A Comparative Study on the Role of Tourism Industry on Iran and Malaysia Economic Growth

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Abstract

Tourism plays a significant role in the economic growth of a country. Considering the cultural, natural, and historical attractions of Iran, it is necessary to take effective steps to attract foreign tourists in order to increase the economic growth of Iran. This study examines the impact of tourism on economic growth within the framework of the neoclassical growth model for the years 1980_2015. To test the reliability of the variables, Dickey-Fuller test and Zeut-Andrews structural failure test are used. To estimate the long-term and short-run relationship between economic growth and tourism, Johansen co-integration test and Vector Error Correction Model (VECM) tests are conducted using Eviews software (V.9).

Our empirical findings indicate that the impact of tourism on Iran's economic growth is far higher in Malaysia in the short and long term, reflecting the potential of tourism in the country, which can have a direct and indirect effect on economic growth. And the policy makers should strive to develop tourism in Iran.

Introduction

Today, tourism is not just entertainment, it is gradually becoming a means of recognizing the lives of peoples, understanding others, exchanging experiences, developing science and technology, and economic prosperity and social development. The first reason for the development of tourism in most countries is to exploit its economic benefits. The incomes from tourism is a part of the domestic GDP of the host country and directly affects its economic growth and can play a significant role in earning

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foreign exchange. Therefore, the development of the tourism industry in developing countries, which face problems such as high unemployment and currency resources constraints and are single product economies, is of great importance.

Iran too is one of the single product economies and relies heavily on revenues from crude oil exports. This has caused macroeconomic variables to fluctuate over time, in response to changes in the global prices of oil. Liberating Iran from its heavy dependence on earnings from crude oil export is possible through increased export of non-oil goods and services. However, economic studies on Iran's industrial structure indicate the underdevelopment of tourism sector in the country. Thus, tourism development becomes of paramount importance for Iran to expand its sources of economic growth and currency revenues as well as creation of job opportunities. The importance of an economic study on this industry is revealed when one realize that Iran is one of the top 10 countries in the world in terms of tourist attractions and *ancient* monuments, and one of the top five countries with a potential for ecotourism due to its plant and animal diversity. Also, Iran can earn money by attracting Muslim tourists from other countries because of its 98% Muslim population and important Islamic cities such as Mashhad, Qom and Shiraz are located here. But Iran earns 0.05 percent of the global tourism revenue and ranks 114th in terms of tourist income. In order to make right decisions in the tourism sector and implementing appropriate policies, we need to use data from another country in order to make the results more accurate and provide a good basis for the assessment. If such decisions are made using a country similar to Iran for a comparison, and which has witnessed events such as the Islamic Revolution and imposed war that affect in the last decades, it would be easy to get appropriate results from the model outputs and appropriate policies can be devised. In this study, we consider Malaysia as a benchmark for the tourism industry, and estimate the proposed model with regard to previous studies.

Many studies have been carried out on the relationship between economic growth and tourism. **Yavari et al. (2010)** studied impact of tourism expenditures on the economic growth of OIC countries using fixed effects method the period 1990–2007. The results showed that, in addition to the most common sources of growth, including material and human capital investment and household consumption expenditure, in these countries, the improvement in the tourism industry could also lead to economic development and higher growth rates.

Ranjpour et al. (2011) used the Granger causality test to determine the relationship between income from the tourism industry and GDP without oil earnings. The results of the research show that there is a long-term co-integration relationship between these variables. The coefficient of the income variable was found to be positive and significant. There is also a long-term causality relation between tourism revenue and GDP growth without oil earnings. Thus, it can be argued that development of the tourism industry increase the GDP and economic growth of the country.

Heidari and Sadeghi (1393) examined the impacts of tourism, energy consumption and political instability during 2000–2013 on the economic growth of Islamic countries that form the D-8 Group. The results showed that political instability was hampering the economic growth in these countries.

Kazeroni et al. (1393), using the static panel approach, investigated the impacts of tourism development on the economic welfare of the G8 countries during 1961_1991. The findings of this research indicated a positive and significant relationship between income from tourism and economic welfare in these countries. According to the results obtained, investment and inflation respectively have had a positive and negative effect on their economic welfare.

Lee and Chang (2008) reviewed the development of tourism and economic growth using the panel method for the OECD and some selected countries (from Asia, Latin America and Sub-Saharan Africa) during 1990_2000. The results showed that there is a cointegration relationship between GDP and

tourism growth. Also, it was found that tourism growth has a greater impact on the GDP in of the countries being studied.

Zortuk (2009) examined the contribution of tourism to Turkey's economic growth and explored the rapid development of the tourism sector, especially after the 1980s, and its effect on the country's economic growth. He used seasonal data from the first quarter of 1990 to the third quarter of 2008 and using Granger causality test and VECM method examined the relationship between tourism development and economic growth. The results show, existence of a one-way relationship, from tourism development toward economic growth.

Fourie and Rossello (2015) showed that tourists prefer to travel to countries or places that have a similar cultural and historical backgrounds to their own. According to them, cultural communication is largely due to religious affiliation.

Tang and Tan (2015) examined the impacts of tourism on Malaysian economic growth for the period 1975–2011 using a multivariate model derived from the Solow growth theory. The results indicated a positive effect of tourism on the economic growth both in the short and long terms.

In the present study, we examine the effects of economic tourism based on the neoclassical growth model. Meanwhile, to test the root of the unit, Augmented Dickey Fuller (ADF) test and Zivot-Andrews (1992) unit root test with structural breaks will be used to determine the accumulation of each time series. To determine the long and short term relationship between economic growth and the factors that affect it, the Johansen test (1988) and error correction model will be used.

Economic Growth and Tourism Development

Tourism has become a widespread concept as an appropriate currency income in various economic, social, and cultural dimensions, and for many countries is the main source of income, employment, growth and development. This industry is especially vital for the developing countries which are single-product economies. Tourism, due to the overflow effect or external consequences, has a dynamic effect on the economy as a whole and it contributes to the growth of the economic activities associated with the industry. That is, tourism can act as a motor for economic growth, which will also provide a push for other activities. Economic growth also contributes to the development of tourism as it leads to the development of tourism facilities and infrastructure, including the development of transportation and roads, development of information and communication technology, expansion of electronic money, development of residential areas, restaurants, and hotels, as well as the development of recreational and welfare facilities, all of which promotes development of the tourism industry.

On the other hand, as the tourist arrivals increase, the tourist income increases as well. Since tourism is one of the service industries, the income from that industry is considered part of the domestic GDP of the host country, directly affecting its economic growth. Hence, development of tourism industry can be a good solution for increased foreign exchange earnings and, as a result, better economic growth.

Tourism Growth in Iran and Malaysia

The World Tourism Organization (WTO) was founded in 1975 and now it has 154 members. It is interesting to note that Iran was established in 1979, while Malaysia joined the organization in 1991, three years later. However, Malaysia overtook Iran in these years, whose income from tourism is tens of

times higher than Iran's tourism income. Although the earliest monument in Malaysia was built at most about a hundred years ago, Malaysia has surpassed many of Iran's prominent historic monuments in terms of attracting tourists. Malaysia has been able to create a space for many Muslims to travel to Malaysia on their priority list.

According to WTO, Malaysia was sixth in 2016 with an estimated 30 million tourists, while it ranked third in terms of attracting tourists among the Asian countries. Unfortunately, despite the fact that Iran has thousands of years of history and despite being one of the top ten countries in terms of tourist attraction, it ranks 114 in the world as a tourist spot. It is a fact that the scientific and accountable management of entrepreneurs, policymakers, and economic activists in Malaysia have made the ever increasing impact of tourism on sustainable economic growth and permanent employment in the country.

Research Methodology

In this study, the Solow growth model (1956), derived from the Cobb_Douglas production function, has been used to study the impacts of tourism on economic growth.

$$ ln\left(\frac{Y_t}{L_t}\right) = \beta_0 + \theta\, ln\, Z + \frac{\alpha}{1-\alpha}\, ln\, S_t - \frac{\alpha}{1-\alpha}\, ln(n+g+\delta)_t \qquad (1)$$

where ln denotes the natural logarithm, Y_t is the output, L_t is total labour, st is savings, n is the population growth rate, d is the rate of depreciation of capital stock, g is the growth rate of technical progress and Z is a vector of factors that affect the level of technology and efficiency in the economy. In this study, Z represents tourism expansion and an institutional factor such as political stability. Therefore, the long-term growth model used in this study *can be written as*

$$ ln\,(GNP_t) = \beta_0 + \theta_1\, ln(Tour_t) + \theta_2\, ln(PS_t) + \beta_1\, ln(GNS_t) + \beta_2\, ln(n+g+\delta)_t + \epsilon_t \qquad (2)$$

where:
ln(GNP_t): per capita real gross national product
ln($Tour_t$): logarithm of per capita real tourism receipts
ln(PS_t) : logarithm of political stability
ln(GNS_t): per capita real gross national savings logarithm
n: population growth rate
δ: depreciation rate of the capital stock

According to **Mankiw, Romer, and Weil (1992),** the growth rate of g+δ is approximately 5% and constant over time.

This study utilizes annual time series data from 1980 to 2015 extracted from various databases. Annual data on per capita real GNP, per capita real GNS, per capita real tourism receipts and population growth rate are extracted from the International Financial Statistics (IFS), the World Development Indicators (WDI). However, the annual series on polity stability is collected from Polity IV Project (Marshall, Gurr, & Jaggers, 2013). EVIEWS 9 software(v.9) was used to calculate the equations.

Zivot_Andrews unit root test

In this study, we use two versions of the endogenous break model proposed by Zivot and Andrews (1992) to determine the order of integration. Model A allows for a break in the intercept only, whereas Model B allows for a break in both the intercept and the slope of the trend function. The testing models can be written as:

Model A: $\Delta w_t = a_0 + a_1 w_{t-1} + b_1 t + k_1 DU_t + \sum_{j=1}^{p} c_j \Delta w_{t-j} + e_{1t}$

Model B: $\Delta w_t = a_0 + a_1 w_{t-1} + b_1 t + k_1 DU_t + b_2 DT_t + \sum_{j=1}^{p} c_j \Delta w_{t-j} + e_{2t}$

DU_t the dummy variable for a structural break in the intercept occurring at time TB, for t > TB years is equal to one and 0 otherwise, whereas DT_t is the dummy variable for a trend shift, where DT_t = t-TB if t > TB and 0 otherwise. TB is a structural potential breakpoint year.

Experimental Results

Figures 1 and 2 show the number of tourists entering Malaysia during 1980_2015.

Figure 1 shows that the growth trend of tourism in Malaysia has risen over the past 20 years, Figure 2 shows that during the years of war(1980_1988), Iran had the least number of tourists, and the trend of the arrival of tourists to Iran has increased in the following years. In recent years, the arrival of Shia tourists to visit religious sites has increased. Religious tourism can be boosted by creating pristine spaces and places of recreation in Iran as ther are many religious hubs and holy sites in the country.
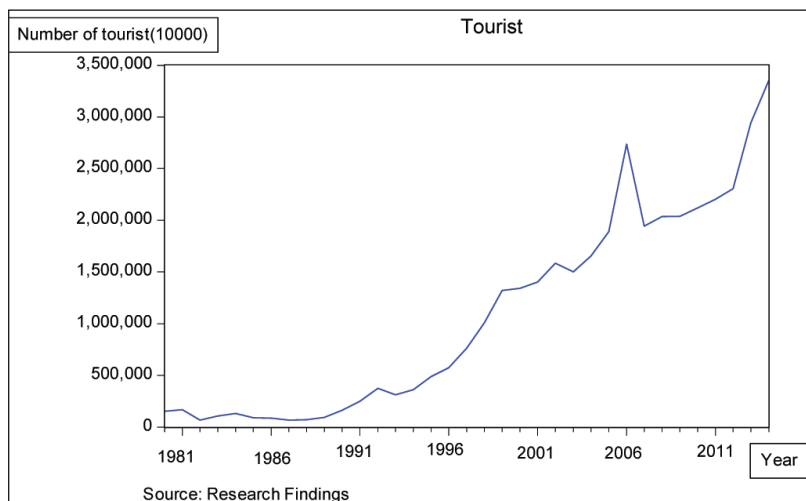

Figure 1. Number of tourists who entered Malaysia (1980–2015)
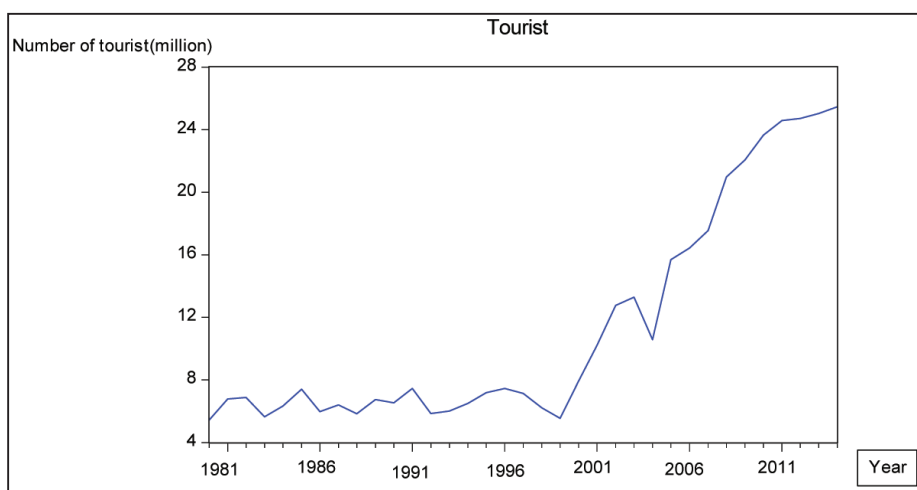
Source: Research Findings.

Figure 2. Number of tourists who entered Iran

Source: Research Findings.

Experimental Results in Iran

The results of the root test of the Argument Dickey Fuller and Zivot_Andrews test along with the first-order difference of the model variables for Iran are shown in Table 1. The results indicate that the variables have a single root at 5% level and are stable with a differential margin. Therefore, based on the unit root test, all the variables of the stacked model are of the first order or I (1). These results are in line

Table 1. The unit root test results

Variables	ADF(*t*-test)	Model A		Model C	
		Years of failure	*t*-test	Years of failure	*t*-test
LnGNP	−0.485	1992	−2.811	2009	−2.398
LnTour	−0.141	1991	−3.44	1988	−3.709
Ln GNS	−1.332	1985	−4.375	1992	−4.01
Ln IPS	−2.017	2007	−3.87	2005	−4.11
Ln(n+g+δ)	−1.708	1986	−4.16	1991	−4.026

Variables	ADF(*t*-test) With a differential load	Zivot-Andrews test with a structure failure			
		Model A		Model C	
		Years of failure	*t*-test	Years of failure	*t*-test
LnGNP	−3.37	1992	−5.76	2009	−5.48
LnTour	−5.45	1991	−7.10	1987	−7.45
Ln GNS	−8.22	1985	−9.59	1992	−10.206
Ln(n+g+δ)	−1.708	1986	−4.16	1991	−4.026
Ln IPS*	−6.02	1987	−9.04	2007	−8.67

Note: * Considering that during these years Iran witnessed war and political instability, we considered the IPS variable as political instability in the model.

Table 2. Johansen cointegration test results

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None*	0.418647	18.23313	15.49471	0.0189
At most 1	0.010071	0.334020	3.841466	0.5633
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				

Notes: * denotes rejection of the hypothesis at the 0.05 level.
** MacKinnon-Haug-Michelis (1999) *p*-values.

with the findings of Nelson and Plosser (1982), which are included in the first macroeconomic series. In the structural failure test for Zivot_Andrews, all variables are also accumulated from the first order.

Given the variables I (1), we can examine the long-term relationship between economic growth and the affective factors by using Johansen cointegration test. In order to carry out this test, the optimal latency and the affective factors should be determined in the VAR model. According to the Akaike criteria, the best interruption is one. The results of the Johansen cointegration test show a long-term relationship at 1% level (Table 2).

Because of the better performance of the conventional least squares (OLS) method in small samples, we used this method to estimate the long-term relationship. Table 3 shows the results obtained using OLS method. The results indicate the positive and meaningful impact has tourism on Iran's economic growth at 5% level. The variable tourism coefficient indicates that a 1% increase in tourism will lead to the 1.47% increase in Iran's GDP in the long term. The variable Ln (n+ g+ δ) is also significant at 10% level, but its impact on Iran's economic growth has been negative. We also used the Vector Error Correction Model (VECM) to obtain a short term relationship. Table 4 also shows the coefficients of the VECM model.

The results indicated a positive and significant effect of the per capita savings and tourism on economics growth in short term. The long-term adjustment coefficient is both negative and significant at 10 % level, which confirms long-term economic growth and the affective factors. The results indicate the positive impacts tourism on Iran's economic growth in long and short terms. By 1% increase in tourism, there will be an increase of 0.16% in the economic growth of Iran in short term. These results are consistent with the results of Ranjpour (2011) and Lee and Chang (2008) and Tang and Tan (2015). The value of $R^2 = 0.49$ indicates that the fit of the model is relatively good. The error correction coefficient in the short-term relationship shows that in each period 0.079

Table 3. Long term economic growth and its influential factors (OLS Method)

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
Ln Tour	1.474067	0.159235	9.257159	0.0000
Ln IPS	−0.042108	0.128045	−0.328850	0.7446
Ln(n+g+δ)	−1.044931	0.619516	−1.686688	0.1024
Ln GNS	0.371472	0.279176	1.330600	0.1937
C	4.796685	4.457261	1.076151	0.2907
R-squared	0.939154	Mean dependent var		1.589998

Table 4. Estimation of the coefficients of short-term error correction model

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	0.171328	0.025547	6.706434	0.0000
D(LnGNS)	0.135867	0.046593	2.916057	0.0074
D(Ln IPS)	−0.006489	0.020330	−0.319174	0.7522
D(Ln Tour)	0.161654	0.066973	2.413724	0.0234
D(Ln(n+g+δ)	−0.109065	0.119581	−0.912059	0.3704
ET(−1)	−0.079290	0.045669	−1.736192	0.0948
D71	0.015754	0.035285	0.446478	0.6591
D88	−0.005717	0.012142	−0.470876	0.6418
R-squared		0.497534		

Experimental Results in Malaysia

Table (5) reports the results of both unit root tests. At 5% significance level, the results of the ADF test indicate that all variables are non-stationary at levels, but they are stationary after first differenced. Likewise, the Zivot_Andrews unit root test showed no additional evidence against the results of the ADF unit root test. Therefore, both unit root tests consistently suggest that $\ln(GNP_t)$, $\ln(TOUR_t)$, $\ln(PS_t)$, $\ln(GNS_t)$ and $\ln(n+g+\delta)_t$ are integrated of order one or I(1).

The results for Malaysia with regard to the existence of political stability in the years under study reflect the long-term relationship between Malaysian economic growth and the factors affecting it (Table 6).

From the results, we find that tourism, political stability, savings and $\ln(n+g+\delta)_t$ are statistically significant at the 5% level in long-term. In short term, only political stability is insignificant while the rest are statistically significant at the 1% level. Specifically, the results indicate that tourism has a positive impact on economic growth in both short and long-terms.

Table 5. The results of both unit root tests

Variables	ADF(*t*-test)	Model A		Model C	
		Years of failure	*t*-test	Years of failure	*t*-test
Ln(GNP)	−3.06	1998	−2.811	1998	−2.398
Ln(Tour)	−3.04	1990	−3.44	1994	−3.709
Ln (GNS)	−1.332	2009	−2.01	2009	−4.01
Ln (PS)	−2.56	1998	−3.87	1998	−4.11
Ln(n+g+δ)	−1.708	1988	−2.8	1994	−4.026

Variables	ADF(*t*-test) First difference:
Ln(GNP)	−4.3
Ln(Tour)	−6.12
Ln (GNS)	−8.22
Ln(n+g+δ)	−3.3
Ln IPS*	−5.57

Note: * Considering that during these years Iran witnessed war and political instability, we considered the IPS variable as political instability in the model.

Table 6. Long term economic growth and the factors affecting in Malaysia

Variable	Coefficient	t-Statistic	P-V
Ln Tour	0.1403	7.82	<0.05
Ln (PS)	0.0718	2.765	<0.05
Ln(n+g+δ)	−0.4778	−3.55	<0.05
Ln (GNS)	0.4244	14.016	<0.05
C	4.002	10.85	<0.05

Table 7. Estimation of the coefficients of short-term error correction model in Malaysia

Variable	Coefficient	t-Statistic	p-Value
C	−0.002	−0.43	>0.05
D(LnGNS)	0.4316	4.88	<0.05
D(Ln PS)	0.0324	0.93	>0.05
D(Ln Tour)	0.0903	3.7997	<0.05
D(Ln (n+g+δ)	−0.9214	−5.4	<0.05
ET(−1)	−0.58	−5.2	<0.05
D98	−0.076	−5.6	<0.05

The results suggest that the impact of tourism on Iran's economic growth is far higher as compared to Malaysia in short and long terms, reflecting that tourism potential in a country can affect its economic growth. Also, revenues obtained from tourism could be a good alternative to oil revenues, and with the development of this industry in the country, can increase GNP without resourse to oil products.

The positive impact of political stability on Malaysia's economic growth suggests that establish security and lack of tension and war in Iran, are important factors that can create increased tourist inflow in the country if there is a corresponding infrastructure in place. The error correction coefficient in the short-term relationship shows that in each period 0.58. By comparing the error correction factor in Malaysia and Iran, we can conclude that the imbalance in each period in Malaysia adjusts to a higher rate than Iran, and approaches the long-term trend.

Conclusion and Recommendations

In this study, we examined the effects of economic tourism in the framework of the neoclassical growth model. In order to examine the order of integration of the data series, we employed both the standard ADF unit root test and the Zivot-Andrews unit root test with one structural break. To determine the long and short-term relationship between economic growth and factors affecting it, Johansen cointegration test and error correction models were used.

Our findings indicate that the impact of tourism on Iran's economic growth as compared to Malaysia is more in both the short and long terms, reflecting the potential of tourism in Iran, which can have a direct and indirect effect on its economic growth. The positive impact of political stability on economic growth suggests that establishing security and lack of tension and war, Iran can expect increased tourist inflow due to the elimination of heterogeneous infrastructure in tourism.

The findings suggest that higher economic growth in Iran can be achieved by relying on tourism and reducing its dependence on oil. Considering important factors such as unique natural, historical and archeological attractions that can greatly help in the development of tourism in Iran, it is necessary for the policy makers to pay more attention to the promotion of tourism (both domestic and foreign). This in turn will contribute to the structural diversity of the Iranian economy and, therefore, its flexibility. In spite of the negative publicity about the country, the authorities should establish security, political stability and, consequently, economic stability in the country. In order to develop tourism based on the prevailing values of the country, we should attract a special type of cultural and pilgrimage tourists need to be attracted to the country. Considering Malaysia's successful tourism industry, the multi-religious and multilingual community of Malaysia, the following suggestions can be made for the development of tourism in Iran. The policy-makers must promote tourism at a very high level, promote hospitality tourism agencies, promote multilingual service providers, and implement online marketing strategies, innovation and creativity in the tourism market along with private sector investment in the industry. Apart from this, the historical cities and villages of the country can be promoted as interesting tourist destinations in the social media. Also efforts must be made to create tourist destinations from various countries depending on the type of life of different nationalities, so that tourists, while on a holiday abroad, can enjoy the same feeling as in their own country. We need to focus on medical, sports, education and food tourism, which can increase the number of foreign travelers to Iran.

References

Fourie, & Rossello (2015). *Religion, religious diversity and tourism*. John Wiley & Sons Ltd, KYKLOS, *68*, 51–64.

Heydari & Sadeghpour (2015). The impact of tourism, energy consumption and political instability on economic growth in the D-8 countries. *Quarterly Journal of Economic Development Researches*, *6*(21), 11–28.

Kazerouni, Alireza, Khodaverdizadeh, Saber, & Northern, Adel (2015). The impact of tourism development on the economic welfare of the nation's countries: Static panel approach (The First Conference of the Perspective of Torbat Heydarieh in the Horizon of 1404).

Lee, C., & Chang, C. (2008). Tourism development and economic growth: A closer look at panels. *Tourism Management*, *29*, 180–192.

Lee, C. G. (2012). Tourism, trade, and income: evidence from Singapore. *International Journal of Tourism and Hospitality Research*, *23*(3), 348–358.

Mankiw, N. G., Romer, D., & Weil, D. N. (1992). A contribution to the empirics of economic growth. *Quarterly Journal of Economics*, *107*(2), 407–437.

Nelson, C. R., & Plosser, C. R. (1982). Trends and random walks in macroeconomic time series: Some evidence and implications. *Journal of Monetary Economics*, *10*(2), 139–162.

Pablo-Romero, M. P., & Molina, J. A. (2013). Tourism and economic growth: A review of empirical literature. *Tourism Management Perspectives*, *8*, 28–41.

Payne, J. E., & Mervar, A. (2010). The tourism growth nexus in Croatia. *Tourism Economics*, *16*(4), 1089–1094.

Ranjpour, Reza, Karimi Takanlou, Zahra, & Najafi Nasab, Miyahjet (2011). The study of the tourism hypothesis that led to growth in Iran during the period of 1995–2010. *Quarterly Journal of Economic Research and Research*, *Autumn (2011)*, 134–115.

Tang, C. H., & Tan, E. C. (2015). Does tourism effectively stimulate Malaysia's economic growth", *Tourism Management*, *46*, 158–163.

World Bank (2016). The world development indicators (WDI). Retrieved from http://databank.worldbank.org/data/home.aspx.

Yavari, Kazem, Reza Gholi, Mahdiyeh, Achaee, Majid, & Mostafavi, Seyyed Mohammad Hassan (2010). The impact of tourism expenditures on economic growth OIC members. *Journal of Economic Research*, *91*, 244–221.

Zortuk, M. (2009). Economic impact of tourism on Turkey's economy: Evidence from cointegration tests. *International Research Journal of Finance and Economics*, *25*, 231–239.