THE CAUSALITY AMONG TOURISM RELATED FACTORS AND GDP FOR EU MEMBERS

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Abstract: *Tourism is an important concept for the EU countries which is economically the second market in the world. The countries try to increase their tourism revenues as they contribute to the economy. International tourism is considered as a major source of exporting revenues for the EU member countries. Having too much importance in the economy, this paper aims to examine the long term and short term relationships among international tourism revenues and tourism related factors such as tourism expenditure, tourist arrivals and GDP of the EU member countries. As a methodology, Granger causality and Johansen cointegration methods are used. The panel data analysis is performed for 22 years using annual data of the EU member countries. The main findings of the tests reveal the existence of long run relationship between tourism revenue and GDP, tourism arrivals and GDP and tourism expenditure and GDP.*

Keywords*:* European Union, Tourism, GDP, Causality.

JEL Classification Codes: C22, L83, Z32.

1. INTRODUCTION

European Union is a union which has 28 member countries. EU is a single market which allows the member of each country to move freely in terms of people, goods, services and capital. Tourism is one of the important areas that have a great role in EU economy. EU is the second largest economy in the world having a GDP of 14,900 billion euro as of 2016. Among the 28 member countries, 23 of them are categorized as advanced diversified economies and the remaining countries, namely Bulgaria, Croatia, Hungary, Poland and Romania) are categorized as emerging market and developing economies according IMF categorization. The EU forms 40% of the international tourist arrivals and 31% of the international tourism receipts of the world. As of 2016, the international tourist arrivals have increased 4% with respect to the previous year. As tourism is one of the most important sector in the economies, this paper aims to analyze the relationships among tourism revenue and some tourism related factors such as international tourist arrivals, international tourism expenditure and GDP. (World Tourism Organization (2018), European Union Tourism Trends, UNWTO).

By analyzing these relationships, it is aimed to find the interaction of the tourism related factors and GDP with each other and to test whether long term or short term relationships exist

or not. If such a relationship exists, then policymakers can pay attention to the factors that cause economy to grow and tourism revenues to increase etc.

There are strong relations between tourism sectors and the countries' economic growth. The investments and the activities that are realized within the scope of tourism sector also have a driving force on the other sectors that constitute the dynamics of economic growth and development. The investments made within the scope of tourism sector have a significant impact especially on the construction and food sectors. The planning on the creation of new tourism settlements, capacity expansion, chain building and etc. lead to the revival of the construction sector and development of the sectors. As a chain, the growth in the construction sector feeds the other sub-sectors and has a significant impact on increasing employment opportunities and reducing unemployment, which is one of the most important policy objectives of the economies. The employment and income flow of this effect increase the expenditures and thus the economy enters the growth process as a chain link and through nurturing sectors and subsidiary sectors. In the formation of this process, which is also mentioned above, it is examined in many studies as tourism sector is a substantial trigger on the growth of economy in a comprehensive and multidimensional way. As the member countries within the European Union include the countries that have a leading share in terms of tourism, they provide a significant resource transformation not only on the basis of the countries themselves but also within the European Union. As a result of the efficient use of the potentials of the member countries in the tourism sector and providing them as an added value to their economies, the European Union resources allow the EU to allocate resources to the policies and practices that will add value to both the European Union and the member countries, instead of spending resources for the economic deficiencies of the member countries and for the purposes of recovery from difficulties.

The relationship between tourism and economy has been studied in many papers. Among these studies, some are on developed markets and some are on developing markets. Among these studies, Samimi et al. (2011) examine the long term causality relationship between tourist arrivals and economic growth for 20 developing countries by using panel VAR model covering the period between 1995-2009. They report that a one percent increase in international tourist arrivals causes the economic growth to increase by 0.68 percent. Shadzad, Shahbaz, Ferrer and Kummar (2017) investigate the relationship between tourism-led growth and economic growth for Mexico where they report a positive relationship. Hye and Khan (2013) examine the long run relationship between economic growth and tourism for Pakistan. As a model they used Bounds method using 1971-2008 period and they report that tourism expenditures cause economic growth.

Ohlan (2017) examine the relationship between tourism and growth for India for the period between 1960-2014 by considering financial development. He finds that tourism encourages economic growth in India both for the short and the long run. Arslanturk, Balcilar and Ozdemir (2011) study the relationship between economic growth and tourist receipts in Turkey. Their results indicate that there is no causality between these two variables.

In another study, Van der Schyff, Meyer, and Ferreira (2019) analyze the relationship between tourism and economic growth and development. The results of their study indicate that there exist long run relationships between tourism and economic growth and development but no short term relationship is observed between tourism and economic growth.

Massidda and Mattana (2013) analyze the long and short term relationships among per capita international tourist arrivals, real GDP and total international commercial transactions for the case of Italy. They report bidirectional long run causality between tourist arrivals and GDP. Balaguer and Cantavella-Jorda (2002) examine the contribution of tourism to the growth of the economy for Spain. Their results shows the existence of contribution.

In this paper, having too much importance in tourism, the relationship among tourism revenue and tourism expenditure, tourism revenue and tourist arrival, tourisim revenue and GDP are examined for the EU member countries using panel data analysis.

In this study, different from the other studies, three tourism related factors, tourism expenditure, tourism revenue and tourist arrival, in addition to GDP are included and the time span is extended. The analyses are also carried out for EU member countries which has a great part in tourism revenue. In the next section, methodology part is explained while the conclusion is in the last part.

2. RESEARCH DESIGN AND EMPIRICAL FINDINGS

In the study, to test the causality among tourism related factors and GDP, international tourism revenues, international tourism expenditures, international tourist arrivals and gross domestic products (GDP) of the EU member countries are used. The annual data of international tourism revenues, international tourism expenditures, international tourist arrivals and GDP are taken from the Word Bank World Development Indicators. The frequency of the dataset are annual. The period that is used in the study is between 1995-2016. The data used in the study are in USD.

As a methodology Johansen cointegration and Granger causality tests are used. The reason of using Johansen cointegration is to test the existence of long term relationship between the variables. In addition, to test the existence of short run relationship Granger causality is used. As a first step, in order to test whether the variables used in the study contain unit root or not, some unit root tests such as Augmented Dickey Fuller (ADF) and Phillipps Perron (PP) are used.

In Table 1, the ADF and PP test results are reported. In the first column, the variables used in the study are reported. In the second and third column ADF unit root test results at intercept and trend and intercept, in columns four and five PP unit root test results at intercept and at trend and intercept are reported. As it can be seen from Table 1, all variables are integrated at order 1, *I (1)*, for ADF and PP tests both at the intercept and trend and intercept.

Table 1. Augmented Dickey Fuller Test Results for European Union

	EUROPEAN UNION – ADF(0)		*EUROPEAN UNION – PP(0)*	
Variables	*Intercept*	*Trend and Intercept*	*Intercept*	*Trend and Intercept*
Tourism Revenue	-4.305*** (0.0005)	-4.310*** (0.0032)	-4.321*** (0.0004)	-4.321*** (0.0031)
Tourism Expenditure	-3.791*** (0.0032)	-3.839** (0.015)	-3.757*** (0.0036)	-3.801** (0.017)
Tourist Arrival	-3.958*** (0.0018)	-3.944** (0.011)	-3.998*** (0.0015)	-3.983*** (0.0097)
GDP	-3.336** (0.0137)	-3.437** (0.0475)	-3.674*** (0.0047)	-3.770** (0.0187)

*** and ** show the level of significance at 1% and 5% respectively.

Table 2 reports the Johansen cointegration relatiomship beween tourism revenue and tourısm exoenditure. The results of the cointegration test suggest that these variables are cointegrated at 1% significance level.

Table 2. Cointegration relationship between tourism revenue and tourism expenditure

Hypothesis	*Eigenvalue*	*Trace Statistics*	*5% Critical Value*	*Probability*
None	0.0338	32.881***	15.494	0.0001
At most 1	0.0188	11.712***	3.841	0.0006
Hypothesis	*Eigenvalue*	*Max-Eigen*	*5% Critical Value*	*Probability*
None	0.0338	21.168***	14.264	0.0035
At most 1	0.0188	11.712***	3.841	0.0006

*** shows the significance at 1%.

In Table 3, the Johansen cointegration relationship between tourism revenue and tourist arrival are shown. The results indicate the significance at 1% suggesting that the variables are cointegrated.

Table 3. Johansen Cointegration relationship between tourism revenue and tourist arrival

Hypothesis	*Eigenvalue*	*Trace Statistics*	*5% Critical Value*	*Probability*
None	0.043	42.072***	15.494	0.000
At most 1	0.024	15.059***	3.841	0.0001
Hypothesis	*Eigenvalue*	*Max-Eigen*	*5% Critical Value*	*Probability*
None	0.043	27.012***	14.264	0.0003
At most 1	0.024	15.059***	3.841	0.0001

*** shows the significance at 1% significance level.

In Table 4, the Johansen cointegration relationship between tourism revenue and GDP are shown. The results show that at 1% significance level, the variables are cointegrated.

Table 4. Johansen Cointegration relationship between tourism revenue and GDP

Hypothesis	*Eigenvalue*	*Trace Statistics*	*5% Critical Value*	*Probability*
None	0.033	31.773***	15.494	0.0001
At most 1	0.017	11.017***	3.841	0.0009
Hypothesis	*Eigenvalue*	*Max-Eigen*	*5% Critical Value*	*Probability*
None	0.033	20.755***	14.264	0.0041
At most 1	0.017	11.017***	3.841	0.0009

*** shows the significance at 1% significance level.

Table 5 reports the Granger causality test results between tourism revenue and tourism expenditure which tests the short term causality of the variables. The test results show that tourism revenue do not Granger cause tourism expenditure and vice versa.

Table 5. Granger causality test results between tourism revenue and tourism expenditure

Dependent: Tourism Revenue			
Independent	*Chi-Square*	*Df*	*Probability*
Tourism Expenditure	0.091	1	0.7617
Dependent: Tourism Expenditure			
Independent	*Chi Square*	*Df*	*Probability*
Tourism Revenue	0.473	1	0.491

The Granger causality test results between tourism revenue and tourist arrivals are shown in Table 6. The results indicate that tourism revenue does not Granger cause tourist arrivals and vice versa.

Table 6. Granger causality test results between tourism revenue and tourist arrivals

Dependent: Tourism Revenue			
Independent	*Chi-Square*	*df*	*Probability*
Tourist Arrival	0.012	1	0.910
Dependent: Tourist Arrival			
Independent	*Chi Square*	*df*	*Probability*
Tourism Revenue	0.061	1	0.806

*** shows the significance at 1% significance level.

The Granger causality test results between tourism revenue and GDP are shown in Table 7. The results show that tourism revenue do not Granger cause GDP and vice versa.

Table 7. Granger causality test results between tourism revenue and GDP

Dependent: Tourism Revenue			
Independent	*Chi-Square*	*df*	*Probability*
GDP	0.260	2	0.878
Dependent: GDP			
Independent	*Chi Square*	*df*	*Probability*
Tourism Revenue	0.251	2	0.882

*** shows the significance at 1% significance level.

3. DISCUSSIONS

EU is the second biggest market in the world. The contribution of tourism to the economy of the countries are considerably high. According to the statistics of statista, the European countries with the largest international tourism receipts in 2017 are Spain (67.96 billion USD),

France (60.68 billion USD), UK (51.21 billion USD), Italy (44.23 billion USD), Germany (39.82 billion USD), Austria (20.4), Portugal (17.12 billion USD), Switzerland (17 billion USD), Greece (16.53 billion USD), Netherlands (15.87 billion USD)1. When the contribution to the country's GDP are considered, the ratios are 19.7% for Greece, 17.3% for Portugal, 15.4% for Estonia, 14.9% for Spain, 14.8% for Austria, 13% for Italy, 11.9% for Slovenia, 11.5% for Bulgaria, 10.7% for Germany, 10.5% for UK2. The tourism statistics show the importance of tourism for the economies of the EU member countries.

The purpose of this study is to provide contribution to the economy literature by analyzing the long and short term relationship among tourism revenues with tourism related factors and GDP of the countries included in EU. The findings of the Johansen cointegration test shows the existence of long run relationship between tourism revenue and tourist arrivals, tourism revenue and tourism expenditure and tourism revenue and GDP. Moreover, Granger causality test results suggest that, none of the tourism related factors and GDP have short term relationships with each other.

When the results of the study are evaluated, it can be stated that investment expenditures primarily affect tourism revenues in a long-term. The tourism investments made by the companies in the tourism sector, both by themselves and by the public, provide cash flow in the long run; but it is determined that the cash flows provided by these costs are statistically significant in the long term. This is a natural consequence of long-term tourism investments. Secondly, the increase in the income level of the individuals who are the customers of the tourism sector causes the tourism income to increase. The attainment of a meaningful level of income makes it possible for individuals to travel within their budget and to include accommodation items, which in turn has an impact on boosting tourism revenues. The impact of the number of tourists included in the analysis also depends on the income level of the tourists.

As a result, for the development of the tourism sector, which is a very important source of income, it is very substantial for policy makers and decision makers of the countries to provide appropriate incentives to improve the sector and to focus on promotional activities aimed at revealing and developing the potential of the sector.

Some limitations of the study may be counted as follows: The analyses are carried out for the annual data due to the lack of finding quarterly data for some of the countries. Moreover, the period that is concerned starts by 1995 due to the lack of data. The analysis may also be carried out for the other regions where data are available.

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[1] The international tourism receipt of the other EU member countries are samller than 15 billion USD. The complete list can be viewed at https://www.statista.com/statistics/261746/countries-in-europe-ranked-by-international-tourism-receipts/

[2] The share of the other EU countries are less than 10%.

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