Impact of International Tourism on Economic Growth in Turkey

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ARTICLE DETAILS	ABSTRACT
History **Revised format:** Feb, 2021 **Available Online:** Mar, 2021 **Keywords** Tourism; Inflation; Labor Force; Capital Investment; Ordinary Least Square (OLS) Method.	The main objective of this study is to examine the impact of tourism on economic growth of Turkey. For this purpose; the study used annual time series data from 1995 to 2020. The study also applied Ordinary Least Square (OLS) method to estimate the association between gross domestic product and tourism, inflation, capital investment and labor force. The results of OLS method show that there is a positive and significant impact of tourism and capital investment on economic growth. While, inflation has negative and insignificant and labor force negative and significant impact on economic growth. These findings suggest that greater improvement and capital investment and improves the skilled of labor force it will improves the productivity and economic growth. The study also confirms the Tourism – Led – Growth Hypothesis (TLGH) in Turkey.

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1. Introduction

There are many sectors that contribute to economic growth. Tourism is one of them; fast growing in tourism will lead to increase in employment and investment this will lead to increase in economic growth. In developing countries it is documented as potential contributor to achieve continuous growth in the economy. The millions of peoples traveling over the world, this will increase in national income and investment. Tourism has dominant role in the economic growth of developing countries.

Since 1980s, fast growing in tourism sectors is also monitored in Turkey. After 1980, tourism is considered as considerable part of the economic development. Tourism is the most energetic and leading sector of the Turkish economy. According to the statement of MoveHub Turkey was ranking as 6th most visited countries in the world with the number of 51.2 million peoples in 2019. The first is France with 89.4 million people. The table below shows the top ten most visited countries by tourist.

Sr.#	Countries	Tourist Arrivals
1	France	89.4 Million
2	Spain	83.5 Million
3	United State	79.3 Million

4	China	65.7 Million
5	Italy	64.5 Million
6	Turkey	51.2 Million
7	Mexico	45.0 Million
8	Thailand	39.8 Million
9	Germany	39.6 Million
10	United Kingdom	39.4 Million

According to this ranking turkey has most visited tourist as compare to Mexico, Thailand, Germany and United Kingdom. From 2000 to 2005, number of tourist increase frequently, but in 2006, number of tourist decrease because of influenza in Trabzon and World Cup Played in Germany. In 2007, the number of tourist coming to Turkey is once again increase and it went to decline in 2016 because of Jet Crisis between Turkey and Russia and Coup Attempt.

Income of tourism is considered as the main to contribute to national income and economic growth. It is clear that turkey's tourism income is directly related with the arrivals of tourism. Tourism income of Turkey is 7636 million USD in 2000 and continues to increase till 2005 to 20760 million USD. In 2006, it will decrease to 19137 million USD, after that it increases till 2014 to 38855 million USD, and in 2015 and 2016 it decrease to 35597 million USD and 26788 million USD. In 2019, Turkey receives highest tourism income as 34.5 billion USD. But in 2020, because of COVID-19 pandemic tourism income decrease to 12.06 billion USD. Income of tourism is depending on the conditions of economic and nation for example; in 2006 Turkey and Russia Jet Crisis, COVID-19 in these situation tourism income decreases.

Development in tourism sectors, will lead to increase in employment, income, investment and it play very dominant role in reducing the balance of payment deficit (Lee & Chang, 2008; Balaguer & Jorda, 2002; Romero & Molina, 2013). No doubt, international tourist play very dominant role in the global economy and is also the biggest services sector in foreign trade (Lew, 2011).

The main purpose of this research paper to finds out the impact of tourism on economic growth in Turkey form 1995 to 2020. For this purpose the study covered The Republic of Turkey.

2. Literature Review

There are many studies in which the impact of tourism on economic growth in different countries has been discussed. Some studies also discuss the Tourism Led Growth Hypothesis in different countries. Some reviews of different studies are given below.

Yildirim et al (2019), examines the effect of tourism sector on economic growth in Turkey. The study shows positive and significant impact of tourism on economic growth in turkey. The study also finds out that, increase in tourism income will lead to increase in GDP per capita.

Abedtalas (2017), investigate the impact of tourism on economic growth in Turkey. The study shows that different types of tourism have different impact on economic growth. Business and leisure tourism have significant impact and visiting tourism has insignificant impact on economic growth in Turkey.

Lew et al (2016), scrutinize the relationship between tourism and economic growth of different countries. The results show that there is positive and significant impact of tourism on economic growth. The study also finds that, investment in tourism sectors well lead to increase in GDP per capita.

Tekin (2015), investigate the impact of political and economic inconstancies on tourism sector in Turkey. The study finds out the impact of Global Economic Crises, Political Instability between Europe and Russia and Domestic Political Instability on tourism. The results show that tourism sector in Turkey is affected by the political instability and economic crises in Russia. Domestic political instability does not impacted negatively on tourism.

Kreishan (2015), investigate the impact of tourism on economic growth in Bahrain. The study also examines the Tourism-Led-Growth hypothesis in Bahrain. The results show that there is positive and significant relationship between tourism and economic growth in Bahrain. The study also finds that development in tourism sector will lead to increase in economic growth. The study confirms the TLGH in Bahrain; it means increase investment in tourism sector will lead to increase in economic growth.

Hooy (2014), scrutinize the impact of tourism on economic growth in Malaysia and Singapore. The study also finds the existence of Tourism-Led-Growth Hypothesis (TLGH) and Economic-Driven-Tourism Hypothesis (EDTH). The study confirms the EDTH in Malaysia and TLGH in Singapore. The study concludes that, competitive exchange rate is very important to increase the tourism sector; this will lead to increase in economic welfare in both Malaysia and Singapore.

Jayathilake (2013), investigate the impact of tourism on economic growth in Sir Lanka by using Real GDP, Tourist Arrival and Exchange Rate. The results show that, there is positive and significant relationship between tourism and economic development and also confirms the existence of TLGH in Sri Lanka. The study proves that, it is necessary for the government to promote the international tourism to achieve sustainable economic growth.

Ertugrul and Mangir (2012), investigate the impact of tourism on economic growth and existence of TLGH Hypothesis in Turkey. After applying different econometrics models; the study shows that, international tourism put positive and significant impact on economic growth in long run as well as short run in Turkey. The study also confirms the existence of Tourism-led-growth hypothesis in Turkey.

Kreishan (2010) scrutinize the impact of tourism on economic growth in Middle East country Jordan. The study shows positive and significant relationship in long run and short run in Jordan. The study also suggests that, policy maker should promote international tourism to achieve sustainable economic development.

Belloumi (2010), analyze the role of international tourism and real effective exchange rate in economic development in Tunisia in the region of North Africa. The results of the Johansen Technique show that, tourism put positive and significant impact on economic growth in Tunisia.

Katircioglu (2009), investigate the existence of Tourism-Led-Growth Hypothesis (TLGH) and Economic-Driven-Tourism Hypothesis (EDTH) in case of Malta. First, the study shows the positive and significant impact of tourism

on economic development in Malta. Secondly, the study confirms both Tourism-Led-Growth Hypothesis (TLGH) and Economic-Driven-Tourism Hypothesis (EDTH) in Malta.

3. Theoretical Framework

Robert Solow and Trevor Swan presented a model of long run economic growth within the framework of neoclassical economics in 1956. According to this economic model, long run growth rate of an economy is depending on the exogenous factors. Exogenous factors includes Capital Accumulations, Increase in Labor, technological advancement etc.

A standard Solow model predicts that in the long run, economies converge to their steady state equilibrium and that permanent growth is achievable only through technological progress. An interesting implication of Solow's model is that poor countries should grow faster and eventually catch-up to richer countries.

The augmented version of the Solow-Swan neoclassical growth model, developed by Mankiw, Romer and Weil (1992), hereafter MRW, is of interest. Adopting the MRW neoclassical approach has one advantage in which a simple theoretical framework for empirical growth regression is explicitly derived. Hence, following the MRW framework is a useful foundation for empirical work on economic growth.

MRW extended the Solow model by considering a broader measure of the capital stock that includes both human and physical capital, in which both are augmented by investment of a fraction of GDP, while maintaining the assumptions of exogenous technological progress and diminishing returns to all capital.

Similar to Solow Swan model, the production function is:

$$Y(t) = K(t)^\alpha H(t)^\beta (A(t)L(t))^{1-\alpha-\beta}$$

Where Y is output, K is physical capital, H is human capital, L is labour supply, and A is the level of technology. MRW assume that investment rates in physical and human capital are constant and that both types of capital depreciate at a common rate. Technology grows at the same exogenous rate, g, across countries, while the labour force grows at differing rates n.

4. Data and Methodology

The present study used Annual Time Series data from 1995 to 2020 to discover the association between dependent and independent variables. The data of different variables like GDP, Tourism, Inflation Rate, Labor Force and Capital Investment are collected from official website of World Bank and The Global Economy. The study converted these data in to logarithm form. The study also applied Ordinary Least Square Method for data analysis. The Macroeconomic Model is presented as:

$$\textbf{GDP} = f \text{ (Tourism, Inflation, Labor Force, Capital Investment)}$$

Econometric Model of the study is:

$$\textbf{GDP} = \beta_0 + \beta_1 TOR + \beta_2 INF + \beta_3 LF + \beta_4 CI + \mu_t$$

5. Results and Discussion

In this present study the empirical data analysis will be performed. For this purpose, it is necessary to take an overview of some basic properties of dependent and independent variables.

Descriptive Statistics:

Descriptive statistics of different variables are given in the table below:

	Mean	**Median**	**Maximum**	**Minimum**	**Std. Dev.**	**Skewness**	**Kurtosis**
GDP	13.10677	13.40771	13.77239	12.04053	0.609767	-0.536180	1.665041
TOR	9.756387	9.3962049	10.56759	8.508556	0.686450	-0.531548	1.866561
INF	2.868066	2.378464	4.489905	1.832741	0.966061	0.679389	1.767111
LF	3.218567	3.135151	3.521052	3.041661	0.164387	0.644446	1.888646
CI	11.77107	12.07729	1259990	10.50012	0.727476	-0.468732	1.588272

<div align="center">Sources: Calculation by Using E-views 9</div>

The first column show the average of GDP, TOR, INF, LF and CI is (13.10677), (9.756387), (2.868066), (3.218567) and (11.77107) respectively.

The skewness values are given in the second last row of the table. Skewness represents the asymmetry and inequity from the mean of data distribution. If the mean is in the middle and top point of the bell curve and mean median and mode are same, the data distribution is skewed.

Here in the table we can see that, GDP and CI are negatively skewed because their mean value is less than their median value. While TOR, INF and LF are positively skewed because their mean value is greater than their median value.

Last row shows the values of Kurtosis, It shows the flatness and peakness of the data to normal distribution. If probability distribution is highly peaked, the value of Kurtosis is greater than 3, it is known as Leptokurtic. If probability distribution shows flatness of the data, the value of Kurtosis is less than 3, it is known as platykurtic. In the table below, we can see that the values of all variables are less than 3, so these variables are platykurtic.

Variance Inflation Factors (VIF)

The problem of multicolinearity is checked by Variance Inflation Factors. The results of VIF are shown in the table below:

Variables	**Centered Values**
TOR	7.198671
INF	4.584830
LF	5.437329
CI	9.480176

<div align="center">Source: Calculation by Using E-Views</div>

The results of VIF are shows in the table above. The Centered Value of VIF is should be less than 10. If the Centered Value of VIF is less than 10 it shows that there is no multicollinearity problem. If the Centered Value of VIF is greater than 10, it means that problem of multicollinearity is exist. The table above shows that there is no multicollinearity exists.

Results of Ordinary Least Square Model:

The table below shows the effect of independent variables on dependent variable.

Ordinary Least Square Model			
Dependent Variables Log of GDP			
25 Observations from 1995 to 2020			
Variables	**Coefficient**	**Std. Error**	**t-Statistics**	**Prob.**
TOR	0.143327	0.52313	2.739783	0.0130
INF	-0.007778	0.027923	-0.278558	0.7836
LF	-0.175724	0.097458	-1.803085	0.0873
CI	0.527335	0.043521	12.11669	0.0000
C	3.060228	0.401399	7.623903	0.0000
GDP(-1)	0.232372	0.052594	4.418222	0.0003
R^2	0.993089	**Adjusted R^2**		0.991270
Durbin-Watson Test	2.021761			

Sources: Calculation by Using E-views 9

The results show that the value of coefficient of variable TOR is positive and significant impact on gross domestic product. It show that one percent increase in tourism it will 0.143327 unit increase in gross domestic product. Our result confirms the findings of Yildirim et al (2019).

The value of coefficient of variable inflation put negative and insignificant impact on gross domestic product. it show that one percent increase in inflation it will decrease -0.007778 units decrease in gross domestic product. This result supports the findings of Karahan and Colak (2020).

The value of coefficient of variable labor force put negative but significant impact on gross domestic product. It shows that, one percent increase in labor force it will decrease -0.175724 units in gross domestic product. The study supports the findings of Jelilov et al (2020).

The value of coefficient of variable capital investment shows positive and significant impact on gross domestic product. It shows that, one percent increase in capital investment it will increase 0.527335 units in gross domestic product. The result of the study support the findings of Bayar, Y. (2014).

Auto – Correlation Test

The autocorrelation problem is test by Breusch – Godfrey Serial Correlation LM test. The table below shows the results of Breusch – Godfrey Serial Correlation LM test.

Breusch-Godfrey Serial Correlation LM Test	
F-statistic	0.1418
Prob.	2.195643

Source: Calculation by Using E-views 9

If the probability value is significance it means that the problem of autocorrelation is exist. And if the probability value is insignificant then the problem of autocorrelation is not in the data. So the probability value of the above table is insignificant (0.1418), it means that there is no autocorrelation.

Heteroskedasticity Test

The problem of heteroskedasticity is test by Breusch – Godfrey test. The table below shows the results of Breusch – Godfrey test for Heteroskedasticity.

Heteroskedasticity Test: Breusch-Pegan-Godfrey	
F-statistic	0.1228
Prob.	2.414897

Source: Calculation by Using E-views 9

The problem of heteroskedasticity is test by Breusch – Godfrey test. If the probability value is significance it means that the problem of heteroskedasticity is exist. And if the probability value is insignificant then the problem of heteroskedasticity is not in the data. So the probability value of the above table is insignificant, it means that there is no autocorrelation.

6. Conclusion

The main objective of present study is to investigate the impact of Tourism on economic growth in case of Turkey. For this purpose, the study used annual time series data from 1990 to 2020. The present study reviews various literatures which are related to tourism and economic growth in turkey and other countries. Through the previous literature reviews, the study investigated the positive relationship between tourism and economic growth. The study also throws light on Solo Swan Growth Theory which shows the impact of exogenous factors on economic growth. Firstly, the study finds the result of descriptive statistics. Secondly, the present study analyses the problem of multicolinearity by using Variance Inflation Factors, the results which show that there is no multicolinearity. In the next step, the present study applies Ordinary Least Square (OLS) method to co-integration and to find the relationship between dependent variable and independent variables. The findings show that tourism and capital investment put positive and significant impact on economic growth of Turkey. While inflation put negative and insignificant and labor force have negative but significant impact on economic growth. The study also confirms the Tourism – Led – Growth Hypothesis (TLGH) in Turkey. The findings suggest that investment in labor force which has low skilled to improve the productivity and economic growth. The study also suggests that. Policy makers should be aware of the effect of tourism on economic growth and construct those policies that are suitable for tourism as well as arrivals of tourist.

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