourists' demand on the economic system of Tuscany using a multiplier model based on the (64x64) regional Social Accounting Matrix 2011. To this end, after identifying the exogenous and endogenous accounts (variables), they obtain endogenous account coefficients and impact multipliers. Evidence exists that tourism activity is well integrated into the regional economic system. Moreover, this activity has a remarkable impact on food production, value added, and households' expenditure. A policy simulation shows that a positive shock in tourists' expenditure results in an overall positive increase in demand for agriculture and industry products, as well as in an increase in regional value added, and institutional sector activity.

[Marquardt \(2018\)](#) investigated the problems associated with tourism cooperation and pro-poor impact of the work. The results show that development cooperation operates in a difficult environment of

new economic dynamics and long standing political structures. Serious challenges encountered in the projects were the lack of qualified personnel, the low capacity in tourism planning and management and insufficient cooperation with tourism economy. Generally, foreign aid helped to lay a foundation for qualitative development and successfully created model projects for sustainable alternative tourism. But results regarding poverty reduction were mixed. The donors therefore refocused their interventions: they adopt a stronger pro-poor approach, implement a broad-based vocational training scheme and they now work on inclusive value chain management of mainstream regional tourism. Besides that, creating an enabling environment for small and medium tourism enterprises is another priority. They work in Laos under rather unfavorable conditions and might soon be overwhelmed in the globalization process by international competitors.

[Shakouri et al. \(2017\)](#) have investigated the panel Granger causality relationship approach and variance decomposition to test whether domestic economic growth promote tourists' receipts, using international tourism receipts, real GDP per capita growth, exchange rate, financial development, and trade openness for Asian countries over the period of 1995-2014 and whether regional effects should be considered a product of incomes groups in selected Asian countries. Based on the findings of the Panel Granger tests and variance decomposition analysis, tourism receipts and economic growth should be considered in the analysis, since they provide valuable information for policymakers.

[Shahbaz et al. \(2017\)](#) investigated the tourism-growth nexus in Malaysia using time series quarterly data over the period 1975–2013. In this study, they examine the impact of tourism using two separate indicators – tourism receipts per capita and visitor arrivals per capita. Using the augmented Solow production function and the autoregressive distributed lag bounds procedure; they also incorporate trade openness and financial development and account for structural breaks in series. The results show the evidence of cointegration between the variables. Assessing the long-run results using both indicators of tourism demand, it is noted that the elasticity coefficient of tourism is 0.13 and 0.10 when considering visitor arrivals and tourism receipts (in per capita terms), respectively. Notably, the impact of tourism demand is marginally higher with visitor arrivals. The elasticity of trade openness is 0.19, that of financial development is 0.09 and that of capital share is 0.15. In the short run, the coefficient of tourism is marginally negative, and for financial development and trade openness, it is 0.01 and 0.18, respectively. The Granger causality tests show bidirectional causation between tourism and output per capita, financial development and tourism and trade openness and tourism demand, duly indicating the feedback or mutually reinforcing impact between the variables and providing evidence that tourism is central to enhancing the key sectors and the overall income level.

[Stauvermann and Kumar \(2017\)](#) examined the role of tourism demand and human capital investment. For this purpose, they studied a model for the demand for tourism in the context of a developing country. The parameters of the model are a tourist sector characterized by monopolistic competition, where human capital is the main factor of production and hotels have market power. Additionally, land use is marked by demand from both agricultural and tourism sectors. From the household side, a simplified OLG approach is developed to consider consumption, human activity and the number of children. A dynamic framework is therefore identified to investigate the long-run consequences of increasing labor productivity and lowering the fertility rate. If the supply-side policy leads to economic growth, the tourism led growth hypothesis is theoretically confirmed. It is concluded that an increase in labor productivity generates positive growth effects only if the demand for tourism is elastic, otherwise negative results arise.

[Khoshnevis and Khanalizadeh \(2017\)](#) studied the coefficients of the determinants of international tourism demand for the period 1995–2014 in the USA using the gravity framework. The analysis is based on a panel dataset of tourist arrivals among 14 countries using autoregressive distributed lag methods. The results show real gross domestic product, consumer price index, real exchange rate and certain specific events have a significant impact on international tourism demand. The income elasticity suggests that tourism is non-luxury goods, and prices and real exchange rate have negative relation to tourist arrivals. We also find that tourism transport infrastructure is a significant determinant of tourist arrivals into USA. This implies that infrastructure to reinforce taste formation is important to attract more international tourists to USA. In addition, results also suggest implications for public and private tourism authorities.

[Ribaldo and Figini \(2017\)](#) examined the puzzle of tourism demand at destinations hosting UNESCO world heritage sites. In this study they try to develop a comprehensive picture of tourism demand trends at UNESCO World Heritage Sites (WHSs) with the aim of providing evidence of any growth in demand for specific destinations after the listing of their sites. In contrast to previous literature, this article focuses on the smallest statistical unit (the municipality) to examine WHS impact on the destination. Analyzing 16 Italian WHSs, they show the most relevant trends in hospitality demand,

comparing tourism flows at destinations before and after listing. Data show that, on average, growth rates of tourism demand in the 5 years after WHS listing are not higher than growth rates in the 5 years before the listing, but a number of different patterns emerge. The policy and managerial implications of such findings are straightforward: at least for a mature destination like Italy, there is no statistical evidence that WHS listing is associated with accelerating market growth rates.

Ridderstaat and Croes (2017) examined whether money supply cycles in Canada, United Kingdom, and United States affect tourism demand cycles for Aruba and Barbados. Money supply data are, generally, more easily available than business cycle data (gross domestic product) and have the potential to influence tourism demand cycles. The results show that money supply cycles can impact the cyclical movements of tourism demand and that the impacts are asymmetric, depending on the stage of development of the cycles. These findings implicate the need for adequate policies to counter expected tourism performances below their trend.

Wai and Tsui (2017) studied the impact of New Zealand's low-cost carrier (LCC) on domestic tourism demand and growth. The panel data regression model and the two-stage least-square (2SLS) model (aims to control for the endogeneity effects) are used to empirically investigate the impact of LCC and the key determinants affecting New Zealand's domestic tourism using five regions (Auckland, Canterbury/Christchurch, Dunedin, Queenstown, and Wellington) from June 2009 to July 2015. The results show that the LCC's services, GDP per capita, the regional tourism indicators (accommodation, and food and beverage), and land transport costs affected New Zealand's domestic tourism. The policy implications of the key finding regarding the significance of the LCC's operations on New Zealand's domestic tourism (local/regional tourism authorities and tourism operators), airline competition between incumbent airline (Air New Zealand) and the LCC and airport authorities are discussed.

Shi and Li (2017) try to evaluate how South Korea's inbound tourist arrivals from China have been affected by the Middle East Respiratory Syndrome (MERS) outbreak. Using quarterly data, the autoregressive distributed lag model (ADLM) is performed to capture the influence of the MERS outbreak. Estimation results of the general ADLM reveal that the MERS outbreak has a significant adverse impact on the total inbound tourist arrivals from China, as well as on tour arrivals; however, for business, official, and other types of tourist arrivals, its influence is insignificant. Furthermore, the error correction model is estimated to demonstrate the long-run equilibrium and short-run dynamics among the underlying variables. Our analysis not only provides empirical evidence on evaluating the impact of the MERS outbreak on different types of tourism demand, but also identifies main determinants and suggests appropriate model specifications for each type of tourist arrivals.

Ngoasong and Kimbu (2016) try to examine the role of informal microfinance in situations in tourism entrepreneurship in Cameroon. The results show that collective action in informal microfinance institutions enabled entrepreneurial members to create small tourism firms.

Berda et al. (2015) studied the validity of the Tourism-Led Growth Hypothesis (TLGH) for these countries and demonstrated that the relationship between tourism and economic growth is not linear for Argentina and Brazil. However, the authors did not specify the format of the nonlinearity. They explored about the identity of these nonlinearities. The methodology combined the concepts of cointegration with the asymmetric adjustment thresholds. The results explained the nonlinearity in the case of Brazil that is modeled on the dynamics of the adjustment from transitory situations of disequilibrium between tourism and growth. It showed that an M-TAR adjustment mechanism is which best describes this behavior.

Kumar (2014) studied the dynamics of the relationship between information communication technology (ICT), tourism and financial development on economic growth in Vietnam over the period 1980- 2010 using the ARDL bounds testing model. The results showed that a bi directional causation existed between tourism and output per worker indicating that both tourism and output per worker were mutually reinforcing each other.

Sharma and Sharma (2014) studied the causal relationships between Gross Domestic Product (GDP) and receipts from tourism sector for India and Pakistan. Augmented Dickey-Fuller (ADF) for unit root, Johanson for cointegration and Granger causality test have been employed to examine the causal relation between GDP and receipts from tourism sector in India and Pakistan by using the data over the period of 1991-2012. The findings of the study showed the presence of unidirectional causality from tourism earnings to economic growth in India as well as for Pakistan.

Ketabforoush et al. (2013) studied the role tourism on growth in MENA countries in period 1999-2010 by using panel data. The results show that the entry of tourists to the countries in per capita economic growth has had a positive and significant effect so that we can say with a 1 percent increase in per capita tourist arrival growth in size 0/4 is increased.

Srinivasan et al. (2012) have attempted to examine the relationship between tourism and economic growth in Sri Lanka in the period 1969-2009 using ARDL model. The results that both short-term and long-term positive relationship exists between tourism and economic growth.

Paudyal (2012) studied the impact of tourism on economic growth in the period 1975-2010 in Nepal by using Granger method. Study suggests that there is a significant positive relationship between tourism and economic growth of the two strains.

Jafari et al. (2011) have looked at the relationship between tourism and economic growth in 20 developing countries using the P-VAR model in period 1995-2009. The results indicate that there is a positive relationship between tourism and economic growth in two-way.

He and Zheng (2011) in one study have analyzed the empirical relationship between tourism and economic growth in the period 1990-2009 models using VAR. The results show that there is a significant positive relationship between tourism and economic development. Also, economic growth requires the development of tourism.

Ranjpour et al. (2011) have investigated the hypothesis led to the development of tourism in Iran during the period 1968-2009 by using the Johansen model. The results that there is a positive relationship between tourism and economic growth in the long-term accumulation.

Kreishan (2010) in one study has examined the relationship between economic growth for Jordan's tourism revenues in the period 1970-2009 and by using VAR. The results indicate that there is a positive relationship between tourism and economic growth in Jordan.

Holzner (2010) the study aims to analyze the risk of Dutch disease effect on tourism development and growth models using panel data for 134 countries for the period 1970-2007 timeframe long run. The results indicate that tourism has a positive and significant effect on growth is a non-linear relationship.

Fayissa et al. (2009) have attempted to evaluate the contribution of tourism to economic growth and development in 17 countries in Latin America in the period 1995-2004 using panel data models. The results show that tourism contributes significantly to both the incoming current level of GDP and economic growth.

3. Econometric Methodology and Variables

3.1. Panel Data

Panel data is data from a (usually small) number of observations over time on a (usually large) number of cross-sectional units like individuals, households, firms, or governments. In other words, panel data analysis is a method of studying a particular subject within multiple sites, periodically observed over a defined time frame. With repeated observations of enough cross-sections, panel analysis permits the researcher to study the dynamics of change with short time series. The combination of time series with cross-sections can enhance the quality and quantity of data in ways that would be impossible using only one of these two dimensions (Gujarati, 2004). Some more advantages of panel data as given in 'Basic Econometrics' by Gujarati are:

- Since panel data relate to individuals, firms, states, countries, etc. over time, there is bound to be heterogeneity in these units. The techniques of panel data estimation can take such heterogeneity explicitly into account by allowing for individual-specific variables.
- By studying the repeated cross section of observations, panel data are better suited to study the dynamics of change.
- Panel data can better detect and measure effects that simply cannot be observed in pure cross-section or pure time series data.
- By making data available for several thousand units, panel data can minimize the bias that might result if we aggregate individuals or firms into broad aggregates.

3.2. Generalized Method of Moments(GMM)

Generalized Method of Moments (GMM) refers to a class of estimators which are constructed from exploiting the sample moment counterparts of population moment conditions (some-times known as orthogonally conditions) of the data generating model. GMM estimators have become widely used, for the following reasons (Hansen, 2007):

- GMM estimators have large sample properties that are easy to characterize in ways that facilitate comparison. A family of such estimators can be studied a priori in ways that make asymptotic efficiency comparisons easy. The method also provides a natural way to construct tests which take account of both sampling and estimation error.
- In practice, researchers find it useful that GMM estimators can be constructed without specifying the full data generating process (which would be required to write down the maximum likelihood estimator.) This characteristic has been exploited in analyzing partially specified economic models, in studying potentially dynamic models designed to match target moments, and in constructing stochastic discount factor models that link asset pricing to sources of macroeconomic risk.

To ensure the appropriate the method for estimating the model, Wald test and Sargan test is proposed. Wald test used for the significance regressors and Sargan test is used to prove the validity of instrumental variables.

3.3. Data and Variables

The study population consisting of 10 selected developing countries Brazil, Iran, Armenia, China, Malaysia, Pakistan, Thailand, Philippines, Russia and Saudi Arabia. Period is used 1999-2015. Time series data from these countries have been collected from WDI 2017. The model presented in this paper follows:

$$LTUR_{it} = \beta_0 + \beta_1 L(TUR_{t-1}) + \beta_2 L(TRADE_{it}) + \beta_3 L(REER_{it}) + \beta_4 L(PCI_{it}) + \beta_5 L(ES_{it}) + \varepsilon_i \quad (1)$$

$LTUR_{it}$ = Logarithm of number of tourist arrival as an indicator of tourism demand

$LTUR_{t-1}$ = Logarithm of first difference of the terms of TUR as an expectation of behavioral patterns of tourists

$LnTRADE_{it}$ = Logarithm of total exports and imports to GDP

$LnREER_{it}$ = Logarithm of Real effective exchange rate as an indicator of the relative costs of living in destination countries

$LnPCI_{it}$ = Logarithm of per capita income indicator (constant 2005 dollars)

$LnES_{it}$ = Logarithm of economic security indicator (private sector investment to GDP)

ε_{it} = random error

4. Empirical Analysis

4.1. Studying the Stationary of the Variables

One of the ways to avoid fake regression is to make sure of stationary of variables for studying the stationarity of the variables there are different tests like Levin, Lin and Chu (LLC), generalized Fisher-Dickey Fuller (ADF), Philips-Perron (PP), etc. In this study, Levin, Lin and Chu (LLC) test has been used, which is one of the most important tests of unit root in panel data. The results of this test are in [table 1](#) below:

Table 1. The results of the model variables using LLC test

Variables	T Statistics	Prob
TUR	-7.3721	0.0000
TRADE	-2.6343	0.0042
REER	-8.2404	0.0000
PCI	-4.8021	0.0000
ES	-6.7631	0.0000

Source: Research findings

According to the results of [table 1](#), for the group of selected developing countries in Levine, Lin and Chu(LLC) all the variables are in a stable level.

4.2. Estimating the model using Generalized Method of Moments (GMM)

[Table 2](#) shows the results of the effects of tourism on economic growth in selected countries with GMM method. In this table is given statistics relating to the Wald and the Sargan test.

Table 2. Results of the effects trade on tourism demand by using GMM

Variables	The first difference		
	Coefficients	T statistics	Prob
LTOUR(-1)	0.5750	3.2066	0.0000
LTRADE	0.1931	2.5891	0.0102
LREER	0.2104	2.1004	0.0367
LPCI	0.1834	5.2939	0.0000
LES	0.3217	5.006	0.0000
Wald Test	2647.7	(0.0000)	
Sargan Test	5.52	(0.35)	

Source: Research findings

The [table 2](#) showed that all coefficients have signs consistent with the theoretical basis and all coefficients are significant. According to the results, one percent increase in tourism demand with a time lag, trade, real effective exchange rate, per capita income and economic security respectively, 0/57, 0/19, 0/21, 0/18, 0/32% increase in tourism demand in the studied countries.

Trade also is an important and meaningful factor with positive effect on tourism demand. Decent economic situation for traveling and investment are among factors which can have a positive and meaningful impact on tourism demand. One of the valuable strategies for stable development of the regions is creating individual and commercial links and connections between the tourists and destinations. While individual links are more stable, organizational links have more variation as the motivators of travel and it seems like they have brought more value added for the regions. Generally, commercial tourists provide with more outstanding opportunities for making decisions according to which the destinations can be developed. One of the advantages of commercial travels compared to recreational family travels is their high costs. In most cases it has been observed that the elasticity of costs of tourism products for family recreational tourists has been more than commercial tourists and with increasing the prices of these products, the demand for them has reduced more. While commercial tourists show more flexibility to the costs of tourism products. In the end it should be said that nowadays many cities of the world are known as gathering poles and annually they have massive incomes through tourism.

Economists believe that the most important factor for motivating a consumer for buying a product is its price and most of the countries are tending to make their own products cheaper for the costumers of other countries in order to motivate them through Leverage the devaluation of their domestic currency and through this, they want to cause increase of production and exports and consequently, economic growth in their own country. Tourism services are also considered as one of the products of countries which can make spending money in one country economical by equality of the exchange rate of the two countries and these results in tourists' tendency to travel to a cheaper country. Countries are trying to make their own commodities more attractive for foreign consumers using the leverage the devaluation of domestic currency. International experiences also prove that not considering the political consequences of this phenomenon on the current situation, always and all the time tourism has taken advantage of this situation and this industry has become a trustworthy factor in economic growth.

The average income of the origin countries also has a positive impact on tourism demand. The amount of origin countries' income result in increase of demands for tourists going to the destination country by transferring the curve of demand to increase of demand.

Also creating trust and security in the countries is vital for presence of foreign investors. Security and tourism are two concepts depending on each other and related to each other in foreign and domestic events. Economic security and tourism also in a bilateral engagement can have both increasing and decreasing impacts. This means that increase (or decrease) of economic security causes the downturn of tourism or vice versa, therefore tourism has a direct relation with economic security. Creating economic security, facilitating and provision of the required welfare and service facilities for the tourists are among the primary responsibilities of governments about tourism.

Also, the Wald test is used to determine the significance of the model that according to the P-Value in this test, the model proved to be significant. Sargan test statistic distribution χ^2 is the degrees of freedom equal to the number of over-identifying restrictions and the test of the null hypothesis that there are no correlation tools disturbing components. By examining P-Value of the test; The results indicate the validity of the assumptions of estimates, namely, the tools are valid, the results confirm the validity of the results for interpretation.

5. Conclusions

Tourism is the biggest and thriving industry in the world and it is expected that this industry be the leading increasing industry in 21st century. This industry in all parts of the world is considered as one of the most important economic, social and political components and has a direct and indirect impact on the living conditions of the communities and the conditions of the places. The development of tourism as an economic activity has a significant impact in strengthening communities and sustainable economic foundation is its role as a new source of employment, income, tax receipts, attract foreign exchange and strengthen social infrastructure and can play a significant role in the supply of foreign exchange earnings growth and economic development.

The tourism industry is known to be the largest service industry in the world in terms of revenue generation. The growth of this industry has always led to many environmental, cultural, social, political and economic impacts. The tourism industry is one of the factors that have led to significant expansion in different countries. In many countries, the tourism industry is considered as the main source of income, employment, infrastructure development and private sector development and by the way, these countries have, knowingly and actively participated in the development of the global information and communications to bring the country to its own people. Development of the tourism industry is of immense importance for developing countries, as it faces problems such as high unemployment rates, curbing foreign exchange reserves, and the economy of a single product. As a result, the tourism industry, known as one of the most important and high-income industries in the world, can play a significant role in achieving these goals. Therefore, it is very important to pay attention to the characteristics of this industry in developing countries. In this regard, one of the factors that can be very influential is trade. Improving of the trade and creating an appropriate space for tourists can be a good solution to the growth and development of developing countries. To achieve this goal, this study attempted to investigate the effects of trade in tourism demand in 10 selected developing countries including Brazil, Iran, Armenia, China, Malaysia, Pakistan, Thailand, Philippines, Russia and Saudi Arabia in the period 1999-2015 were using the generalized method of moments(GMM). The results showed that trade; real effective exchange rate, per capita income and economic security have positive effects on tourism demand.

References

- Algieri, B., A. Aquino and M. Succurro (2018) 'International competitive advantages in tourism: An eclectic view', *Tourism Management Perspectives*, 25(1), 41-52.
- Athanasopoulos, G., H. Song and J.A. Sun (2018) 'Bagging in Tourism Demand Modeling and Forecasting', *Journal of Travel Research*, 57(1), 52-68.
- Berda, J.G, F. Pizzolon and B. Lanzilotta (2015) 'Dynamic relationship between tourism and economic growth in MERCOSUR countries: a nonlinear approach based on asymmetric time series models', *Economics Bulletin*, 36(2), 1-17.
- Croes, R., J. Ridderstaat and M. van Niekerk (2018) 'Connecting quality of life, tourism specialization, and economic growth in small island destinations: The case of Malta', *Tourism Management*, 65(4), 212-223.
- Ebrahimzadeh I, and M.A. Agassizadeh (2009) 'Analysis of factors affecting tourism development in the coastal zone of Chabahar with using Strategic SWOT', *Journal of Urban and Regional Studies and Research*, 1(1), 107-128.
- Fayissa, B., C. Nsiah and B. Tadasse (2009) 'Tourism and Economic Growth in Latin American Countries(LAC): Further Empirical Evidence', *Department of Economics and Finance, Working Papers*, 1, 1, March: 1-26. <http://capone.mtsu.edu/berc/working/TourismLAC03-5-09WP.pdf>
- Ferrari, G., J.M. Jiménez and L. Secondi (2018) 'Tourists' Expenditure in Tuscany and its impact on the regional economic system', *Journal of Cleaner Production*, 171(10), 1437-1446.
- Ghanbari, A., A. NikRavan L. Ageli (2010) 'Investigating the Factors Affecting Iran's Total Imports Under Restriction of Foreign Currency Constraints', *Economic Research*, 2(4), 59-82.
- Gujarati, D. (2004) *Basic Econometrics*, New York: McGraw-Hill,
- Hansen, L.P. (2007) 'Generalized Method of Moments Estimation', *Department of Economics University of Chicago*, June, 2007: 1-15.
- He, L.H. and X.G. Zheng (2011) 'Empirical Analysis on the Relationship between Tourism Development and Economic Growth in Sichuan', *Journal of Agricultural Science*, 3(1), 212-217.
- Holzner, M. (2010) 'Tourism and Economic Development: The Beach Disease?', *The Vienna institute for international economic studies, Working Papers*, 66, June: 1-43.

- Jafari Samimi, A., S. Sadeghi and S. Sadeghi (2011) 'Tourism and Economic Growth in Developing Countries: P-VAR Approach', *Middle-East Journal of Scientific Research*, 10(1), 28-32.
- Ketabforoush Badri, A., M. Dizaj and S. Shargi (2013) 'The role of tourism in economic growth in selected MENA countries', *Proceedings of the second national conference on tourism and nature of Iran*, Shahid Mofatteh University, Hamedan, Iran.
- Khani, F., A. Gandjiakh A. Ghanbari Nasab and N. Akbari Samani (2012) 'The role of tourism in economic development of the coastal market of Turkmen city', *Journal of human geography research*, 44(4), 111-128.
- Khazae Fadafan, F., A. Danehkar and S. Pourebrahim (2018) 'Developing a non-compensatory approach to identify suitable zones for intensive tourism in an environmentally sensitive landscape', *Ecological Indicators*, 87, April: 152-166.
- Khoshnevis Yazdi, S. and B. Khanalizadeh (2017) 'Tourism demand: a panel data approach', *Journal Current Issues in Tourism*, 20(8), 787-800.
- Kim, Y.R., S. Saha I. Vertinsky and C. Park (2018), 'The Impact of National Institutional Quality on International Tourism Inflows: A Cross-country Evidence', *Tourism Analysis*, 2018, https://www.researchgate.net/profile/Young_Rae_Kim3/publication/321670227_The_Impact_of_National_Institutional_Quality_on_International_Tourism_Inflows_A_Crosscountry_Evidence/links/5a2a4620f7e9b63e5355680c/The-Impact-ofNational-Institutional-Quality-on-International-Tourism-Inflows-Across-country-Evidence.pdf
- Kreishan, F.M. (2010) 'Tourism and Economic Growth: The Case of Jordan', *European Journal of Social Sciences*, 15(2), 229-234.
- Kumar, R.R. (2014) 'Exploring the role of technology, tourism and financial development: An empirical study of Vietnam', *Quality and Quantity*, 48(5) 2881-2898.
- Marquardt, D. (2018) 'Tourism Development Cooperation in a Changing Economic Environment—Impacts and Challenges in Lao P.D.R', *Tourism in Transitions*, 1(4), 117-136.
- Mobarak, A. (2010) 'The Effect of Investing in Research and Development on Export in Iran', *Journal of Parks and Growth Centers*, 7(25), 39-47.
- Nazari, M., Esfidani, M.R., Tabatabbati, M. (2017), 'Assessing the factors affecting the attraction of international tourists using Gravity model', *Journal of Economic Research*, 52(1) 215-243.
- Ngoasong MZ, and AN. Kimbu (2016) 'Informal micro finance institutions and development-led tourism entrepreneurship', *Tourism Management*, 52(2), 430-439.
- Paudyal, S. (2012) 'Does Tourism Really Matter for Economic Growth Evidence from Nepal', *NRB Economic Review*, 24(1), 48-66.
- Ranjpour R., Z. Karimi Takanlu and M.H. Najafinasab (2011) 'Hypothesis led to the development of tourism in Iran during 1968-2009', *Journal of Economic Way of Thought*, 4(6), 115-134.
- Ribaudo, G. and P. Figini (2017) 'The Puzzle of Tourism Demand at Destinations Hosting UNESCO World Heritage Sites, An Analysis of Tourism Flows for Italy', *Journal of Travel Research*, 56(4), 521-542.
- Ridderstaat, J. and R. Croes (2017) 'The Link between Money Supply and Tourism Demand Cycles a Case Study of Two Caribbean Destinations', *Journal of Travel Research*, 56(2), 187-205.
- Salvatore, D. (2010) *International Economics*, New Jersey: John Wiley
- Shahbaz, M., R.R. Kumar S. Ivanov and N. Loganathan (2017) 'The nexus between tourism demand and output per capita with the relative importance of trade openness and financial development A study of Malaysia', *Tourism Economics*, 23(1), 168-186.
- Shakouri, B., S. Khoshnevis Yazdi N. Nategian and N. Shikhezai (2017) 'International Tourism and Economic Growth and Trade: Variance Decomposition Analysis', *Journal of Tourism & Hospitality*, 6(3), 1-11.
- Shakeri, A., Salimi, F. (2006). Factors Affecting Investment in Chabahar and Prioritizing Them Using AHP Mathematical Techniques, *Economic Bulletin*, 20(4), 28-42.
- Sharma, N. and R. Sharma (2014) 'Causal Links Between GDP and Tourism: A Comparative Study of India and Pakistan', *Journal of Management and Technology*, 9(2), 55-63.
- Shi, W. and K.X. Li (2017) 'Impact of unexpected events on inbound tourism demand modeling: evidence of Middle East Respiratory Syndrome outbreak in South Korea', *Journal Asia Pacific Journal of Tourism Research*, 22(3), 344-356.
- Srinivasan, P., P.K. Santhosh Kumar and L. Ganesh (2012) 'Tourism and Economic Growth in Sri Lanka: An ARDL Bounds Testing Approach', *The Romanian Economic Journal*, 45(4), 211-226.

- Stauvermann, R., R.R. Kumar (2017) 'Productivity growth and income in the tourism sector: Role of tourism demand and human capital investment', *Tourism Management*, 61, August 2017: 426-433.
- Taghavi M., H.R. Varesi and A. Safarabadi (2012) 'Factors in Urban Tourism Development Kermanshah', *Journal of Geography in Iran*, 1(33), 27-47.
- Tashkini, A., A. Bastani (2006) 'Estimating the Demand Function for Iranian Economy', *Journal of Commercial Law*, 2(40), 205-226.
- Tucker, H. (2003) *Living with Tourism Negotiating identities in a Turkish village*, London: Routledge, Taylor and Francis group.
- Theobald, W. F. (2005) *Global Tourism*, London: Elsevier.
- UNWTO (2012), UNWTO Annual Report 2012, World Tourism Organization UNWTO
- Wai, K. H. Tsui (2017) 'Does a low-cost carrier lead the domestic tourism demand and growth of New Zealand?' *Tourism Management*, 60(4), 390-403.
- Yang, C.H., H.L. Lin, C.C. Han (2010) 'Analysis of international tourist arrivals in China: The role of World Heritage Sites', *Tourism management*, 31(6), 827-837.
- Yang, Y., H. Liu and X. Li (2018) 'The World Is Flatter? Examining the Relationship between Cultural Distance and International Tourist Flows', *Journal of Travel Research*, 58(2), 224-240.
- Yavari, K., M. Golizadeh M. Aghayi and M.H. Mostafavi (2010) 'The impact of tourism spending and economic growth in selected countries of the Islamic Conference (OIC)', *Journal of Economic Studies*, 45(2), 219-243.