

The Contribution of Tourism Development to Economic Growth in the Iranian Provinces

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Received: 2014/9/10

Accepted: 2014/11/15

Abstract:

The main objective of this paper is to estimate the tourism impact on the economic growth of Iranian provinces over the period of 2000-2010. For achieving this aim, the panel data approach has been used to the economic growth modeling. The empirical findings show that tourist receipts have a positive impact on the economic growth in Iranian provinces. It was found that a 10 percent increase in the spending of tourists leads to a 1 percent increase in the GDP per capita. In addition, physical and human capital has positive effects on economic growth, while unemployment rate and consumer price index have negative effect on the economic growth. Finally, the results of this study indicate that the product elasticities are inelastic in Iran during the period of 2000-2010.

JEL Classification: L83, O40, C33, O53

Keywords: Tourism Revenues, Economic Growth, Iranian Provinces, Panel Data Approach.

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1. Introduction

Nowadays, researchers have been interested in the relationship between tourism and economic growth. A general consensus has emerged that it increases foreign exchange income, creates employment opportunities, stimulates the growth of the tourism industry and therefore triggers overall economic growth. As such, tourism development has become a common awareness in political authorities worldwide (Kasimati, 2011). International tourism generates both macro and micro economic effects. Among the latter, international tourism improves the quality of labor employed in the industry, uses sources efficiently under high competition, benefits from scale economies and develops new facilities adapted to international standards and demand and supply in the tourism sector. The

macroeconomic effects of international tourism are a weightier consideration: these include foreign export demand for domestic goods and services, generating foreign currency earnings, new employment opportunities within the country, contributing to the repayment of foreign debt, improving the country's international standing as well as its people's living standards, increasing national income, generating new economic sources, accumulating investment and thus increasing domestic output, etc.

Due to the fact that Iran has very rich tourism attractions and an ancient civilization it is hoped that one day it reaches its real position in the world tourism industry through attempt towards development and ever-increasing prosperity of this industry and enjoys profits and returns obtained from prosperity and growth of the intended industry.

Iran's economy is a single-product economy by relying on oil incomes and such dependence has enhanced susceptibility level of the society's economy so that whenever oil prices are increased because of world changes foreign currency incomes obtained from oil exports in the country gain a more desirable status too, since today oil prices are fluctuating due to permanent political issues despite it is an economic

good. But such income increase is not so helpful for us, because first it is in cross sectional form. Secondly the necessary planning hasn't been conducted regarding how to apply such incomes, because it is unpredicted and thus it is unused in the short-term. Tourism industry is one of the sectors that can play a role in eliminating single-product economy depending on mineral resources given that Iran has a rich culture and civilization and is among the first ten countries in the world in terms of tourism attractions.

The main purpose of this paper is to estimate the relationship between tourism revenues and economic growth in Iranian provinces. Though, numerous studies in the past attempted to estimate tourism effect on economic growth for Iran, the application of the Panel Data approach for the set of Iran's provinces data covering 2000to2010is new.

The rest of paper has been organized in five sections; after the introduction, the second section reviews the literature and theoretical basics, the third section presents empirical studies and the forth section outlines the research methodology where, the Panel Data approach is explained, the model is presented and the data requirement of the selected model is discussed. The fifth section presents research findings and analysis. The last section draws conclusions and suggests policy implications.

2. Tourism and Economic Growth

Recorded global evidences demonstrate that whenever the economic growth status of the world, and especially the economic status of major tourist countries of origin haven't been in an appropriate condition (oil shock period etc.), international tourism has been faced with stagnation in all countries. Due to improvements in the status of the global economic growth and enhancing future perspectives of the economy, especially in these major tourist countries, the level of demand for foreign trips has increased. Global economic growth leads to an increased investment in all economic sectors and increased trade volume among the countries and this will lead to an enhanced international tourism demand. In other

words, when income per capita status and the economy of Iran's neighboring countries is improved, increasing foreign currency incomes obtained from international tourism for the country is much higher than when improvement of economic status occurs in countries further away. National economic growth and increasing income per capita level in the first step, along with increasing the levels of internal tourism demand and investment in this sector, enhances internal tourism levels within a country. In the next step, increased internal tourism level results in the increasing of international tourism levels according to the Linder theory.

Thus, tourism should have an impact on the frequently used quantitative measure of the economic development gross domestic product (GDP). As a result, a specialized literature has developed to measure the impact of tourism upon GDP to deal with measuring how tourism contributes to economic growth (Ivanov & Webster, 2006).

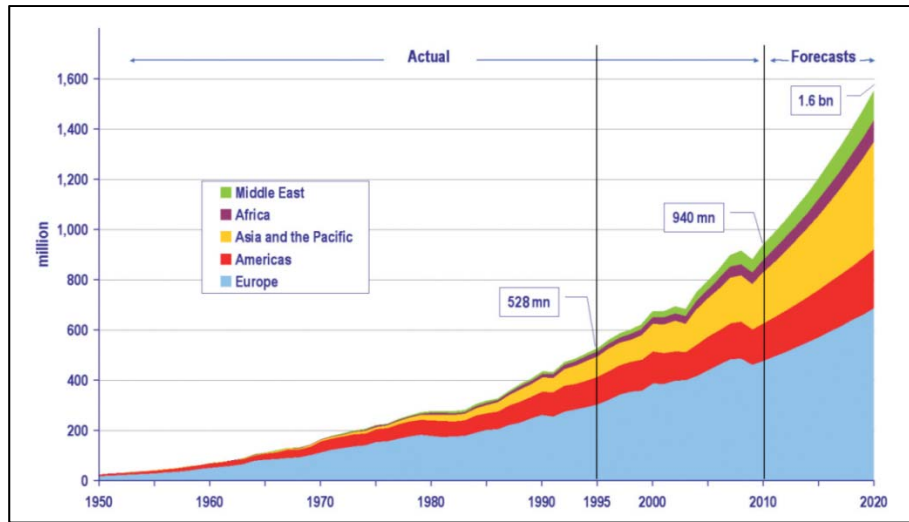
As such, tourism-generated proceeds have come to represent a significant revenue source, increasing employment, household income and government income in countries worldwide.

Tourism comprises the activities of persons traveling to and staying in places outside their usual environment for no more than one consecutive year for leisure, business and other purposes (WTO, 1999). Over the past several decades international tourism has gained distinct importance around the globe. World tourism recovered strongly in 2010 even exceeding the expectations. The tourists' arrivals grew by 6.7 percent in 2010 against the 4.0 percent decline in the previous year, the year hardest hit by the global economic crisis (UNWTO, 2011). Similarly, tourism receipt remained at US\$852 billion in 2009 (UNWTO, 2010).

According to the estimates of the World Tourism Organization, the number of international people movements around the world will rise to 1602 million by 2020, while tourism receipts will reach some US\$200 billion. Furthermore, the World Tourism Travel Council expects that the scale of the world tourism industry, which made up roughly 10.4% of the world's gross domestic product (GDP) in 2004, will increase to 10.9% in

2014. When all components of the tourism industry were taken into account, i.e., tourism consumption, investment, government spending and exports, the industry grew 5.9% in 2004 alone, reaching US\$5.5 trillion. The 10-year growth forecast is for US\$9.5 trillion in 2014. For these very reasons, thoroughly investigating all aspects of tourism development and economic growth is extremely important for governments (Leea,Chang: 2008, p.180)

Figure 1: International Tourist Arrivals by Region (million) (Source: unwto.org)



It has been more than a decade since tourism has been converted into the biggest industry in the world, and it has constantly been developed since then. Today this industry is a great income resource for many countries and most governments support the tourism industry actively. On the other side, half of the world employment will be allocated to tourism industry by 2020, based on statistics from the Tourism World Organization. The tourism industry is one of the highest income as well as growing resources in the world. The major factor of economic growth in many parts of the world has been tourism, since all sectors are related with this industry directly and indirectly. According to statistics of Tourism World Organization, the number of tourists in the world

exceeded 800 million persons in 2007, with an income of more than 800 billion dollars. It places the tourism industry in third rank of world trades, after the oil and automotive industries. This industry is one of the most important and highest income industries of the world in the 21 century, thus encouraging policy makers to pay more attention to this industry as an economic, cultural, and political and security development strategy, and its positive economic and cultural impacts are considered seriously by governments and nations (Lashkarizadeh et al, 2011).

According to the twenty-year outlook of the Islamic Republic of Iran, the contribution of international tourists will rise from 0.09% in 2004 to 1.5% in 2025. It means that, in order to attract 20 million tourists from global market annually, the country should invest more than 30 billion dollars in the industry. Based on the vision statement, Iran's share of the world tourism income should grow from 0.07% in 2004 to 2% in 2025, so that Iran will earn almost 25 billion dollars from tourism entrance annually up to 2025 (Adopted by the Council of Ministers, 2004). The current situation is unsatisfactory in any way, and reveals that the country has difficult path to reach 2 percentage of the world income tourism, therefore, regarding the objectives, vision statement can provide an important factor for accelerating the growth and development.

The following table shows the growth rate for tourist arrivals before and after the revolution. The table also shows the growth rate during the war and the First, Second, Third and Fourth Economic, Social and Cultural programs of the Islamic Republic of Iran. The growth rate of tourist arrivals in Iran was equal to 15.43% before the revolution. Due to the Islamic Revolution, a government change, the political situation of the region and the Iran-Iraq War (1979 to 1988), The growth rate of tourist arrivals to the country declined, and the industry faced with a -9.18% decrease. After the war, beginning with the Iran's first economic & social development program (1989-1994), the number of tourists arrived in Iran increased at an average of 28.83%. During the second

development plan (1995-1999), with a little change the average was 29.81% per year. The rate of economic development of the country during the Third Plan declined sharply compared to the first and second years of the program, an average of 74.4% per year, respectively. However, during the Fourth development plan (2005-2009) with the appropriate policy this rate has almost doubled compared to the third program.

Table 1: Average growth rate of tourist arrivals to Iran

Time period	The growth rate of tourist arrivals
Before the Revolution (1959-1978)	15.43
After the Revolution and War period (1979-1988)	-9.18
First Development Plan (1989-1994)	28.83
Second Development Plan (1995-1999)	29.81
Third Development Plan (2000-2004)	4.74
Fourth Development Plan (2005-2009)	8.69

Source: Iran statistical yearbook during the (1959-2009)

3. Review of Literature

Recently, there have been efforts to test empirically whether international tourism leads to economic growth. In one study, the role of tourism in Spain's long-run economic development was examined and evidence was found to support the tourism-led economic growth hypothesis for the data sample from the last three decades (Balaguer and Cantavella-Jorda, 2002). This finding implies an appropriate policy choice, which has led to positive tourism income multiplier effect in Spain. Another similar study found strong causality between international tourism earnings and economic growth for the economy of Greece for the period of 1960-2000 (Dritsakis, 2004). In brief, these studies imply that policies designed to attract tourists and that parallel international demand for tourism in these countries creates net positive income effects. As another Mediterranean country with significant sun-sand-sea attractions along long coastlines as well as numerous historical, cultural, geographical, and environmental attractions and facilities, Turkey's tourism development and tourism policies have contributed to Turkey's economic growth, especially since

1980. At the same time, Turkey has followed export-led industrialization and outward-looking development policies since 1980, similar to South Korea. In the context of this similarity, one may consider the effects of international tourism on South Korea's economic growth. Oh (2005) rejects the tourism-led economic growth hypothesis in favor of the economy-driven tourism growth hypothesis for South Korea: export-driven economic growth in the South Korean economy may be a strong causal component of tourism growth. In fact, Oh argues that the tourism-led growth occurs in economies where tourism demonstrates a spillover effect. Oh's finding implies that the share of tourism earnings in the GDP must be high in order to validate the tourism-led economic growth hypothesis. The proportion of tourism receipts in relation to manufacturing in the Korean GDP is too low, arguably, to accept the tourism-led economic growth hypothesis. One may consider that South Korean government policies might not be as rational as those in Spain and Greece, to match international tourism demand for goods and services, thereby leading to spillover effects.

Table 2: The Main Empirical Studies of Tourism Development and Economic Growth

Author(s)	Topic	Empirical Method	Result
Tayebi et al (2009)	Relationship between international tourism and economic growth in Iran and OECD countries as well as the selected countries	VAR model; VAR-Panel model	Research results show that there is a mutual causal relationship between tourism and economic growth of Iran, OECD countries as well as China, Hong Kong, Malaysia, Russia and Thailand and there is a long term balance between these two variables.
Brida et al. (2009)	Causality between Economic Growth and Tourism Expansion: Empirical Evidence from Trentino - Alto Adige	Johansen co-integration test; Granger causality	The existence of one co-integrated vector among real GDP, tourism and relative prices where the corresponding elasticities are positive. Impulse response analysis shows that a shock in tourism expenditure produces a fast positive effect on growth.

Author(s)	Topic	Empirical Method	Result
Katircioglu (2009)	Revisiting the tourism-led-growth hypothesis for Turkey using the bounds test and Johansen approach for co-integration	Co-integration: ARDL (Bounds test)	Unlike the findings of Gunduz and Hatemi-J (2005) and Ongan and Demiroz (2005), this study rejects the TLG hypothesis for the Turkish economy since no co-integration was found and error correction mechanisms plus causality tests cannot be run for further steps in the long term.
Mohammadzade and Najafinasab (2010)	Studied the causal relationship between tourism industry and gross domestic product in the selected Islamic countries	Standard Granger causality test	Result illustrates existence of a one-way causality relation from gross domestic product towards number of tourists.
Narayan et al. (2010)	Tourism and economic growth: a panel data analysis for Pacific Island countries	Panel data	1% increase in tourism exports increases GDP by 0.72% in the long run and by 0.24% in the short run.
Akinboade & Braimoh (2010)	International tourism and economic development in South Africa: a Granger causality test	Multivariate vector autoregressive, Granger causality	The result obtained showed a unidirectional causality running from international tourism earnings to real GDP, both in the short run and in the long run. The error correction mechanism carried out also supported this causality.
Belloumi (2010)	Relationship between tourism, real exchange rate and economic growth in Tunisia	Co-integration; Granger causality	Results indicate that tourism has a positive impact on GDP growth unidirectional.
Arslanturk et al. (2011)	Time-varying linkages between tourism receipts and economic growth in a small open economy	Time-varying causality; Time-varying coefficient model; (VECM)	The findings of this paper are as follows: results from the full sample within the VECM model indicate that there is no Granger causality between the series, while the findings from the time-varying coefficients model based on the state-space model and rolling window technique show that GDP has no predictive power for tourism receipts; however, tourism receipts have a positive predictive content for GDP following early 1980s.
Lashkarizadeh et al. (2012)	Relationship between tourism industry and economic growth in Iran	Standard Granger causality test; error correction model	Research findings indicate that there is a mutual causality relationship between tourism industry and economic growth in Iran and such relationship between these two variables is supported in long term.

Author(s)	Topic	Empirical Method	Result
Arslantürk& Atan (2012)	Dynamic relation between economic growth, foreign exchange and tourism incomes: an econometric perspective on Turkey	Co-integration and Granger causality, Vector Auto Regressive (VAR)	There is a causal relationship running from tourism incomes to economic growth, which supports the premise that tourism benefits economic growth.
Odhiambo& Nicholas M (2012)	Is tourism development an engine for economic growth? the Zambian experience	ARDL (bounds testing)	The findings of this study are not only consistent with the previous studies on this subject, but also support the current Zambian government initiative of boosting the tourism sector in order to promote economic growth. There is a unidirectional causal flow from labor force participation to economic growth – and from tourism development to labor force participation.
Amaghionye odiwe&Ahamefule (2012)	A causality analysis of tourism as a long-run economic growth factor in Jamaica	Multivariate co-integration, error-correction	There is a long-run positive relationship between economic growth and tourism. An increase in tourism receipts tends to have a positive impact on GDP.
Apergis& Payne (2012)	Tourism and growth in the Caribbean – evidence from a panel error correction model	Panel co-integration tests & panel error correction	Reveal a long-run equilibrium relationship between real GDP per capita, the real effective exchange rate and international tourist arrivals per capita. Reveals bidirectional causality between tourism and economic growth in both the short run and the long run.
Bento & Santos (2012)	Tourism as a long-run economic growth factor in Portugal: evidence from causality analysis	Granger causality test, vector auto regressions (VAR)	The results provide evidence of a strong one-way directional causality between tourism and economic growth and the necessary argument to support the tourism led growth hypothesis. This result has important policy implications for where government investments should be targeted giving a further catalyst to economic growth.
P. Srinivasan et al. (2012)	Tourism and Economic Growth in Sri Lanka	ARDL-UECM	Tourism has a positive impact on economic growth in Sri Lanka both in the short-run and long-run.

Author(s)	Topic	Empirical Method	Result
Ekanayake & Long (2012)	Tourism Development and Economic Growth in Developing	Panel co-integration, Granger causality	The results of the study suggest that governments of developing countries should focus on economic policies to promote tourism as a potential source of economic growth.
Narayan et al. (2013)	Does tourism predict macroeconomic performance in Pacific Island countries?	Panel Data	Visitor arrivals consistently predict exports and money supply, and to a lesser extent, exchange rates and GDP.
Robertico Croes (2013)	Tourism specialization and economic output in small islands	Panel Data	Tourism specialization is not harmful to growth, and, in lieu of technological gaps and resource limitations, tourism specialization is a sound option.
Ghartey, Edward (2013)	Effects of tourism, economic growth, real exchange rate, structural changes and hurricanes in Jamaica	Co-integration approach: Johansen and ARDL	In both the short term and the long run, an increase in tourism (both arrivals and real expenditures) causes expansion in economic growth, with tourist arrivals yielding more robust results. The tourism-led economic growth findings for both the short term and long run, albeit modest, imply that it can be worthwhile to extend incentives to promote Jamaica as a tourist destination.
Surugiu & Surugiu. (2013)	Is the tourism sector supportive of economic growth? Empirical evidence on Romanian tourism	Co-integration method and Granger causality (VECM)	There are Granger causality relationships running from tourism expansion to economic growth, which sustains the tourism-led growth hypothesis. These results emphasize the need for more consistent tourism development plans and strategies to be implemented at national and regional levels by the governmental authorities.
Brida. et al. (2013)	Causality between Tourism and Long-term Economic Growth: a Critical Review of the Econometric Literature	Co-integration, Granger type causality	There is strong empirical evidence in favor of the hypothesis of tourism as a generator of long-term economic growth. However, this does not make it possible to form conclusions of a general nature regarding policy and planning implications.

Author(s)	Topic	Empirical Method	Result
Ridderstaat et al. (2013)	Modeling Tourism Development and Long run Economic Growth in Aruba	Co-integration, VECM, Granger causality	The short-run dynamics of the model suggests a speed of correction of 0.25%, meaning that it would take about 10.5 years to correct for disturbances back to equilibrium. The long-run relation indicates that a 1% change in tourism revenues would lead to a 0.49% increase in real GDP in the long-run. They show that tourism is in part an endogenous growth process, requiring a systematic allocation of resources to sustain its development for local and regional economies.
Aslan (2013)	Tourism development and economic growth in the Mediterranean countries: evidence from panel Granger causality tests	Newly developed panel Granger causality tests	The study finds evidence to support the tourism-led growth hypothesis for a group of panel in Mediterranean countries. The results of the overall study suggest that governments of Mediterranean countries should focus on economic policies to promote tourism as a potential source of economic growth.

4. Methodology and Data Sources

In this paper, the panel data approach has been used for estimation of empirical model. The use of panel data allows not only the increase in the degrees of freedom and better estimators' large sample properties, but also the reduction in the endogeneity, due to the consideration of specific-country effects, omitted variables, reverse causality and measurement error.

In the economic growth literature, researchers have been interested in the rate at which provinces could fill the gap between their current positions and their desired long-run growth path. To determine the responsiveness of income growth rate to tourism and the traditional sector, the sources of economic growth such as investment in physical and human capital, employment growth and consumer price index, we first specify a simple double log-linear Cobb-Douglas production function as:

$$LN\text{GDP}_{i,t} = \beta_1 + \beta_2 LN\text{K}_{i,t} + \beta_3 LN\text{HUM}_{i,t} + \beta_4 LN\text{TOUR}_{i,t} + \beta_5 LN\text{UNEMP}_{i,t} + \beta_6 \text{INF}_{i,t} + \eta_i + \varepsilon_i, \quad (1)$$

Where $LN\text{GDP}_{i,t}$ is the natural logarithm of per capita GDP at constant prices during 2000-2010 for per province, calculated through the chain index (source: Iran statistical center, 2013), $K_{i,t}$ is performance of development budget in every province (source: Iran statistical center, 2013), $HUM_{i,t}$ is university graduates in per province (source: Iran statistical center, 2013), $TOUR_{i,t}$ is tourist receipts per capita in Rial for every state (source: Iran statistical center, 2013), $UNEMP_{i,t}$ is unemployment rate in per province (source: Iran statistical center, 2013), $\text{INF}_{i,t}$ is $(\text{cpi}-1.\text{cpi})/1.\text{cpi} * 100$ (source: Iran statistical center, 2013)¹.

To estimate the parameters corresponding to variables of interest from the data under consideration, we employ a panel data estimation, an empirical exposition of which is provided in equation (2) below.

$$Y_{it} = \delta_i + \Gamma_t + (X_{it})\Phi + \Psi_{it} \quad (2)$$

Where, Y_{it} is the natural logarithm of real GDP per capita in province i at year t , and X_{it} is a vector of the explanatory variables (tourism receipts, investment in physical and human capital, employment growth and consumer price index) for province $i = 1, 2, \dots, m$ and at time $t = 1, 2, \dots, T$, Φ a scalar vector of parameters of β_1, \dots, β_7 ; Ψ_{it} is a classical stochastic disturbance term with $E[\Psi_{it}] = 0$ and $\text{var}[\Psi_{it}] = \sigma_\varepsilon^2$, δ_i and Γ_t are country and time specific effects, respectively. Instead of a priori decision on the behavior of $\delta_i + \Gamma_t$, different types of assumptions are separately imposed on the model and the one that gives robust estimates is chosen.

If we assume the province specific effects to be constant across provinces and the time specific effects are not present [i.e. $\delta_i = \lambda$ and $\Gamma_t = 0$], then model (2) is estimated by the Ordinary Least Squares (OLS) method, or restricted OLS method. The second estimation technique assumes that the province specific effects are constant, but not equal (i.e. $\delta_i = \lambda_i$ and $\Gamma_t = 0$) which yields a one-way fixed effects model. The third

¹ Provinces studied in this paper include: East Azerbaijan, West Azerbaijan, Isfahan, Bushehr, Chaharmahal and Bakhtiari, South Khorasan, Khuzestan, Zanjan, Semnan, Sistan and Baluchestan, Kurdistan, Kohgiluyeh and Boyer-Ahmad, Gilan, Luristan, Markazi, Hormozgan and Yazd.

assumption is a situation where the province effects are not constants, but rather are disturbances; the time effects are not present [i.e. $\delta_i = \lambda + w_i$ and $\Gamma_i=0$] where $E[w_i]=0$ and $var[w_i]=\sigma_w^2$ and $cov[\psi_i, w_i]=0$. In this case, model (2) is estimated by the generalized least squares (GLS) which yields random-effects model.

As can be seen in Figure 1 Isfahan province has the highest percentage of foreign tourism revenue, which is equal to 25.8 %. This shows that the province has great attractions for foreign tourists. East Azerbaijan province with 14.6% is placed in second. West Azerbaijan and Yazd provinces with 10.7% and Hormozgan province with 10.5% are on the third and fourth grades. Other provinces' share can also be seen in Figure 1. Based on the data from Iran Statistical Center, foreign tourism revenue share of gross domestic product in each province is presented in Figure 2. According to the Figure, Yazd province has the most proportion. Second part of this share belongs to Hormozgan province. Province of West Azerbaijan is third in this respect. We can Result from this Figure that the GDP ratio of non-industrial province compared to industrial province, is more affected from foreign tourism income.

Table3: Data Description and Summary Statistics

Variable	Description	Mean	Std. Dev.	Min	Max
GDP	GDP per capita (constant 2013 Rial)	1.77e+14	5.81e+14	3.35e+12	4.16e+15
K	Physical Capital	1.25e+12	1.52e+12	1.83e+10	1.11e+13
HUM	Human Capital	8869.707	7312.15	1668	61537
TOUR	International tourism, receipts (current Rial)	1.20e+07	1.95e+07	7650	1.31e+08
UNEMP	unemployment rate	12.43561	4.473202	1	35.3
CPI	Consumer Price Index	44.81364	19.79334	18.3	83.9

Note: Number of provinces = 18, the values of the variables used are eleven years averages from 2000 through 2010; All variables are log transformed for the regression estimation. All data are from Iran statistic center.

Figure 1: Tourism Share of Iranian Provinces over the Period of 2000-2010¹

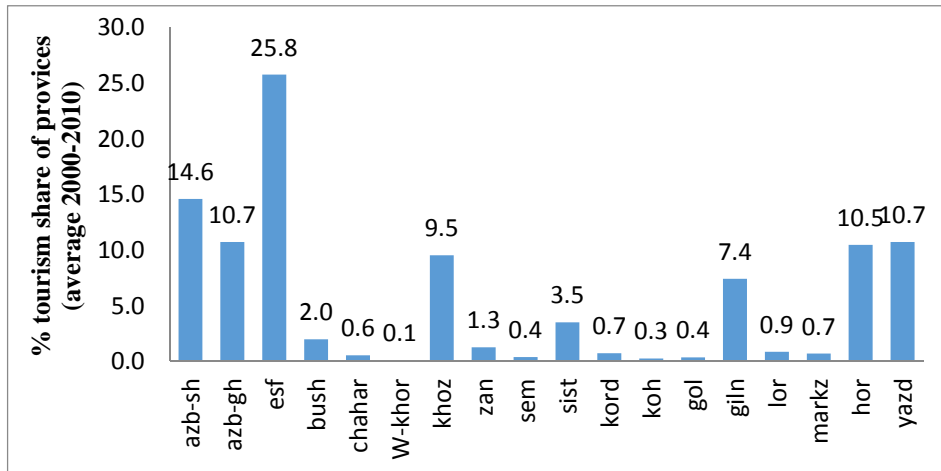
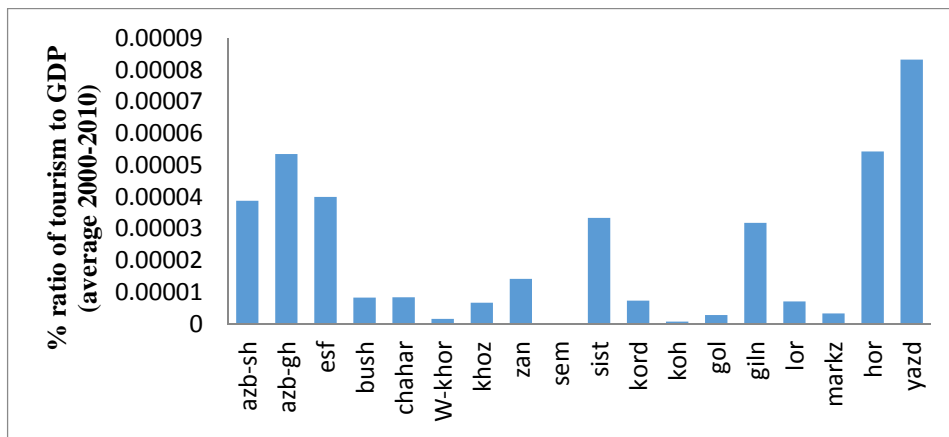


Figure 2: The Ratio of Tourism Revenue to GDP of Iran's Provinces for period 2000-2010



¹. The list of Iranian provinces in this paper include: East Azerbaijan(azb-sh), West Azerbaijan(azb-gh), Isfahan(esf), Bushehr(bush), Chaharmahal and Bakhtiari(chahar), South Khorasan(W-khor), Khuzestan(khoz), Zanjan(zan), Semnan(sem), Sistan and Baluchestan(sist), Kurdistan(kord), Kohgiluyeh and Boyer-Ahmad(koh), Gilan(giln), Luristan(lor), Markazi(markz), Hormozgan(hor) and Yazd(yazd).

5. Empirical Results

Our finding is based on the fixed-effects and random-effects models. The results reported in the following Tables. Broadly, the results of both models reveal the expected relationship between the GDP per capita and the explanatory variables. As model shows the variables representing the sources of growth, has the expected signs. Because we estimated a double-logarithmic model, all the coefficients represent elasticities.

Table 4: The Results of Model Estimation by Fixed and Random Effect Methods

Variable	Random effect				Fixed effect			
C	0.925 (.89)	-0.2643 (-0.37)	1.4379 (0.89)	0.1627 (0.21)	0.9246* (1.92)	-0.2666 (-0.43)	1.4349 (1.44)	0.15942 (0.23)
Ln K	0.3988*** (6.59)	0.4707*** (11.35)	0.3918*** (6.47)	0.4654*** (11.21)	0.3964*** (13.21)	0.4689*** (11.42)	0.3896*** (5.98)	0.4636* ** (11.2)
Ln hum	0.4352*** (4.89)	0.3451*** (5.25)	0.4245*** (4.89)	0.3358*** (5.15)	0.4355*** (7.94)	0.3451*** (5.19)	0.4250*** (4.54)	0.336** * (5.07)
Ln tour	0.097*** (3.8)	0.1012*** (3.9)	0.0978*** (3.80)	0.1023*** (3.91)	0.1013*** (4.1)	0.1047*** (3.97)	0.1018*** (3.83)	0.1056* ** (3.96)
Inf	--	-0.0035 (-1.08)	--	-0.0037 (-1.15)	--	-0.0035 (-1.11)	--	-0.0037 (-1.17)
unemp	--	--	-0.0975* (-1.82)	-0.0869 (-1.59)	--	--	-0.0969 (-1.59)	-0.0864 (-1.38)
R2	0.8942	0.8938	0.8957	0.8953	0.8942	0.8938	0.8957	0.8953
Obs	198	180	198	180	198	180	198	180
F-limber	--	--	--	--	459.16***	504.95***	461.13***	508.07* **
Brouh pagan	850.24***	682.35***	855.18***	686.74***	--	--	--	--
Hausman	2.98	-21.13	3.84	2.42	2.98	-21.13	3.84	2.42

Notes: t-statistics are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

We used Hausman specification test to compare the consistent fixed-effects model with the efficient random-effects model. The random-effects model was in favor of the fixed-effects one in all columns (Prob>chi2) except the second one, because the inflation has been added.

Utilizing F-limber test determines that using a panel data approach is more appropriate. F-limber in every four models of fixed-effects is greater than Fisher statistic ($\text{Prob} > F = 0.0000$). Therefore, the null hypothesis is that; the use of Integration Data reject is in favor of the use of Panel Data.

The residual sentences in model are significantly related to the explanatory variables. The result of Breusch-pagan test shows that null hypothesis is rejected. Null hypothesis is implying homogeneity of variance. Hence, the model has Heteroskedasticity, because BP test is greater than Chi-square statistic ($\text{Prob} > \text{chi}2 = 0.0000$) in every four models of random-effects.

The results indicate that tourist receipts have a positive and statistically significant effect on the GDP per capita (at $p < 0.01$) of Iran's provinces. Accordingly, we find that a 10% increase in the tourism receipts of provinces' economy would result in a 1% increase in the average of per capita income. Similarly, a 10% increase in investment in human capital (HUM) through rising university graduates in each province, will escalate the GDP per capita by 4% (at $p < 0.01$). Consistent with the findings of Barro (1990), Sinclair (1998), Temple (1999), Dritsakis (2004), and Durbarry (2004), we also find that investment in physical capital (K) which is measured by the performance of development budget in every province as a percentage of GDP has a positive and statistically significant impact on the real GDP of Iran's sampling provinces economy (at $p < 0.01$) i.e., a 10% increase in physical capital will lead to a 4.5% increase in the GDP per capita of provinces economy, a huge impact related to the other sources of growth.

Unemployment (UNEMP) and inflation (INF) have a negative impact on the real GDP growth rate. The results show that a 10% increase in unemployment rate of Iran's provinces will decrease GDP per capita by 0.95%. Correspondingly, a 10% increase in inflation would result a 0.03% decrease in the average of per capita income.

6. Conclusion and Policy Implications

The main aim of this paper is to investigate the effect of tourism on the economic growth in Iran's provinces and their development between 2000-2010. The findings of this study show that the spending of international tourists has positive impact on the economic growth. Moreover, a 1% increase in the spending of tourists leads to a 0.1% increase in the GDP per capita income. According to the World Tourism Organization (UNWTO), Iran offers considerable potential, not only for seaside, cultural, medical, sports and discovery tourism, but also for environmental and ecotourism. However, this potential remains largely untapped.

In addition, the results shows that the conventional sources of growth such as investment in physical and human capital can enhance provinces productivity and spur their economic growth. A policy implication which may be drawn from this study is that Iran's provinces can improve their economic growth performance, not only by investing in the traditional sources of growth such as physical and human capital, trade and foreign direct investment, but also by harnessing strategically the contribution of tourism industry and improving their governance performance.

These findings are important for policy makers; because they can now argue the allocation of more financial resources to the tourism industry (for more tourism supply and promotion) in order to obtain higher levels of economic growth in the future. Iran's provinces can increase its labor productivity by employing new management and operation strategies, importing advanced technologies and new inputs in the tourism industry, thereby increasing further economic growth. Furthermore, the endogenous nature of tourism requires policy makers to take care of buildings and maintain adequate conditions (for example, leadership, creativity, innovation, and entrepreneurship) to ensure a long-term potential growth of tourism and ultimately, the economy.

References

1. Akinboade, O. A. & Braimoh, L. A, (2010), "International tourism and economic development in South Africa: a Granger causality test". *Int. J. Tourism Res.*, Vol. 12, pp: 149–163
2. Amaghionyeodiwe & Ahamefule, Lloyd, (2012), "A causality analysis of tourism as a long-run economic growth factor in Jamaica", *Tourism Economics*, Vol.18, pp: 1125-1133.
3. Apergis, Nicholas & Payne, James E, (2012), "Tourism and growth in the Caribbean – evidence from a panel error correction model", *Tourism Economics*, Vol. 18, pp. 449-456.
4. Arslantürk, Yalçın & Atan, Sibel, (2012), "Dynamic relation between economic growth, foreign exchange and tourism incomes: an econometric perspective on Turkey", *Journal of Business, Economics & Finance*, Vol. 1, Issue: 1, pp: 30-37.
5. Arslanturk, Yalcin; Balcilar, Mehmet & Abidin Ozdemir, Zeynel, (2011), "Time-varying linkages between tourism receipts and economic growth in a small open economy", *Economic Modelling*, Vol. 28, Issue 1–2, pp: 664–671.
6. Aslan, Alpar, (2008), "Türkiye’de Ekonomik Büyüme ve Turizm Dışkisi Üzerine Ekonometrik Analiz", *MPRA Paper*, No. 10611, posted 19.
7. Aslan, Alper, (2013), "Tourism development and economic growth in the Mediterranean countries: evidence from panel Granger causality tests", *Current Issues in Tourism*.
8. Balaguer, J., and M. Cantavella-Jordá (2002), "Tourism as a long-run economic growth factor: the Spanish case", *Applied Economics*, Vol. 34-7, pp: 877-884.
9. Belloumi, M. (2010), "The relationship between tourism receipts, real effective exchange rate and economic growth in Tunisia". *Int. J. Tourism Res.*, Vol. 12, pp: 550–560.
10. Bento, J. P. & Santos, Maria Madalena Pinto, (2012), "Tourism as a long-run economic growth factor in Portugal: evidence from causality analysis", *Universidade de Aveiro, Revista Turismo & Desenvolvimento*.

11. Brida, Juan Gabriel; Barquet, Andrea &Risso, WistonAdrián, (2009), “Causality between Economic Growth and Tourism Expansion: Empirical Evidence from Trentino - Alto Adige”, *TOURISMOS: An International Multidisciplinary Journal of Tourism*, Vol. 5, No. 2,pp: 87-98.
12. Brida, Juan Gabriel; Pereyra, Juan Sebastián; Pulina, Manuela & Such Devesa, Maria Jesús, (2013), “Causality between Tourism and Long -term Economic Growth: a Critical Review of the Econometric Literature”, *Innovar*, vol. 23.
13. Croes, Robertico, (2013) "Tourism specialization and economic output in small islands", *Tourism Review*, Vol. 68, Issue: 4, pp: 34 – 48.
14. Dritsakis, N. (2004), “Tourism as a long-run economic growth factor: An empirical investigation for Greece using a causality analysis”, *Tourism Economics*, Vol. 10, pp: 305–316.
15. Dritsakis, N. (2012), “Tourism Development and Economic Growth in Seven Mediterranean Countries: A Panel Data Approach”, *Tourism Economics*.
16. Ekanayake, E. M. & Long, Aubrey E., (2012), “Tourism Development and Economic Growth in Developing”, *The International Journal of Business and Finance Research*, Vol. 6, No. 1, pp. 61-63.
17. Engle, R. F., & Watson, M. W. (1987), “*The Kalman filter: applications to forecasting and rational expectation models*”, In Bewley, T. F. (Ed.), *Advances in econometrics: Fifth World Congress*, vol. I. Cambridge: Cambridge University Press.
18. FayissaBichaka, Christian Nsiah and BadassaTadasse, (2007), “The Impact of Tourism on Economic Growth and Development in Africa”, Department of economics and finance *working paper series*.
19. Fayissa, Tiago Neves& Campos, Carla, (2005), “International Tourism and Economic Growth: a Panel Data Approach”, *Natural Resources Management*.
20. Ghartey, Edward E., (2013), “Effects of tourism, economic growth, real exchange rate, structural changes and hurricanes in Jamaica”, *Tourism Economics*, Vol.19, pp:919-942.

21. Gunduz L., A.Hatemi-J, (2005), "Is the Tourism-led Growth Hypothesis Valid for Turkey?" *Applied Economics Letters*, Vol. 12, pp: 499-504.
22. Iran statistical year book . [Online] available: <http://WWW.AMAR.Org.Ir>
23. Ivanov, S, & Webster, C. (2006), "Measuring the Impact of Tourism on Economic Growth", *GEOTOUR*, pp: 21-30.
24. Kasimati, E. (2011), "Economic Impact of Tourism on Greece's Economy: Cointegration and Causality Analysis", *International Research Journal of Finance and Economics*, Issue 79, pp: 79-85.
25. Katircioglu, S. (2009), "Revisiting the Tourism-led-growth Hypothesis for Turkey Using the Bounds Test and Johansen Approach for Cointegration", *Tourism Management*, Vol. 30, Issue 1, pp:17-20.
26. Kim, H., & Chen, H., Jan, S. (2006), "Tourism expansion and economic development", The case of Taiwan, *Tourism Management*, Vol. 27, pp: 925-933.
27. Lashkarizadeh, M, Keshmir, Z, ParhiziGashti, H, & BeigpoorShahrivar, R. (2012), "Evaluation of the Relationship between Tourism Industry and Economic Growth in Iran", *Asian Journal of Business and Management Sciences*, Vol. 1, No. 9, pp: 88-97.
28. Leea, C.-C., and Changb, C.-P., (2008), "Tourism development and economic growth: A closer look at panels", *Tourism Management*, Vol. 29, pp:180-192.
29. Mohammadzade, P., Najafinasab, M. (2009), "Studying the causal relationship between number of tourists and gross domestic product in the selected Islamic countries", *Economic Modeling Quarterly*, Summer, Vol. 4, pp: 99-112.
30. Narayan, P.K., Narayan, S., Prasad, A., and Prasad B.C. (2010), "Tourism and economic growth: a panel data analysis for Pacific Island countries", *Tourism Economics*, Vol. 16, No. 1, pp:169-183.
31. Narayan, Paresh Kumar; Sharma, Susan Sunila & Bannigidadmath; Deepa, (2013), "Does tourism predict macroeconomic performance in Pacific Island countries?" *Economic Modelling*, Vol. 33, pp: 780-786.

32. Oh, C. (2005), "The Contribution of Tourism Development to Economic Growth in the Korean Economy", *Tourism Management*, Vol. 26-11, pp: 39-44.
33. Ohiambo & Nicholas M., (2012), "Is tourism development an engine for economic growth the Zambian experience", *Economics, Management, and Financial Markets* , Issue 4, pp: 87-100.
34. Ridderstaat, Jorge; Croes, Robertico & Nijkamp, Peter, (2013), "Modelling Tourism Development and Longrun Economic Growth in Aruba", *Tinbergen Institute Discussion Paper*.
35. Srinivasan, P., Santhosh Kumar P.K. & Ganesh, L. (2012), "Tourism and Economic Growth in Sri Lanka", *Environment and Urbanization Asia September*, vol. 3, no. 2, pp: 397-405.
36. Surugiu, Camelia & Surugiu, Marius Razvan, (2013), "Is the tourism sector supportive of economic growth? Empirical evidence on Romanian tourism", *Tourism Economics*, Vol. 19, pp: 115-132.
37. Swamy, P. A. V. B., Conway, R. K., & LeBlanc, M. R. (1989), "The stochastic coefficient approach to econometric modeling, estimation, stability testing and prediction", *Journal of Agricultural Economics Research*, Vol. 41, pp: 4-20.
38. Tayebi, S.K., Jabbari, A. & Babaki, R. (2009), "Studying the causal relationship between tourism and economic growth", *knowledge and Development Magazine (scientific- research)*, autumn, Vol. 24.
39. United Nations World Tourism Organization. [Online] available: <http://WWW.UNWTO.Org>.
40. World Trade Organization. [Online] available: <http://WWW.WTO.Org>