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# The Effects of Hotel Development on Tourism industry: Evidence Iran

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Given the increasing number of international tourists and the growing role of the tourism industry in the economies of the country, identification of effective factors in attracting international tourists is more than necessary. Governments and the private sector need to identify the factors affecting the tourism industry in order to develop, compete and survive in the tourism industry. Therefore, the purpose of this study is to investigate factors affecting the attraction of international tourists to Iran using the ARDL test for the years 2015 to 1983. Therefore, the results of this study showed that the effect of all variables hotel development, merchandise trade, real exchange rate and real gross domestic product on international tourism In Iran, in the long-term and short-term positive and also bilateral relationship is between them. Also, the greatest impact on the increase in the number of tourists entering Iran is the real effective exchange rate and real GDP.

**Keywords:** Hotel development; Real exchange rate; Tourism industry; ARDL; IRAN

## 1. Introduction

Tourism is an important social and economic phenomenon that follows a pattern of evolution which is important to understand. The macro econometric perspective considers that tourism-demand patterns are explained by economic and social conditions at an aggregate level (Santana-Gallego et al., 2011; Seetanah, 2011).

Tourism, often describes as the movement of people away from home to other places of interest, it's one of the largest and fastest growing industries in the world, Travel and Tourism Council (Al-Badi et al., 2017).

In the century, tourism becoming an important and the fastest growing sector in many countries after the telecommunication and information sectors (Crouch & Ritchie, 1999). Growing tourism sector has huge potential to generate income, investment, employment and foreign exchange. According to the World Tourism Travel Council (WTTC, 2010), the contribution of travel & tourism sector to gross domestic product (GDP), total employment, and total investments are 9.8%, 8.6% and 9.8%, respectively (yazdi, khanalizadeh, 2016).

As well as, Tourism stimulates other economic industries by direct, indirect and induced effects. In addition tourism is an important factor in the diffusion of technical knowledge, stimulation of research and development and the accumulation of human capital (Chou, 2013).

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But Sustainable tourism development means the optimal use of social, natural, cultural and financial resources for national development on an equitable and self-sustaining basis to provide a unique visitor experience and an improved quality of life through partnerships among local government, private sector and communities (Rukužienė, 2014).

Because of the increase in the international tourism sector in terms of its contribution to the national economy, in recent years there have been conducted vast theoretical and empirical studies on tourism demand, particularly in the countries which has a high dependence on tourism sector.

With the drying up of other sources of foreign currency, such as agricultural and mining exports, the tourism sector has assumed an important role as the only remaining major source of foreign currency. Since tourism remains a vital sector in the economy, its rejuvenation in the short-term will contribute to the economy because the other sectors such as agriculture and mining will only find their feet in the medium-term and beyond, due to the drastic structural changes which are needed to revive them (Khoshnevis, khalizadeh, 2016).

Figure 1 shows the trends and growth rates in international tourist arrivals to IRAN from 1983–2015.

During this period, international tourist arrivals to the IRAN were rising.

In this paper, using the autoregressive distributed lag (ARDL), we seek to find and analyse the determinants of the international tourism, number of arrivals for IRAN. The contribution of this paper is two- fold: (i) it expands the database using new variables and (ii) uses the autoregressive distributed lag (ARDL) to investigate the determinants of international tourism, number of arrivals.

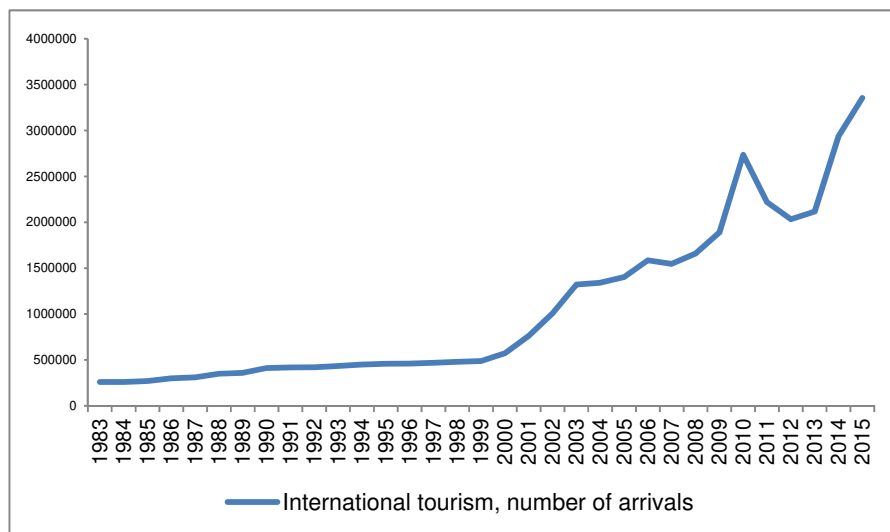


Figure 1. The trends and growth rates in international tourist arrivals to IRAN.  
Source: WDI.

The rest of the paper is organized as follows. Section 2 provides a background to international tourism. Section 3 provides the theoretical basis for investigating the determinants of the international tourism and the method used in this survey while Section 4 presents the empirical results. Section 5 concludes the paper by drawing policy implications.

## 2. Literature review and data

Gonzalez and Moral (1995), in a study about the international tourism demand in Spain, refer that one of the main problems in analysing the potential of the tourist sector is to find a precise indicator for measuring the external demand. Bearing in mind that the tourism demand is not a directly observable variable, it is necessary to find a suitable proxy to represent it. The authors used tourists spending as the dependent variable, defined as the product of three factors: the number of tourists, the length of

their stay and the daily average spending. This is a more complete definition than using the number of entrances to express tourism demand. The latter does not take into account the stay – duration and spending behaviour.

Crouch and Ritchie (1999) analysed the product in the context of comparative and competitive advantage, and states that tourism planning and development would not be possible without roads, airports, harbours, electricity, sewage and potable water.

Prideaux (2000) argued that a destination should be easy to get to and easy to get around. Most tourists, being citizens of developed countries, accustomed to modern and efficient transport infrastructure, and they expected to experience in the destination country comforts similar to home, failing which they will seek alternative destinations.

Naudee and Saayman (2004) studied the determinants of tourism flows in the case of African countries using a panel data regression approach. Applying cross-section ordinary least squares as well as static and dynamic panel data estimation, these authors showed political stability, personal safety, marketing efforts and available infrastructure as important factors in addition to the classical usual factors in nearly all panel sets analysed, namely aggregate arrivals, arrivals from America, Europe and Africa, respectively. However, the measure of infrastructure used relates to tourism infrastructure exclusively.

Teresa and Martín (2007) investigated international tourist arrivals to the Balearic Islands from 14 major origin countries during 1991–2003, using the panel data. They suggested that after the terrorist attacks of 11 September 2001, international tourists have changed long-run for short-run destinations and destinations accessible by car were preferred over destinations that require air travel.

Khadaroo and Seetanah (2007) investigated the significance of transport infrastructure as a factor in destination development, showing it a part of the classical demand for international tourism functions in Mauritius. The findings showed that tourists from Europe/ America and Asia are particularly sensitive to the island's transport infrastructure. Those from Europe/America are also sensitive to its no transport infrastructure. Both types of infrastructure, as well as income of tourists, distance and relative prices are important ingredients in their own respect in the tourism-demand equation. Mauritius is an expanding destination, with the European and American markets being most promising.

Sequeira and Nunes (2008) studied the effect of country risk on tourism demand (tourist arrivals, tourism receipts as a per cent of export, and tourism receipts as a per cent of GDP), using the dynamic panel data approach namely system generalized Method of Moment. They indicated that the value of country risk coefficient is relatively stable in the regressions, which means 1% increase in the risk rating (decrease in the country risk) allows for a near 0.2% increase in specialization.

Middleton, Fyall, and Morgan (2009) summarized 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. Income factors particularly used in many empirical studies that adopted econometric models measure tourism-demand elasticity. The results showed that the income elasticity of tourism demand is positive and greater than one.

Leitão (2010) applied static and dynamic panel data models of tourism demand in Portugal and estimated demand equations using tourism inflow data for the period 1995–2006. The results suggest that trade, population and income are the main determinants of tourism demand in Portugal, rather than relative prices.

Surugiu, Leitão, and Surugiu (2011) used the static and dynamic panel data analysis to study the impact of specific factors across countries on tourism demand in Romania. The results show that per capita GDP, trade and population have a positive effect on international arrivals.

Siti-Nabiha, et al (2014). In study “The Development of a Green Practice Index for the Malaysian Hotel Industry” , the method of developing a green practice index for the Malaysian hospitality industry, the

differences and advantages of this method compared to the commonly used Delphi method and finally the Malaysian Green Practice Index for the hotel industry are presented.

Finally, Ra'ed Masa'deh, et al (2017) In this study titled "The Effect of Hotel Development on Sustainable Tourism Development In Jordan, using ANOVA analyzes, Shown a positive impact on the development of the hotel and the development of tourism. Also, results indicated that there are no significant differences in the impact hotel development on sustainable tourism development in favor of age, educational level, personal income, work position, and hotel classification.

### 3 Research Methods

#### 3.1. Model specification

Our empirical model investigates the impact of economic growth, Real exchange rate, Hotel numbers and trade on international tourism. The functional link between these variables yields:

$$TOUR = f(GDP_t, HOTEL_t, EX_t, TR_t) \quad (1)$$

The natural logarithmic transformation of Eq. (1) yields the following equation:

$$\text{LnTour}_t = \alpha_0 + \alpha_1 \text{LnGDP}_t + \alpha_2 \text{LnHOTEL}_t + \alpha_3 \text{LnEX}_t + \alpha_5 \text{LnTR}_t \quad (2)$$

#### 3.2 ARDL Test

The Autoregressive Distributed Lag (ARDL) approach suggested by Pesaran et al (2003) is applicable for variables that are I (0) or I (1) or fractionally integrated. The ARDL framework of Equation 3 of the model is as follows:

$$\Delta \text{LnTOUR}_t = a_0 + \sum_{i=1}^n a_{1i} \Delta \text{LnGDP}_{t-i} + \sum_{i=1}^n a_{2i} \Delta \text{LnHOTEL}_{t-i} + \sum_{i=1}^n a_{3i} \Delta \text{EX}_{t-i} + \sum_{i=1}^n a_{4i} \Delta \text{LnTR}_{t-i} + \lambda \text{ECM}_{t-1} + u_t \quad (3)$$

A1, a2, a2, a3 and a4 correspond to the long-run relationship in Equation. Where ECM t–1 is the error correction term which is gained from the following estimated cointegration equation:

$$\text{ECM}_t = \text{LnTOUR}_t - a_0 + \sum_{i=1}^n a_{1i} \Delta \text{LnGDP}_{t-i} + \sum_{i=1}^n a_{2i} \Delta \text{LnHOTEL}_{t-i} + \sum_{i=1}^n a_{3i} \Delta \text{LnEX}_{t-i} + \sum_{i=1}^n a_{4i} \Delta \text{LnTR}_{t-i} \quad (4)$$

#### 3.3 Granger Causality Analyses

In the final stage, we can use Granger causality testing to examine the presence of any bidirectional causal link across the variables under study. To this end, we run the pairwise Granger causality tests and the vector error correction model for the short- and long-run relationships, respectively. Two stages are suggested by Engle and Granger: the first stage recovers the estimated residuals from Equation (2), while the second stage estimates the parameters related to the short-run adjustment. The estimation of the dynamic vector error correction model is given as follows:

$$\begin{bmatrix} \Delta \text{LnTOUR}_t \\ \Delta \text{LnGDP}_t \\ \Delta \text{LnHOTEL}_t \\ \Delta \text{LnEX}_t \\ \Delta \text{LnTR}_t \end{bmatrix} = \begin{bmatrix} c_1 \\ c_2 \\ c_3 \\ c_4 \\ c_5 \end{bmatrix} + \sum_{i=1}^p \begin{bmatrix} \beta_{11} & \beta_{12} & \beta_{13} & \beta_{14} & \beta_{15} \\ \beta_{21} & \beta_{22} & \beta_{23} & \beta_{24} & \beta_{25} \\ \beta_{31} & \beta_{32} & \beta_{33} & \beta_{34} & \beta_{35} \\ \beta_{41} & \beta_{42} & \beta_{43} & \beta_{44} & \beta_{45} \\ \beta_{51} & \beta_{52} & \beta_{53} & \beta_{54} & \beta_{55} \end{bmatrix} \begin{bmatrix} \Delta \text{LnTOUR}_t \\ \Delta \text{LnGDP}_t \\ \Delta \text{LnHOTEL}_t \\ \Delta \text{LnEX}_t \\ \Delta \text{LnTR}_t \end{bmatrix} + \begin{bmatrix} \lambda_1 \\ \lambda_2 \\ \lambda_3 \\ \lambda_4 \\ \lambda_5 \end{bmatrix} \text{ECM}_{t-1} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \\ \varepsilon_{4t} \\ \varepsilon_{5t} \end{bmatrix} \quad (5)$$

ECMt-1 is the lagged error-correction term. Residual terms are uncorrelated random disturbance term with zero mean and i's are parameters to be estimated.

#### 3.4 Data Description

We obtain annual data for the period 1983-2015 in Iran. The variables that are included in the empirical analysis are international tourism (TOUR), which is defined as the total number of inputs, real GDP (Y), which in the fixed price of 2010, the real exchange rate (EX), commodity trade (TR ), Measured as its share of gross domestic product and hotel development as the total number of hotels defined. The data are derived from the Database Development Database of Word Bank and the Statistics Center of Iran. All variables have been transformed into natural logarithms for analysis. We used E views 10 to do the analysis.

#### 4. Empirical Analysis and Results

In this empirical study we used Augmented Dickey-Fuller Stationary unit root tests to check for the integration order of each variable. We apply unit root tests to ensure that no variable is integrated at I (1) or beyond. We have used the ADF unit root test to check for stationarity. The results in Table 1 indicate that all variables are non-stationary at their level form and stationary at their first differences.

**Table 1: Augmented Dickey-Fuller Stationary Test Results**

Variable	Constant No Trend	Critical Value	Prob	Variable	Constant No Trend	Critical Value	Prob
Ln TOUR	0.274000	-2.957110	0.9731	DLn TOUR	-4.46064**	-2.960411	0.0015
Ln HOTEL	2.585366	-2.986225	1.0000	DLn HOTEL	-4.468139**	-2.960661	0.0013
Ln GDP	-3.315207	-2.967767	0.9109	DLn GDP	-2.961693**	-2.967767	0.0506
Ln EX	-3.377761	-2.976263	0.0210	DLn EX	-3.591443**	-2.960411	0.0011
Ln TR	-1.932415	-2.627420	0.3133	DLn TR	-5.542487**	-2.976263	0.0001

Notes: (\*) and (\*\*) indicate 1% and 5% significance level respectively

Source: Author's Estimation using Eviews 10

In this study, the F-statistics are calculated over significant critical values of all levels. The guide line says that if the F-data calculated is greater than the critical value, the variables maintain long-term communication among them. In this situation, the variables of this study are the long-term sequel among them, which means that the variables of this study move together, since the F-statistic is too high a significant level (see Table 2).

**Table 2: the critical values of bound test**

Computed F- statistic: 6.2739	Critical values	
	Lower bound I(0)	Upper bound I(1)
1% significant level	4.280	5.840
5% significant level	3.058	4.223
10% significant level	2.525	3.517

Source: Author's Estimation using Eviews 10

Therefore, based on the ARDL approach the long run nexus model is as follows:

The null hypotheses of no cointegration are rejected, implying long-run cointegration relationships amongst the variables. The VECM is set up for considering short and long-run causality. The optimum lags are selected relying on minimizing the Akaike Information Criterion (AIC). The maximum lag order 3 was set. With that maximum lag lengths setting, the ARDL (2, 0, 3, 3, 2) model is selected using AIC ARDL (3, 3, 0, 0, 1) represents the ARDL model in which HOTEL, TR, EX and GDP take the lag length 3,0,0,1 respectively.

All estimated coefficients can be interpreted as long-run elasticities, given that variables are expressed in natural logarithms in table 3. The long-run coefficients of TOUR, HOTEL, TR, EX and GDP estimated from these techniques have the same magnitude at the 5% significance levels.

**Table 3 Long-run Estimation Results**

Dependent Variable: LnTOUR				
Variable	Coefficient	Std. Error	T-Statistic	Prob
Ln HOTEL	0.05**	0.028808	1.959420	[0.0567]
Ln TR	0.36**	0.170985	2.137431	[0.0474]
Ln EX	0.67**	0.181686	3.697721	[0.0018]
Ln GDP	2.70**	0.333526	8.125152	[0.0000]
C	-62.164966**	9.453305	-6.576003	[0.0000]

Notes: (\*) and (\*\*) indicate 1% and 5% significance level respectively

Source: Author's Estimation using Eviews 10

The results indicate that all estimated coefficients are statistically significant. Based on these are international tourism results, we show that real GDP and Real exchange rate are the two major drivers in increasing international tourism. Moreover, the estimates indicate that a 1% increase in Hotel development, merchandise trade, Real exchange rate and real gross domestic product leads to higher international tourism (the total number of arrivals) by 0.05%, 0.36%, 0.67%, 2.7% in the Long-run.

The results of the short causality are described in Table 4. The error correction mechanism (ECM) is used to check the short-run relationship among the variables. The coefficient of ECM t-1 which indicates that speed of adjustment for short-run to research in the long-run equilibrium is significant.

**Table 4 Error correction model (ECM) for short-run elasticity ARDL (3, 3, 0, 0, 1)**

Dependent Variable: DLn CO2				
Variable	Coefficient	Std. Error	T-Statistic	Prob
Ln HOTEL	0.30**	0.59134	5.093792	0.0001
Ln TR	0.17**	0.102059	<b>1.742213</b>	0.0095
Ln EX	0.32**	0.061175	5.342949	0.0001

<b>Ln GDP</b>	1.55**	0.219634	<b>7.081198</b>	0.0000
<b>ECM (-1)</b>	-0.75**	-5.1889	-5.032792	[0.0000]
<b>The Short-Run Diagnostic Test Results</b>				
<b>R-Squared</b>	0.998815			
<b>Akaike info Criterion</b>	49.2618			
<b>Schwarz Criterion</b>	37.8141			
<b>F-Statistic</b>	7.8933		[0.000]	
<b>Durbin-Watson</b>	2.0917			

Notes: (\*) and (\*\*) indicate 1% and 5% significance level respectively

Source: Author's Estimation using Eviews 10

The speed of adjustment process restores the equilibrium. The relatively high coefficients imply a faster adjustment process. The values of the coefficients of ECMt-1 (-0.75) indicating that the variables will adjust to the long-run equilibrium in about 1.33 period following a short-run shocks.

The estimates indicate that a 1% increase in Hotel development, merchandise trade, Real exchange rate and real gross domestic product leads to higher Respectively international tourism (the total number of arrivals) by 0.30%, 0.17%, 0.32%, 1.55% in the short -run.

**Table 5 VECM Granger Causality results**

Variable	Short-run				Long -run	
	Dln TOUR	Dln HOTEL	Dln TR	Dln EX	Dln GDP	ECM(-1)
<b>Dln TOUR</b>	-	5.2313** [0.022]	16.8986** [0.001]	22.8848** [0.000]	13.8555** [0.001]	26.9250** [0.000]
<b>Dln HOTEL</b>	5.3699** [0.020]	-	0.17496 [0.676]	23.3308** [0.000]	0.91649 [0.338]	20.9971** [0.000]
<b>Dln TR</b>	16.1799** [0.001]	2.2975 [0.130]	-	6.6534** [0.010]	.53153 [0.466]	6.1531** [0.003]
<b>Dln EX</b>	9.1984** [0.002]	0.3547E-4 [0.995]	5.0361** [0.025]	-	7.5785** [0.023]	25.0319** [0.000]
<b>Dln GDP</b>	.39402** [0.005]	6.3219** [0.042]	.030815 [0.861]	.19565 [0.658]	-	5.0566** [0.025]

x → y means x Granger causes y.

Note: \*\* denote the statistical significance at the 5% levels.

Source: Author's Estimation using Eviews 10

The results from the causality test reveals a short-run bidirectional causality running between all Variable to international tourism at the 5% significance level.

The error correction term is statistically significant for all Variable equations.

## 5. Conclusion and policy implication

The purpose of this research was to investigate the effect of Hotel development, merchandise trade, Real exchange rate and real gross domestic product on international tourism (the total number of arrivals).

In Iran, we use the ARDL distributive auto regression model using the World Bank statistical data for the period 2015- 1983. The results of the proposed model suggest that there is a significant and



positive effect of all proposed model variables on the international tourism (total number of arrivals) in the long run and in the short run. Granger's causality test also reflects the fact that there is a two-way causality relationship between all variables with international tourism (the total number of arrivals) in Iran.

Therefore, a very important point that the results of this research show is that the development of hotels can increase both the short and long term of the number of international tourism to Iran, so in this regard, the development of the necessary technologies to increase this industry should be on the agenda of the private and public sector of Iran.

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