

**MEF UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES**

**THE IMPACT OF TOURISM REVENUES ON
ECONOMIC GROWTH**



M.A. THESIS

Kaan Samsun

Department of Economics

Economics and Finance M.A. Programme

İSTANBUL, 2020

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Kaan Samsun, an M.A. student of MEF Graduate School of Social Sciences, student ID 321806008, successfully defended the thesis entitled “THE IMPACT OF TOURISM REVENUES ON ECONOMIC GROWTH”, which he/she prepared after fulfilling the requirements specified in the associated legislations, before the jury whose signatures are below.

Thesis Advisor : **Assoc. Prof. Dr. Nazlı Toraganlı KARAMOLLAOĞLU**

.....

MEF University

Jury Members : **Asst. Prof. Dr. Nida TÜREGÜN**

ÖZYEĞİN University

.....

Asst. Prof. Dr. Barış SOYBİLGEN
İSTANBUL BİLGİ University

.....

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FOREWORD

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ABBREVIATIONS

WTTC:	World Travel and Tourism Council
UNWTO:	The United Nations World Tourism Organization
WB:	World Bank
GDP:	Gross Domestic Product
SPO:	State Planning Organization
CBRT:	Central Bank of the Republic of Turkey
TÜRSAB:	Association of Turkish Travel Agencies
TURKSTAT:	Turkish Statistical Institute
TTYD:	Turkish Tourism Investors Association
REER:	Real Effective Exchange Rate
WDI:	World Development Indicators



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THE IMPACT OF TOURISM REVENUES ON ECONOMIC GROWTH

ABSTRACT

This paper shows empirical results of the impact of tourism revenues on economic growth based on a sample covering of 181 countries using annual data for the period 1995-2018. Using a linear regression model in parallel to Figini et al. (2009), I test the impact of tourism specialization on per capita GDP across a group of countries with different levels of tourism specialization. My results show that increase in tourism specialization, measured as the ratio of tourism revenues to nominal GDP, positively impact per capita growth rate of countries which are highly dependent on tourism. For the whole sample, the estimation results fail to find a significant relationship between tourism and economic growth. However, I find a positive and significant coefficient for openness and investment variables across different specifications, in parallel to expectations, indicating that these two variables positively affect GDP per capita.

Key Words: Tourism, economic growth, tourism revenues.

TURİZM GELİRLERİN EKONOMİK BÜYÜME ÜZERİNDEKİ ETKİSİ

ÖZET

Bu çalışma, 1995-2018 dönemine ait 181 ülkeyi kapsayan bir veri setini kullanarak, turizm gelirlerinin ekonomik büyüme üzerindeki etkisinin ampirik sonuçlarını göstermektedir. Çalışma kapsamında Figini ve diğerlerinin (2009) çalışmasına paralel bir yaklaşımla doğrusal regresyon modelini kullanarak, turizmin farklı turizm gelir seviyesine sahip ülke gruplarında kişi başına düşen gayri safi yurtiçi hasılat (GSYİH) üzerindeki etkisini test ediyorum. Çalışmanın sonuçları, turizm gelirlerinin nominal GSYİH'ya oranı yüksek olan, turizm odaklı ekonomilerde kişi başına GSYİH büyüme oranını olumlu etkilediğini göstermektedir. Bütün ülkeler baz alındığında, tahmin sonuçlarına göre, turizm ve ekonomik büyüme arasında anlamlı bir ilişki raporlanmamıştır. Ayrıca, beklentilere paralel olarak, açıklık ve yatırım değişkenlerinin katsayıları tüm spesifikasyonlarda pozitif ve anlamlı bulgulararak, bu iki değişkenin kişi başına düşen GSYİH'yi olumlu etkilediğini göstermektedir.

Anahtar Kelimeler: Turizm, ekonomik büyüme, turizm gelirleri.

1. INTRODUCTION

Due to economic and technological developments, with the significant acceleration of globalization in the 1980s, the outward-facing growth model has been adopted, especially in developing countries; however, these countries have not succeeded as much as required to increase the export of products for the manufacturing industry due to their dependence on technology and production input (İnançlı & Konak, 2011). Therefore, developing countries have to turn to different sectors due to various problems in their production structures. In this regard, the tourism sector has been considered a potential driver for growth in developing countries.

The tourism sector, which includes aspects such as accommodation, planning, travel organization and sales, as well as activities of the transportation and construction sectors, are referred to as 'typical tourist activities', and act as a driving force in the development of other sectors within this dynamic structure. Tourism enables people and nations to get to know each other mutually, as well as to protect and evaluate the natural, social and cultural environment (Usta, 2014). In terms of economics, tourism encapsulates millions of people as consumers and producers. Tourism is a driving element of economic development. It refers to the consumption of goods and services and is the source of income for the firms producing these goods and services. Increasing these needs has increased the need to produce goods and services, investments, production, and revenues (Dilber, 2007).

Economic conditions are an important factor in both supply and demand of facilities and services of tourism. On the supply side, a strong economy helps to support the resources available for investment in domestic and international tourism, such as transportation (Henderson, 2007). Therefore, the availability of capital is effective in the emergence and formation of tourism supply not only in travel but also in other interconnected industries such as textiles, construction, transportation, and the manufacturing of food and beverages. Regarding the cost of travel, the financial conditions of individuals play an important role in

tourism demand. In addition, seasonal factors and the structure of the economy, through products and prices, also affects the demand for tourism in countries.

According to the development level of each country, the goal that the tourism sector wants to achieve varies. While developed countries benefit from the income impact of the tourism sector, taking advantage of the sector's ability to create new employment areas is among the main objectives of developing or underdeveloped countries. For example, in Turkey, the tourism sector during the post-1980 period, has played a major role in closing current account deficits, reducing unemployment, and balancing the balance of payments during periods of crisis.

At the present time, the tourism sector constitutes a significant part of GDP for many countries. The success and performance of the tourism sector can affect many variables, particularly GDP and employment. The aim of this study is to test the validity of a tourism-based growth strategy using the ordinary least square regression method by sampling 181 countries over the period 1995-2018. My results show that for the whole sample, the estimation results fail to find a significant relationship between tourism and economic growth. On the other hand, increase in tourism specialization, measured as the ratio of tourism revenues to nominal GDP, positively impact per capita growth rate of countries which are highly dependent on tourism.

This thesis has been organized as follows. This section has provided an overview of this study. The next section describes tourism and its benefits for the economy. The third section describes the overview of the tourism sector in the world as well as domestic tourism. The fourth section summarizes the literature on this topic. The fifth section describes the data. Finally, the sixth section explains the model used in this study and discusses the empirical results. Then, the seventh section provides the conclusion, while the eighth section provides the appendix.

2. TOURISM AND ITS BENEFITS FOR THE ECONOMY

Tourism is one of the most important sectors in the economy in terms of the positive effect it has on GDP growth, foreign exchange inflow, balance of payments, investment opportunities, and new employment areas (Yıldırım, 2005). In addition, the tourism sector is linked to different sub-sectors consisting of different sized business lines. Furthermore, another aspect

of tourism for many developing countries is that it can bring economic benefits in a shorter time (Yildiz, 2011). Therefore, tourism can be one of the major service sectors in 21st century.

In almost all studies on the tourism sector, there seems to be a positive significant relationship between tourism and growth, especially in the long term (Akan et al., 2007). The share of tourism revenues in GDP is important in supporting further economic growth. One of the important benefits of the sector is its contribution to employment. Tourism within the services sector is a people-oriented sector and is perceived as a solution to the unemployment problem for many countries. Since mechanization and automation opportunities are limited in the tourism sector, the employment intensity created by the tourism sector is higher than other sectors. Due to the tourism sector receiving inputs from many sectors and giving inputs to many sectors, its impact on employment may also be higher. Tourism, which is a labor-intensive sector, for example in Turkey ranks second after the construction sector in terms of domestic employment (Kızılgöl & Erbaykal, 2008). About 6.8% of the total workforce is employed in the tourism sector in Turkey (T. C. Ministry of Economy, 2013). According to AKTOP (2014) data, employment in the tourism sector was 1 million 298 thousand dollars in 2013. 56% of the sector's employees are in the food and beverage services, 30% in the hospitality sector, 5.7% in travel agencies, 7% in entertainment and recreation services, and 1.2% in air transport.

External balance of payments is the basic financial statement showing foreign exchange inflows and outflows within a year. Therefore, foreign exchange, which is the input of tourism, is very effective in creating foreign exchange supply and demand. Tourism revenues therefore provide foreign exchange inflows to the country; thus, the strengthening of the tourism sector helps to stabilize the balance of payments dynamics (Kesgingöz & Karataş, 2016). Note that on the external finance, workers' remittances and external financing inputs do not always reach the desired levels. Therefore, tourism can provide significant foreign currency inflow to Turkey (Çımat & Bahar, 2003). In addition, tourism revenues also help to close the trade deficit.

Another impact of tourism is on public revenues. Businesses operating in the tourism sector are economic decision-making units that generate revenue by selling tourist goods and services. Due to the fact that tourism is a consumption generating activity, the expenditure income stream starts with the departure of the tourists from their places of residence, continues

during the whole travel and accommodation period, and ends when they return to their place of residence (Ünlüönen et al., 2015). It is argued that the effect of tourism on state revenues is through increasing income, increasing expenditures and therefore net income effect (Özdemir, 1992). It is known that tourism is a source of income for the state and is related to the tax techniques and laws in force (Yıldız, 2011). The state, in order to increase the income to be obtained from tourism infrastructure and superstructure expenditures and other government expenditures, shows the increasing effect of tourism on government expenditures (Özdemir, 1992).

3. OVERVIEW OF WORLD AND DOMESTIC TOURISM

Especially after World War II, in parallel to industrialization and increasing leisure times of households, the growth of the tourism sector accelerated. According to the World Tourism Organization, it has become the largest sector in the world for employment. In addition, the labor force created by the tourism sector and combined support sectors serves to add income and value added (Kandır, et al., 2008).

International tourism is an important component of the tourism sector. As of 2019, international tourism revenues reached approximately 2.5% of the GDP worldwide. With the development of the tourism sector, employment opportunities increase and, thus, the sector significantly reduces high unemployment rates. According to the World Travel and Tourism Council (WTTC, 2019), the tourism and travel sectors combined support one in ten jobs (330 million) worldwide, and generate 10.3% of global GDP.

When the tourism movements in the world are analyzed, it is seen that these movements tend to increase continuously. According to World Bank statistics, tourism income (international tourism receipts), which was around 562 billion dollars in 2000, increased to approximately 1.65 trillion dollars in 2018. A similar situation is observed in the number of tourists. The number of tourists, which was around 696 million in 2000, reached 952 million in 2010 and approached 1,4 billion in 2019 (UNWTO, 2019). If we look at the regional concentration of world tourists, Europe is the center of world tourism. About 51% of the world's tourist population is located in the European region. Europe is followed by the Asia/Pacific region with 25%. America ranks third with a share of 15%. The share of the Middle East and Africa in world tourists was around 4% and 5%, respectively in 2019 (UNWTO, 2019).

Turkish tourism followed the trend of rapid growth in the global tourism sector. Turkish tourism in the period after 1980, was the major source for economic development and, for this purpose, it has allocated a significant portion of economic resources in the development of this sector. Tourism revenues are the second largest foreign currency source after exports in the balance of payments. Turkey, rather than following import substitution types of policies after the economic decisions taken in 1980, focused on export promotion policies and the tourism sector (Kandır, et al. 2008). Since then, the tourism sector has started to play an important role in growth dynamics and in contributing to the closure of the trade deficit. The rise of the share of tourism in the national income, the transformation into the priority employment area in the service sector, and the positive contribution to the balance of payments and attracting the foreign capital clearly show the importance of the sector. The tourism sector in Turkey has been influenced by fluctuations in recent years due to instability driven by political conflicts. However, in spite of the problems faced during these periods, it has made progress and has entered into a process of structural change.

To talk about the importance of the tourism sector and the share of the sector in the development of a country is possible by measuring the economic effects of tourism.

Table 3.1: Tourism Income and Trade Deficit Values of Turkey (1970-2019)

Years	Total number of tourists	Tourism income (million \$)	Tourism income / GDP (%)	Tourism income / Export income (%)	Tourism share in closing the foreign trade deficit (%)
1970	724784	51.6	0.5	8.8	1.1
1980	1288060	326.7	0.6	11.2	6.5
1990	5389308	3225	2.1	24.9	28.6
1995	7726886	4957	3	22.9	30.8
2000	10428153	7636	3.8	27.8	27
2005	20522621	18152	4.1	24.7	55.72
2010	28510852	20806	3.2	18.2	46.06
2011	31324528	28116	3.6	20.8	34.13
2012	31782832	29007	3.3	19.2	43.75
2013	34910098	32309	3.9	21.3	32.34
2014	36837900	34306	3.7	21.8	40.59
2015	36244632	31465	6.2	21.9	49.73
2016	25352213	22107	2.6	15.5	39.48
2017	32410034	26284	3.4	18.2	42.62

Table 3.1 (continued):

Years	Total number of tourists	Tourism income (million \$)	Tourism income / GDP (%)	Tourism income / Export income (%)	Tourism share in closing the foreign trade deficit (%)
2018	39588401	29513	3.9	17.5	54.66
2019	45058286	34520	-	20	117.11

Sources: Republic of Turkey, Ministry of Culture and Tourism, TURSAB

Main macro-economic indicators related to the tourism sector in Turkey are examined in Table 3.1. Over the years, the tourism income has increased, peaking in 2012. Tourism has a share of 3-6% in the GDP and its share in the GDP was at its highest in 2015. Its share in export revenues is between 10-30% and reached its highest share in export revenues in 2000. Its share in closing the foreign trade deficit seems to be in the range of 40-50% and reached its highest level in 2005. When the total number of tourists visiting the country is analyzed, it is observed that there is a continuous increase over the years.

Tourism revenues, which were 51.6 million USD in 1970, increased by 6.5 times to 326.7 million USD in 1980 and reached 29 billion USD in 2018. Similarly, the ratio of tourism revenues to GDP increased from 0.6% in 1980 to 3.9% in 2018. One of the most important benefits tourism provides Turkey is the input of foreign currency. This is because the deficit in our country's foreign payments balance has been an important problem for many years. In 2018, the tourism sector, with a share of 54.6% of foreign trade, has contributed to closing the foreign trade deficit in Turkey's economy. When we examine the period between 2014 and 2018, we can see a decrease in 2016. The most obvious reason for this decrease is due to politics. The downing of the Russian aircraft and the coup attempt in July 2016 are clear examples. However, after 2016, there was a steady increase and the maximum tourism revenues, which were seen in 2014, were reached again in 2018 with the share of tourism in exports reaching 17.5% in 2018.



Figure 3.1: Comparison of tourism growth and GDP (World Bank, 2018).

To observe these effects, we first investigate the growth of tourism and GDP for the period 1990-2018. The unstable expansion and contraction of the economy depicted in Figure 3.1 caused real GDP per capita to change (see Figure 3.2). Accordingly, the average per capita income, which was 6 thousand dollars in 1990, increased until 2007 and reached up to 10 thousand dollars. However, per capita income declined again in the country, which was seriously affected by the global crisis, in 2009. As a matter of fact, the national income per capita in 2016 and 2017 was determined as approximately 15 thousand dollars. Based on these numbers, Turkey has taken its place among the upper middle-income countries in the world. Compared with developed countries and other developing countries, it is observed that the growth and the level of per capita income in Turkey is very low. However, when tourism growth is observed in relation with GDP (Figure 3.1), we see that when GDP drops so does tourism growth. At a quick glance, this shows some level of positive correlation.

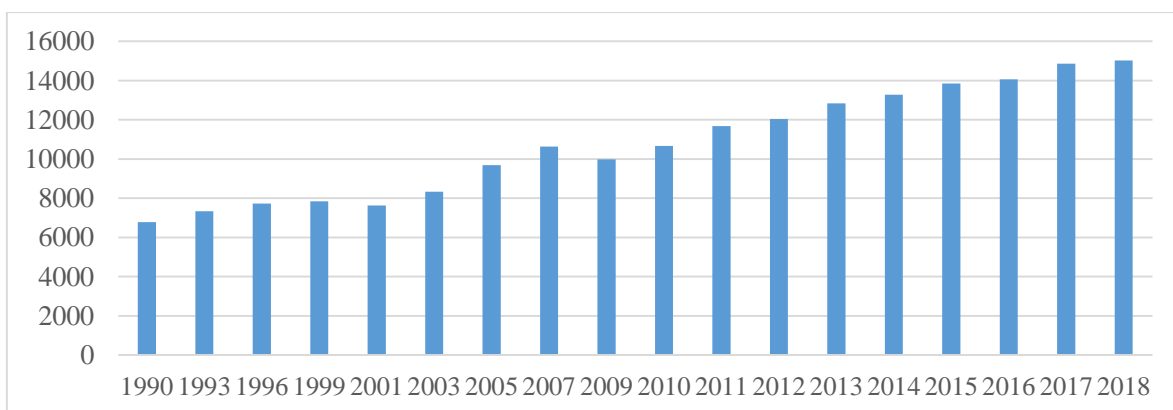


Figure 3.2: Turkey's per capita GDP in thousand \$ (World Bank, 2019).

It is also observed that the growth in tourism sector is more volatile than the growth of GDP, such that the tourism sector experiences higher peaks in good times and sharper decreases in

bad economic situations. During the period under review, except for 1999, 2001, 2009, 2015 and 2016, the tourism sector has grown continuously. Even after the 2009 global crisis, in which the country's GDP shrank by 4.7%, the tourism sector showed positive growth. As a matter of fact, it is possible to say that the tourism sector is a key sector in helping the country's economy to emerge from this distressed period. One of the main reasons for this contribution is the depreciation of domestic currency (Kum et. al., 2015).

Table 3.2 shows certificates given to tourism sector. Tourism investment incentives have generally remained stable between 1998 and 2018. However, some time periods clearly emerge in tourism investments. This was especially true during the global economic crisis of 2007-2008. During this time, the demand for the number of tourism certificates was 3%, increasing to 6% in 2009. Moreover, when we look at the percentages of investment incentive certificates during the same periods, they increased from 2.43% to 7.64%.

Table 3.2: Investment Incentive Certificates

Years	Number of Certificates			Amount of Investment Incentive Certificates		
	Tourism	Total	%	Tourism Current (1000 TL)	Total Current (1000 TL)	%
1998	244	4291	5.69	213,240	4,100,777	5.2
1999	199	2967	6.71	298,772	4,664,362	6.41
2000	153	3521	4.35	323,331	8,761,378	3.69
2001	132	2051	6.44	989,000	12,368,000	8
2002	148	2652	5.58	828,000	11,631,000	7.12
2003	195	3171	6.15	1,767,000	11,672,000	15.14
2004	137	3457	3.96	1,125,000	15,945,000	7.06
2005	153	3542	4.32	1,883,000	16,039,000	11.74
2006	92	2475	3.72	714,000	13,298,000	5.37
2007	68	2239	3.04	482,000	19,942,000	2.42
2008	74	2442	3.03	507,000	20,834,000	2.43
2009	127	2075	6.12	1,795,000	23,480,000	7.64
2010	313	3605	8.68	6,167,000	67,829,000	9.09
2011	272	3996	6.81	3,574,000	49,937,000	7.16
2012	320	4056	7.89	4,708,000	61,735,000	7.63
2013	455	4746	9.59	6,010,000	96,802,000	6.21
2014	439	3990	11	6,973,000	64,646,000	10.79
2015	379	4564	8.3	5,588,000	102,157,000	5.47
2016	297	5115	5.81	4,484,000	98,099,000	4.57
2017	320	7478	4.28	5,719,000	177,899,000	3.21
2018	270	5914	4.57	5,019,000	157,296,000	3.19

Source: Republic of Turkey, Ministry of Industry and Technology

Table 3.3 present the composition of tourism revenue with respect to domestic and foreign visitors.

If we look at the values, we can see clearly that tourism receipts from foreign visitors is at 70%-80% of total tourism revenue between 2008-2018.

Table 3.3: Tourism Receipts by Sources

Years	Toursim Receipts from Foreign Visitors (US\$ 1000)	Share %	From Turkish Citizens Residing Abroad (US\$ 1000)	Share %	GSM+Marina Service Expenditures (US\$ 1000)	Share %	Toatal of Tourism Receipts (US\$ 1000)	Share %
2008	19,612,296	77.17	5,418,439	21.32	384,332	1.51	25,415,067	100.00
2009	19,063,702	76.06	5,690,629	22.70	310,150	1.24	25,064,481	100.00
2010	19,110,003	76.65	5,558,366	22.30	262,627	1.05	24,930,996	100.00
2011	22,222,454	79.04	5,638,484	20.05	254,753	0.91	28,115,691	100.00
2012	22,410,364	77.26	6,354,378	21.91	242,261	0.84	29,007,003	100.00
2013	25,322,291	78.38	6,760,180	20.92	226,519	0.70	32,308,990	100.00
2014	27,778,026	80.97	6,289,260	18.33	238,617	0.70	34,305,903	100.00
2015	25,438,923	80.85	5,843,074	18.57	182,780	0.58	31,464,777	100.00
2016	15,991,381	72.33	5,964,853	26.98	151,206	0.68	22,107,440	100.00
2017	20,222,971	76.94	5,908,752	22.48	151,933	0.58	26,283,656	100.00
2018	24,028,311	81.42	5,345,472	18.11	139,142	0.47	29,512,925	100.00

Source: Turkish Statistical Institute (Turkstat), Republic of Turkey, Ministry of Culture and Tourism

When we look at the number of visitors and tourism revenues between 1998-2018, there is a regular increase except during four periods as depicted in Table 3.4. The number, which was 9,752,697 in 1998, reached 39,488,401 in 2018. The biggest decreases occurred in 1999 and 2016. It is likely that this happened because in 1999 there was the Istanbul earthquake, and 2016 there were political problems such as the downing of the Russian plane and the coup attempt. These led to a big decrease compared to the previous years, 23% in 1999 and 30% in 2016. When we look at tourism revenues, they were \$7.1 million in 1998, compared to \$29.5 million in 2018. The year Turkey earned the highest income was 2014 with an income of \$34.3 million.

Table 3.4: Distribution of Foreign Arrivals and Tourism Receipts by Years

Years	Foreign Arrivals	Annual Change (%)	Tourism Receipts (US\$ million)	Annual Change (%)
1998	9,752,697	0.7	7,177	2.5
1999	7,487,285	-23.23	5,203	-27.5
2000	10,428,153	39.28	7,636	46.76
2001	11,618,969	11.42	10,450	36.85
2002	13,256,028	14.09	12,420	18.85
2003	13,701,419	3.36	13,854	11.55
2004	17,202,996	25.56	17,076	23.26
2005	20,522,621	19.3	20,322	19.01
2006	19,275,948	-6.07	18,593	-8.51
2007	23,017,081	19.41	20,942	12.63
2008	26,431,124	14.83	25,415	21.36
2009	27,347,977	3.47	25,064	-1.38
2010	28,510,852	4.25	24,930	-0.53
2011	31,324,528	9.87	28,116	12.78
2012	31,782,832	1.46	29,007	3.17
2013	34,910,098	9.84	32,309	11.38
2014	36,837,900	5.52	34,306	6.18
2015	36,244,632	-1.61	31,465	-8.28
2016	25,352,213	-30.05	22,107	-29.74
2017	32,410,034	27.84	26,284	18.89
2018	39,488,401	21.84	29,513	12.29

Source: Republic of Turkey, Ministry of Culture and Tourism

When we compare tourism revenues and expenditures between 2008-2018, we can interpret these rates in reverse proportion due to the change in the exchange rates during those times. Despite the increase in tourism revenues, per capita expenditure decreased.

Table 3.5: Tourism Receipts per Person

Years	Foreigners			Turkish Citizens Residing Abroad			Total		
	Number of Foreigners	Tourism Receipts (US\$ 1000)	Average Expenditure per Person (US\$)	Number of Citizens	Tourism Receipts (US\$ 1000)	Average Expenditure per Person (US\$)	Number of Visitors	Tourism Receipts (US\$ 1000)	Average Expenditure per Person (US\$)
2008	26,431,124	19,612,296	742	4,548,855	5,418,439	1191	31,137,774	25,415,067	820
2009	27,347,977	19,063,702	697	4,658,172	5,690,629	1222	31,759,816	25,064,482	783
2010	28,510,852	19,110,003	670	4,517,091	5,558,366	1231	32,997,308	24,930,997	755
2011	31,324,528	22,222,454	709	4,826,800	5,638,484	1168	36,769,039	28,115,692	778
2012	31,782,832	22,410,364	715	5,121,457	6,354,378	1241	37,715,225	29,007,003	795
2013	34,910,098	25,322,291	749	5,398,752	6,760,180	1252	39,860,771	32,308,991	824
2014	36,837,900	27,778,026	775	5,564,784	6,289,260	1130	41,627,246	34,305,903	828
2015	36,244,632	25,438,923	715	6,025,370	5,843,074	970	41,114,069	31,464,777	756
2016	25,352,213	15,991,381	633	6,099,924	5,964,853	978	30,906,680	22,107,440	705
2017	32,410,034	20,222,971	630	6,540,819	5,908,752	903	37,969,824	26,283,656	681
2018	39,488,401	24,028,311	617	6,624,191	5,345,472	801	46,112,592	29,512,926	647

Source: Turkish Statistical Institute (Turkstat)

There are values of tourism and average per capita expenditure in table 3.6. Tourism spending between 2003-2019 sustains indirect proportion with the number of incoming tourists. However, it is observed that the spending per capita is decreasing due to the change of exchange rates.

Table 3.6: Tourism Expenditures (2003-2019)

Years	Tourism Expenditure (1000\$)	Number of Citizens	Average Expenditure (\$)
2003	2,424,827	3,414,844	710
2004	2,954,459	3,844,494	768
2005	3,394,602	4,124,829	823
2006	3,270,947	4,063,180	805
2007	4,043,283	4,956,069	816
2008	4,266,197	4,892,717	872
2009	5,090,440	5,561,355	915
2010	5,874,520	6,557,233	896
2011	5,531,486	6,281,972	881
2012	4,593,390	5,802,950	792
2013	5,253,565	7,525,869	698
2014	5,470,481	7,982,264	685
2015	5,968,423	8,750,851	651
2016	5,049,793	8,062,065	640
2017	5,137,244	8,886,916	578
2018	4,896,310	8,383,432	584
2019	4,403,670	9,650,512	456

Source: TURSAB

4. LITERATURE REVIEW

In many developing countries, the main source of growth and economic development is the export-led development strategy. In particular, after 1960, many underdeveloped and developing countries started to encourage export by changing import substitution policies and preferred export-oriented growth as economic policy. As a development strategy, it is possible to say that the theoretical basis that tourism will cause economic growth stems from the literature on export and economic growth (Sr & Croes, 2003).

As a matter of fact, export led development strategy in tourism covers international services section of the current account of the balance of payment statistics. Therefore, tourism expenditures made by foreign tourists in another country have an export effect in terms of the foreign exchange income provided to that country, just as in the export of goods. In other words, tourism is an invisible export item (Theobald, 2013). All kinds of income from tourism and all kinds of products and services sold to tourists are accepted as additional export revenue. As the number of tourists visiting a country increases, so does the demand for products and services provided in the host country. If the destination country has the resources to meet increasing production in parallel with rising demand, all expenditures of the tourists will remain in that country. If the country's touristic foreign exchange gains are more than foreign exchange losses, tourism will contribute positively to the balance of payments. Therefore, as in the export-oriented growth hypothesis, the tourism-oriented growth hypothesis accepts that tourism may cause economic growth in the long term (Balaguer & Cantavella-Jordá, 2002; Croes, 2006). In parallel to the development of exports in a country's economy, economies of scale are utilized, foreign exchange constraints are reduced, and foreign exchange shortages are alleviated. In addition to this, positive externalities are provided in non-traded sectors, resources are used effectively and efficiently in order to gain competitiveness, and investments in traditional sectors are revitalized (McKinnon, 1964; Durbarry, 2004).

There are many studies investigating the link between tourism revenues and economic growth. These studies are conducted at both sectoral and country level. Amongst these studies, Aratuo & Etienne (2019) find that there is no long-term relationship between four branches in tourism (entertainment and recreation, air transportation, other transportation, and shopping) and economic growth; however, the accommodation and food and beverage (F&B) sector had a long-term relationship in the USA from 1998 to 2017. Therefore, Aratuo & Etienne (2019) suggested one-way Granger causality about to each of sub-sector in economic growth. However, food and beverage, entertainment, and shopping show a predominant causality between the tourism sectors. Therefore, the USA should investment in food and beverages, entertainment, and shopping. Amongst other studies, Aratuo and Etienne (2019) investigate the relationship between economic growth and six tourism-related sub-industries (accommodation, air transportation, shopping, food and beverage, other transportation, and recreation and entertainment) in the United States between 1998

and 2017. They find that there is no long-term relationship between four branches in tourism (entertainment and recreation, air transportation, other transportation and shopping) and economic growth; however, they find that the accommodation and food and beverage (F&B) sectors have a long-term relationship in the USA. On the other hand, in the short run they stressed that, tourism sectors could take advantage of economic growth. As a policy recommendation they emphasized that food, shopping, and leisure sectors are the main sectors in which tourism-related investment and marketing efforts should be directed.

The empirical study of Modeste (1995) shows that tourism in selected Caribbean countries improves economic growth but that growth in the tourism sector also leads to a contraction in the growth in the agricultural sector. In addition, Yazdi et al. (2017) analyze the long-term and short-term relationships between tourism and economic growth in Iran based on autoregressive distributed lag and the error correction model covering the period 1985 to 2013. They document that there is a positive relationship between tourism expenditure and economic growth in both the long and the short run. Moreover, the results of the Granger causality test present a bidirectional causality between tourism expenditure and economic growth. Balaguer & Cantavella-Jordá (2002) also examined the role of tourism in Spain's long-term economic development. According to the empirical results, there is a long-term relationship between tourism revenues and economic growth, thus, tourism affects economic growth positively. Gökovalı & Bahar's (2006) study, which covers 19 tourism countries in the Mediterranean Region, using the panel data approach, revealed that tourism contributes positively to economic growth. Furthermore, Husein & Kara (2011) investigate the causal relationships among tourism receipts, real exchange rate and economic growth for the period 1964 to 2004. The findings of the study document a significant long-run equilibrium relationship among real GDP, tourism receipts, and the real exchange rate while Granger causality tests indicate a unidirectional causality from tourism receipts to real GDP.

In the econometric model created by Durbarry (2004) for Mauritius, it is seen that tourism has a positive effect on economic growth and tourism plays a very important contribution in the economic development of Mauritius. In another study conducted for 21 Latin American countries using the panel data approach, it has been reported that tourism has a positive impact on the economic growth of low and middle income countries (Eugenio-Martin et al., 2011).

There are also several studies investigating the impact of economic and political factors on tourism. Among these, Simas-Rodrigues et al. (2015) examine the relationship between tourism demand and macroeconomic variables for the period 1995 to 2012 across 218 countries. Demand for tourism is measured by the population of incoming visitors and by expenditures. The main macroeconomic indicators are domestic prices, per capita GDP, and exchange rates. The study shows that an increase of world GDP per capita results in a decline of domestic prices and, consequently, a depreciation of currency which positively affect the number of arrivals and expenditure levels. In addition, Kulendran & Wilson (2000) in Australia and Shan & Wilson (2001) for China, document that there is a strong relationship between international tourism and international trade. On the other hand, in a study covering the Turkish economy Dincer et. al. (2015) test the relationship between real exchange rates, tourism expenditures, tourism revenues, and the number of foreign tourists in the country. Their findings indicate there is no long-term relationship between REER and tourism revenues. This is explained by other factors that may shape tourists' decisions rather than solely the economic conditions in the country. Furthermore, Drakos & Kutan (2003) using data for Greece, Israel, and Turkey show significant negative effects due to terrorism on market shares in the tourism sector.

When I look at the few studies on the subject in the literature, it is observed that some studies have different results. For example, Hazari & A-Ng's (1993) research indicates that tourism under a monopolistic power reduces economic prosperity (Hazari & A-Ng, 1993). However, in a subsequent paper Hazari & Sgro (1995), using a dynamic model, investigate the relationship between growth, tourism, capital accumulation, consumption per capita, and terms of trade. The findings show that tourism has a positive effect on the long-term growth of a small country.

5. DATA

My data come from the database of the World Bank. Specifically, I use various series from World Bank Development Indicators. During the data collection, I did not take into consideration years and countries for which I did not have any data. Our dependent variable is the percentage growth of real per capita GDP. Our independent variables are period start

per capita, tourism specialization, openness, human capital, public expenditure, and investment.

The period start per capita GDP is the GDP per capita in the year 1995. Tourism specialization is a proxy for tourism activities and has been calculated by dividing tourism receipts to nominal GDP. Openness reflects information about the trade volume (export + import) and shows the international economic activity. I calculate this by dividing trade volume to nominal GDP. As a determinant for human capital I have used government expenditure on education as a percentage of nominal GDP. Public expenditure is proxied by general government final consumption expenditure as a percentage of GDP. We calculate public expenditures in percentages by dividing it into nominal GDP. Investment is equal to the gross fixed capital formation as a percentage of nominal GDP.

The period of the study spans from 1995 to 2018 and covers 181 countries. The frequency of our data is annual. Descriptive statistics on the main variables are presented in Table 5.1.

Table 5.1: Descriptive Statistics of All Countries (1995-2018)

Stats	Growth Rate of Real per Capita Income	Openness to Trade	Tourism Country 20%	Tourism Country 10%	Tourism Revenue	Public Expenditure	Investment	Human Capital
mean	2.44	87.56	6.43	15.75	6.49	16.04	22.48	4.51
sd	5.22	51.96	24.53	36.43	10.05	6.41	7.32	1.74
min	-36.20	0.17	0.00	0.00	0.00	0.91	2.00	0.79
max	140.37	442.62	100.00	100.00	84.87	69.54	68.02	14.54
N	4119	4001	3904	3904	3904	3728	3677	2297

Source: World Bank Development Indicators

Values are denoted in percentage forms. When we look at the average growth rate of per capita income, it indicates a growth of 2.44%. For openness, the average value is 87.56%, meaning that this shows the relation with foreign countries is a lot on average and this contact is expected to have a positive effect on tourism. Public expenditure as a percentage of GDP appears to be 16.04%, investments as a percentage of GDP is 22.48%, and human capital investment as a percentage of GDP is 4.51% on average. The ratio of tourism revenue in GDP appears to be, on average, 6.49%. However, when we look at the minimum and maximum values for tourism revenues, these are approximately 0.00% and 84.87% respectively. These variables show substantial variations across countries. These two countries are the Democratic Republic of the Congo (minimum) and Macao (maximum). I have also constructed several dummy variables, such as the top 20 percent and top 10 percent, to identify tourism intensive countries for which tourism is the main source of income. Tourism country 20 is a dummy variable which is equal to one for countries whose tourism revenues as a percentage of their GDP is more than 20% during the period of our study. This dummy variable is equal to 0 for countries whose tourism revenue as a percentage of GDP is lower than 20%. Similarly, we have defined a dummy variable for countries whose tourism revenues as a percentage of their GDP is more than 10% during the period of our study.

Table 5.2: Descriptive Statistics of Countries with GDP over 20%

20%	Stats	Growth Rate of Real per Capita Income	Initial Level of per Capita Income	Openness to Trade	Tourism Country 20%	Tourism Country 10%	Tourism Revenue	Public Expenditure	Investment	Human Capital
0	mean	2.49	818.07	86.05	0.00	9.96	4.46	16.04	22.47	4.53
	sd	4.82	151.62	52.80	0.00	29.96	4.92	6.25	7.12	1.74
	min	-36.20	515.69	0.17	0.00	0.00	0.00	0.91	2.00	0.79
	max	140.37	1122.23	442.62	0.00	100.00	41.26	69.54	68.02	14.54
	N	3503	3653	3479	3653	3653	3653	3278	3269	2088
1	mean	1.64	910.07	114.88	100.00	100.00	36.01	17.96	22.91	4.76
	sd	5.23	80.96	34.22	0.00	0.00	16.98	7.96	7.38	1.54
	min	-23.14	787.34	56.31	100.00	100.00	10.21	6.50	9.27	2.03
	max	23.68	1020.43	225.02	100.00	100.00	84.87	47.19	41.49	10.24
	N	240	251	213	251	251	251	157	115	126
Total	mean	2.43	823.98	87.72	6.43	15.75	6.49	16.13	22.48	4.54
	sd	4.85	149.80	52.34	24.53	36.43	10.05	6.35	7.12	1.73
	min	-36.20	515.69	0.17	0.00	0.00	0.00	0.91	2.00	0.79
	max	140.37	1122.23	442.62	100.00	100.00	84.87	69.54	68.02	14.54
	N	3743	3904	3692	3904	3904	3904	3435	3384	2214

Source: World Bank Development Indicators

Table 5.2 shows descriptive statistics for countries that substantially rely on tourism. We categorize these countries using our dummy variable (Tourism country 20). There are 11 countries in this segment. In this table, the area labeled “1” refers to the countries that are in the 20% segment and “0” marks the countries which are not in the 20%. When we look at tourism revenues as a percentage of GDP, the rate is 36.01% in countries that are in the 20% segment and 4.46% for the other part. When we look at the average of the countries in the 20 percent segment for the growth rate of per capita income, is about 1.64%, while the rate for the other countries is around 2.49%. For openness, it shows that for countries in the 20% segment, it is about 114.88%, and 86.05% for the other countries. This shows us that the amount of imports and exports is important for tourism countries. Finally, when we look at public expenditure, it appears as 17.96% in the 20 percent segment and 16.04% in the other part; thus, showing that there are no substantial differences. When we also look at the investment and human capital values, both tourism country 20 and other countries are doing investment about 22.91% and 22.47 respectively. However, these countries do not invest in human capital rough for 4.76% and 4.53%.

Table 5.3: Descriptive Statistics of Countries with GDP over 10%

10%	Stats	Growth Rate of Real per Capita Income	Initial Level of per Capita Income	Openness to Trade	Tourism Country 20%	Tourism Country 10%	Tourism Revenue	Public Expenditure	Investment	Human Capital
0	Mean	2.50	815.00	83.70	0.00	0.00	3.19	16.12	22.45	4.53
	Sd	4.94	154.81	52.86	0.00	0.00	2.68	6.37	7.19	1.75
	Min	-36.20	515.69	0.17	0.00	0.00	0.00	0.91	2.00	0.79
	Max	140.37	1122.23	442.62	0.00	0.00	19.70	69.54	68.02	14.54
	N	3155	3289	3137	3289	3289	3289	3027	3021	1898
1	Mean	2.07	872.02	110.44	40.81	100.00	24.13	16.25	22.80	4.59
	Sd	4.38	107.51	42.74	49.19	0.00	15.29	6.21	6.50	1.62
	Min	-23.14	583.45	44.90	0.00	100.00	1.51	3.46	5.54	1.26
	Max	23.68	1109.27	325.78	100.00	100.00	84.87	47.19	46.73	10.24
	N	588	615	555	615	615	615	408	363	316
Total	Mean	2.43	823.98	87.72	6.43	15.75	6.49	16.13	22.48	4.54
	Sd	4.85	149.80	52.34	24.53	36.43	10.05	6.35	7.12	1.73
	Min	-36.20	515.69	0.17	0.00	0.00	0.00	0.91	2.00	0.79
	Max	140.37	1122.23	442.62	100.00	100.00	84.87	69.54	68.02	14.54
	N	3743	3904	3692	3904	3904	3904	3435	3384	2214

Source: World Bank Development Indicators

Table 5.3 provides descriptive statistics for countries whose tourism revenue is less than and more than 10% of their nominal GDPs within the 10% segment. There are 27 countries in this segment. When we look at tourism revenues as a percentage, we can see that this rate is 24.13% in countries in the 10% segment, while it is 3.19% for the other countries. In this table, countries which are in the 10% segment are labeled as "1", and the other countries are labelled "0". When we look at the average of the countries in the 10 percent segment, the growth rate of per capita income is on average 2.07%, while this growth rate is around 2.5% for the countries outside the 10% segment. When we look for openness, it shows that it is about 110.44% for countries in the 10% segment and 83.70% for the other group. This situation confirms that the amount of imports and exports is important for the tourism countries, similar to what is shown in Table 5.2. Finally, when we look at public expenditure, investment, and human capital proxies, we see no substantial variation across the countries in the two categories.

Table 5.4: Countries with GDP over 20%

Country	Freq.	Percent	Cum.
Antigua and Barbuda	23	9.16	9.16
Aruba	23	9.16	18.33
Bahamas, The	23	9.16	27.49
Barbados	23	9.16	36.65
Fiji	23	9.16	45.82
Grenada	23	9.16	54.98
Macao SAR, China	23	9.16	64.14
Maldives	23	9.16	73.31
Seychelles	23	9.16	82.47
St. Lucia	23	9.16	91.63
Vanuatu	21	8.37	100
Total	251	100	

Source: World Bank Development Indicators

When we look at these 11 countries in the 20% segment, the common feature of these countries is that they are all small islands except Macao SAR. This shows that the only income of these countries is tourism-based, due to the countries' geography, tropical climate, general climate conditions, and the tourism activities of the travelers.

Table 5.5: Descriptive Statistics of Turkey

Stats	Growth Rate of Real per Capita Income	Initial Level of per Capita Income	Openness to Trade	Tourism Country 20%	Tourism Country 10%	Tourism Revenue	Public Expenditure	Investment	Human Capital
mean	3.27	889.77	48.28	0.00	0.00	3.62	13.24	25.58	2.71
sd	4.42	0.00	4.89	0.00	0.00	0.71	1.30	3.56	0.24
min	-7.36	889.77	37.40	0.00	0.00	2.03	10.62	18.07	2.25
max	9.42	889.77	60.40	0.00	0.00	5.03	15.77	30.00	3.02
N	23	24	24	23	23	23	24	24	8

Source: World Bank Development Indicators

Table 5.5 shows the data for Turkey. When we look at the growth rate of per capita income, we can see the value of 3.27%. When we compare this situation with the countries that are in the 20% and 10% segments, this rate is high. Therefore, these results show that there are factors apart from the tourism industry that are affecting Turkey's economic growth. It has a 48.28% rate for openness. Turkey is not a part of these 20% and 10% segments. Tourism revenue as a percentage of GDP is around 3.62%. The public expenditure rate is 13.24%; this is lower than the sample average of 16.04%. Finally, when we look at investment and human capital, while investment is 25.58%, which is higher than sample average of 22.48%, human capital is 2.71%, which is lower than sample average of 4.51. These rates show that Turkey is doing investment but Turkey is not investing in human capital.

6. MODEL AND EMPIRICAL RESULTS

In order to test tourism's impact on economic growth, we estimate the following econometric specification following Figini et al. (2009):

$$\text{Growth}_{it} = \beta_0 + \beta_1 \text{Tourism}_{it} + \beta_2 X_{it} + \varepsilon_{it}$$

where growth is our dependent variable and stands for the percentage growth of per capita GDP for country i , in year t , tourism represents the ratio of tourism receipts to nominal GDP (tourism specialization), and X is a set of control variables including initial level of per capita GDP, openness, human capital, public expenditure, as well as investment as a share of nominal GDP. The World Bank is the main data source that we use to collect our data, in particular, utilizing numerous series from World Bank Development Indicators (WB WDI).

The initial level of per capita GDP is the GDP per capita in the year 1995. I use this variable to account for convergence hypothesis stemming from the Solow model, which states that per capita incomes of poorer economies are more likely to grow at a faster rate compared to richer economies. Therefore, the growth rate of developed countries is not as fast as developing and undeveloped countries. This hypothesis further claims that there will be a convergence between all types of economies with regards to their per capita income. Openness has been measured by dividing trade volume (export + import) to nominal GDP and indicates global economic activity and internationalism. Trade openness also aims to control the export-led hypothesis Government disbursement on education as a percentage of

nominal GDP, and has been used as the determining factor for human capital. Public expenditure has been assigned as a percentage of GDP with the help of the general government final consumption disbursement. Public expenditures are also calculated in percentages, measured as a fraction of nominal GDP. These proxies account for investment in human and physical capital and are considered the main determinants of technological progress in human capital models (Lucas, 1988).



Table 6.1: Empirical Results

Variables	Growth Rate of Real per Capita Income (1)	Growth Rate of Real per Capita Income (2)	Growth Rate of Real per Capita Income (3)	Growth Rate of Real per Capita Income (4)	Growth Rate of Real per Capita Income (5)	Growth Rate of Real per Capita Income (6)	Growth Rate of Real per Capita Income (7)	Growth Rate of Real per Capita Income (8)	Growth Rate of Real per Capita Income (9)
initial	-0.00459*** (0.000532)	-0.00632 (0.00428)	-0.00811*** (0.00172)	-0.00501*** (0.000468)	-0.00711 (0.00491)	-0.0114*** (0.00191)	-0.00278*** (0.000626)	-0.0113 (0.0208)	-0.00428 (0.00357)
tourism revenue GDP	0.00681 (0.00792)	0.0648*** (0.0201)	0.0263** (0.0120)	0.00210 (0.00709)	0.0831*** (0.0260)	0.0353*** (0.0132)	0.0170 (0.0105)	0.0829 (0.0712)	0.0483** (0.0233)
openness				0.00701*** (0.00137)	-0.00620 (0.0130)	0.0111** (0.00454)	0.00626*** (0.00163)	0.0288 (0.0484)	0.0207*** (0.00693)
human expenditure GDP							-0.0968 (0.0674)	-0.561 (1.171)	-0.522** (0.240)
public expenditure GDP							-0.0449** (0.0202)	-0.0902 (0.181)	-0.169** (0.0720)
investment GDP							0.123*** (0.0127)	0.00205 (0.124)	0.124** (0.0490)
constant	0.0617*** (0.00440)	0.0505 (0.0377)	0.0850*** (0.0146)	0.0588*** (0.00373)	0.0584 (0.0459)	0.0985*** (0.0158)	0.0262*** (0.00549)	0.103 (0.258)	0.0471 (0.0317)
observations	3,743	240	588	3,544	204	532	1,969	59	203
R-squared	0.020	0.043	0.038	0.033	0.061	0.070	0.086	0.162	0.186
	Total	20	10	Total	20	10	Total	20	10

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: World Bank Development Indicators

The results of our baseline estimation were presented in Table 6.1 (columns 1, 4, and 7). Positive and significant coefficients for tourism specialization (as measured by tourism revenue as a percentage of GDP) indicate that tourism has a positive impact on growth. The first column is the baseline model where we only have initial GDP and tourism revenue as a percentage of GDP as independent variables. I test different specifications for baseline estimation. To give an example, I added initial GDP, tourism revenue and openness as a percentage of GDP as independent variables and also added all variables and tested our baseline estimation. In column 4, I add openness as an additional independent variable, and in column 7 I add all the independent variables (human capital, public expenditure and investment as a percentage of GDP) as additional independent variables. In all regressions, the coefficient of tourism specialization appears positive in parallel to the tourism-led growth hypothesis; however, it is not significant. In column 7, the coefficient of human capital and public expenditure as a percentage of GDP is negative and significant for only one specification (column 9), thus implying that education has a negative impact on economic growth. This is not in line with my expectations. Conversely, the coefficient of investment as a percentage of GDP is positive; this is in line with my expectations. As depicted in column 8, the observation number drops significantly when we include all explanatory variables. The missing values are mostly seen in developing countries, which, in my opinion, may create biased estimators. Openness is positive, indicating that the higher the trade volume as a percentage of GDP, the higher the growth rate of the real per capita GDP, thus supporting the export-led growth hypothesis.

Following this, considering the degree of tourism specialization, I have created dummy variables by defining “tourism countries” as countries which have a tourism revenue as a percentage of GDP that is greater than or equal to 10% (or 20% in a different arrangement) throughout the period. For the next step, I divide the sample using the dummy variables that I constructed.

The first sample that I test is the countries that have tourism revenues as a percentage of their GDP is higher than 20% (column 2, 5, 8). The results in column 2 show that the coefficient of tourism revenue as a percentage of GDP appears as positive and significant; this is in parallel to our expectations. It seems that the tourism-led growth hypothesis is more apparent in the countries where the share of tourism in their GDP is higher. In column 5, we add openness as an additional independent variable and in column 8, I add all the independent variables (human capital, public expenditure and investment as a percentage of GDP) as an additional

independent variable. In all regressions, the coefficient of tourism revenue as percentage of GDP appears positive, which is in parallel to the tourism-led growth hypothesis; however, these are not significant. Openness appears as positive, indicating that the higher the trade volume as a percentage of GDP, the higher the growth rate of the real per capita GDP. In addition, the coefficient of investment as a percentage of GDP appears as positive, which is in line with our expectations. The coefficient of public expenditure and human capital appear as insignificant and negative in column 8; this is contrary to my expectations.

The second sample that I test is the countries that have tourism revenues as a percentage of their GDP that are higher than 10% (column 3, 6, 9). The results show that in all specifications, the coefficient of tourism revenue as a percentage of GDP appears as positive and significant; this is in parallel to our expectations. Openness appears as positive, indicating that the higher the trade volume as a percentage of GDP, the higher the growth rate of the real per capita GDP. In contrast, the coefficient of investment as a percentage of GDP appear as positive; this is in line with our expectations. The coefficient of public expenditure and human capital appear as significant and negative in column 9, which is the opposite of my expectations.

7. CONCLUSION

Tourism sector has been considered a potential driver for growth and the relationship between tourism revenues and growth is one of the topics that has been much discussed widely in the literature. Tourism, is a rapidly developing and renewing sector, has a constantly growing structure. Today, it is one of the sectors that developing countries value most. In particular, tourism can reduce increasing economic disparities between developed countries and regions and less developed countries and regions.

In this study I test the validity of a tourism-based growth strategy using the ordinary least square regression method using a sample consisting 181 countries over the period 1995-2018. I further investigate the relationship between tourism and growth across different groups of countries. In this regard, I identify tourism intensive countries for which tourism is the main source of income. My results show that for the whole sample, the estimation results fail to find a significant relationship between tourism and economic growth. On the other hand, increase in tourism specialization, measured as the ratio of tourism revenues to nominal GDP, positively impact per capita growth rate of countries which are highly dependent on tourism. In addition,

across most of the specifications the coefficient of openness and investment as a percentage of GDP appears as positive showing a positive relationship between these variables.

APPENDIX

Country Code	Country Name	Growth Rate of Real per Capita Income	Initial level of per Capita Income	Openness	Tourism Revenue	Public Expenditure	Investment
ABW	Aruba	-0.32395	101,926,100	14883200	50.24883	24.226	-
AGO	Angola	2.40299	756,133,800	99.96219	0.54365	17.6494	28.2651
ALB	Albania	4.95901	744,031,500	68.25345	11.00689	10.9826	29.0684
ARE	UAE	-1.69989	110,458,200	142117600	2.33319	9.98072	21.5279
ARG	Argentina	1.33887	894,461,900	30.6798	1.25206	14.3669	16.5744
ARM	Armenia	6.65057	695,037,500	73.42928	5.37911	11.6968	23.2639
ATG	Antigua and Barbuda	1.44124	932,305,800	115389800	36.60303	-	-
AUS	Australia	1.76669	105,478,400	41.07694	2.75534	17.8349	25.9967
AUT	Austria	1.40849	105,061,100	92.39852	5.34473	19.5236	23.6952
AZE	Azerbaijan	7.29071	711,882,400	86.66071	2.5676	11.7657	28.2332
BDI	Burundi	-0.90026	556,977,500	32.82657	0.13938	19.3512	10.964
BEL	Belgium	1.24194	104,696,100	145870200	2.54365	22.5075	22.3611
BEN	Benin	1.5476	644,757,700	57.8802	2.62068	14.2258	22.6117
BFA	Burkina Faso	2.99816	588,921,400	42.64596	1.13741	22.3009	22.4843
BGD	Bangladesh	4.28184	613,038,500	35.61173	0.09497	5.21402	25.7603
BGR	Bulgaria	3.73812	823,798,300	103178300	8.05762	17.1626	20.2107
BHR	Bahrain	-0.07922	999,471,300	147415800	9.09736	16.3742	22.8338
BHS	Bahamas, The	0.1104	102,042,700	81.78305	22.61058	11.3203	27.0649
BIH	Bosnia and Herzegovina	9.97736	676,879,200	96.27185	4.66407	22.2449	21.5844
BLR	Belarus	5.35088	76,380,300	126405600	1.28127	17.8189	28.5043
BLZ	Belize	1.04097	813,835,900	117388500	17.72844	14.7651	19.8686
BMU	Bermuda	1.11543	110,927,200	76.6853	11.10073	15.4052	6.89482
BOL	Bolivia	2.38074	730,882,300	63.06007	2.11055	15.0126	17.4716
BRA	Brazil	1.15051	905,252,600	24.01788	0.31047	19.3753	18.3229
BRB	Barbados	1.1121	947,990,700	88.62	23.90476	15.0585	16.9686
BRN	Brunei Darussalam	-0.7674	105,377,800	102381700	1.6089	23.6016	25.2381
BTN	Bhutan	5.44259	685,324,800	92.15068	3.40646	19.3344	51.0436
BWA	Botswana	2.60533	841,754,200	95.58603	4.42756	21.7736	29.2069
CAF	Central African Republic	-0.19739	610,106,300	41.01445	0.52999	9.91791	11.3918
CAN	Canada	1.3809	105,347,700	68.83976	1.3815	20.3252	21.9205
CHE	Switzerland	1.07647	110,312,200	104783700	3.08894	11.7932	24.1984
CHL	Chile	2.83314	898,773,600	63.84059	1.44651	11.8656	22.982
CHN	China	8.37133	711,057,300	45.19246	0.9766	14.1434	39.4931
CIV	Cote d'Ivoire	1.07727	720,465,700	79.88855	0.69312	13.0907	13.2376

CMR	Cameroon	1.54399	696,056,900	49.50799	1.27778	11.3981	22.1624
COD	Congo, Dem. Rep.	0.27557	599,442,400	59.2907	0.03705	6.7005	15.7394
COG	Congo, Rep.	0.3109	782,418,600	140048500	0.53385	14.641	25.3993
COL	Colombia	1.88151	85,271,300	36.45045	1.35365	15.5365	20.1169
COM	Comoros	0.37195	713,658,400	36.91999	4.12648	10.7674	16.813
CPV	Cabo Verde	4.55418	7,235,300	96.84274	18.52844	17.7502	39.6265
CRI	Costa Rica	2.52854	862,894,800	78.04312	7.81822	15.0165	19.9349
CUB	Cuba	3.98573	795,464,200	34.62139	4.65366	32.1882	9.51921
CYP	Cyprus	1.30371	100,516,700	122303700	15.0241	16.3525	20.5035
CZE	Czech Republic	2.46012	950,769,900	119540600	4.33551	20.1314	28.2925
DEU	Germany	1.38509	104,568,700	70.6495	1.32948	18.87	20.6908
DMA	Dominica	1.27473	849,024,800	91.91693	19.80153	-	-
DNK	Denmark	1.09917	108,020,800	90.10811	2.05858	25.0497	20.6636
DOM	Dominican Republic	3.92546	807,777,900	64.94373	9.79774	9.29233	23.1695
DZA	Algeria	1.75012	808,332,300	62.16836	0.18837	16.46	29.5501
ECU	Ecuador	1.35231	825,390,300	52.48769	1.38028	12.0837	21.9134
EGY	Egypt, Arab Rep.	2.48405	741,356,200	47.18807	4.94964	11.3711	18.1478
ERI	Eritrea	-0.19406	66,292,800	67.63403	6.80462	37.2341	22.3994
ESP	Spain	1.49783	100,726,700	56.4082	4.63123	18.1893	24.1227
EST	Estonia	4.62493	889,751,100	143080300	8.76194	19.3634	28.1136
ETH	Ethiopia	5.14721	521,247,600	39.08408	3.5269	9.79054	36.4847
FIN	Finland	1.86711	10,373,400	73.96928	1.7615	22.2683	22.0748
FJI	Fiji	1.97773	804,661,600	-	21.62442	-	-
FRA	France	1.11367	10,431,700	54.95242	2.38182	23.2554	21.6309
FSM	Micronesia, Fed. Sts.	0.12417	790,932,300	10214100	7.7843	-	-
GAB	Gabon	-0.90823	933,738,300	86.98952	1.13158	13.682	26.4434
GBR	United Kingdom	1.51467	103,263,200	54.53834	1.83906	18.5649	17.0552
GEO	Georgia	6.69623	693,143,500	83.01209	7.32261	15.3127	23.8555
GHA	Ghana	3.24193	677,225,100	81.24883	3.4908	10.495	21.6884
GIN	Guinea	2.22807	635,119,900	69.50665	0.13525	10.9328	21.6955
GMB	Gambia, The	0.53531	61,408,200	61.34231	8.69784	9.90199	14.3538
GNB	Guinea-Bissau	-0.01517	650,198,600	50.94498	1.40494	10.8807	11.6184
GNQ	Equatorial Guinea	14.84583	678,649,800	114870200	0.95858	13.9144	30.8816
GRC	Greece	0.81189	989,895,300	54.22677	5.80781	19.7232	19.3225
GRD	Grenada	3.08233	845,301,400	88.35763	21.00318	-	-
GTM	Guatemala	1.29092	776,467,500	56.30401	2.60025	8.7228	15.9128
GUY	Guyana	2.92034	763,050,200	16156300	6.20728	18.83	25.8677
HKG	Hong Kong SAR, China	2.56986	999,395,800	33203500	8.97626	9.30896	24.1589
HND	Honduras	1.52519	735,499,500	117541700	3.63971	15.4757	25.2014
HRV	Croatia	2.77766	905,521,100	81.94102	14.88594	20.2421	21.7813
HTI	Haiti	-0.07418	661,700,900	58.59399	4.37303	-	-
HUN	Hungary	2.72767	910,008,100	139102600	5.77016	21.0645	22.8476
IDN	Indonesia	2.98157	770,529,700	54.97948	1.99852	8.26513	27.2375

IND	India	5.08496	651,414,900	38.70406	0.86363	10.8658	29.4905
IRL	Ireland	4.38434	102,987,200	173305900	3.67785	15.9454	23.8197
IRN	Iran, Islamic Rep.	2.11616	84,038,900	43.86063	0.62107	11.6241	28.7411
IRQ	Iraq	4.89256	775,348,700	82.52273	0.98294	19.8664	14.4611
ISL	Iceland	2.31445	103,453,400	81.79821	5.50459	23.2947	21.7556
ISR	Israel	1.47748	101,233,900	68.1124	2.53144	24.1533	20.6677
ITA	Italy	0.34791	103,990,900	51.37952	2.18251	18.8768	19.4366
JAM	Jamaica	-0.08713	850,855,200	88.65523	16.4738	14.2924	23.554
JOR	Jordan	0.85363	789,413,500	117627600	14.14187	20.0458	23.3264
JPN	Japan	0.85583	106,058,100	26.54657	0.28234	18.2322	25.0654
KAZ	Kazakhstan	4.94696	822,643,200	79.61621	1.39806	11.446	22.7809
KEN	Kenya	1.55278	674,305,500	53.02898	4.75644	15.0677	18.487
KGZ	Kyrgyz Republic	3.17738	628,234,900	107512400	4.70853	18.0526	23.0671
KHM	Cambodia	5.66949	583,449,300	115320400	12.50796	5.30997	17.9549
KIR	Kiribati	0.40869	739,190,900	107163700	2.92996	-	-
KNA	St. Kitts and Nevis	2.05677	93,444,800	88.01661	19.04711	-	-
KOR	Korea, Rep.	3.57503	939,725,400	78.15224	1.32524	13.4395	31.3171
KWT	Kuwait	-0.76553	106,357,600	92.70581	0.75382	21.2613	15.589
LAO	Lao PDR	5.2847	630,622,900	77.51073	4.961	10.7317	28.6486
LBN	Lebanon	0.81199	857,500,800	76.57345	15.94728	14.1869	24.3079
LCA	St. Lucia	0.87053	885,739,300	97.40148	32.23772	15.7651	20.0531
LKA	Sri Lanka	4.40238	72,926,300	65.81582	3.04425	10.9446	25.069
LSO	Lesotho	2.84884	66,053,600	13876200	1.78282	36.2237	26.4475
LTU	Lithuania	5.48617	857,968,300	120658100	3.34992	19.8172	20.9636
LUX	Luxembourg	1.62786	112,222,600	306973500	8.80392	16.4313	19.7348
LVA	Latvia	5.32688	854,491,100	100541400	2.89156	19.4354	24.2571
MAC	Macao SAR, China	4.12327	101,486,300	128768300	62.68877	9.96558	18.6594
MAR	Morocco	2.96631	745,432,100	69.14583	7.44767	18.0951	28.2688
MDA	Moldova	3.29629	717,358,800	115045600	4.00649	18.5681	22.4712
MDG	Madagascar	0.25195	603,293,800	65.64839	4.88427	9.34092	19.1139
MDV	Maldives	2.70853	843,373,300	15339200	60.1865	-	-
MEX	Mexico	1.32945	895,127,500	58.93808	1.43412	10.6435	21.0788
MHL	Marshall Islands	0.12629	80,743,400	137961100	3.18933	57.242	23.9376
MKD	North Macedonia	2.52364	802,518,500	95.34008	1.97503	17.8692	21.1268
MLI	Mali	2.0166	620,792,600	57.75245	1.85214	15.1638	19.309
MLT	Malta	2.91694	959,810,800	261242700	15.70436	18.4227	20.9211
MMR	Myanmar	8.50861	549,035,700	13.34745	1.46716	16.7753	27.5694
MNG	Mongolia	4.77901	728,558,800	110256500	4.68118	13.5904	29.4672
MOZ	Mozambique	5.14341	515,687,300	79.8415	1.47802	19.4553	20.3379
MRT	Mauritania	1.20949	694,974,800	98.73899	1.04404	20.5027	34.8056
MUS	Mauritius	3.73921	842,429,600	115997700	16.21197	14.148	22.2056
MWI	Malawi	1.53866	590,536,600	61.67485	1.17271	13.6847	13.9114
MYS	Malaysia	2.95861	874,474,400	176023500	6.71123	12.1265	26.1824
NAM	Namibia	2.18923	822,195,600	97.75262	5.76365	23.7309	22.1163
NER	Niger	0.80988	581,425,800	50.72571	1.15811	14.921	23.3922

NGA	Nigeria	2.58392	720,688,200	38.62288	0.18175	4.7872	24.6888
NIC	Nicaragua	2.32907	700,647,900	80.7856	3.28981	11.5273	25.5532
NLD	Netherlands	1.56323	105,629,800	129941700	2.13396	23.3846	20.8712
NOR	Norway	1.18575	111,627,700	70.18271	1.45263	21.1266	22.2838
NPL	Nepal	3.14689	599,070,200	50.24751	3.13791	9.6611	22.6464
NZL	New Zealand	1.56009	101,913,900	58.43414	4.52716	17.9495	22.1303
OMN	Oman	-0.11793	969,866,200	95.65937	2.34724	22.3174	23.0107
PAK	Pakistan	1.732	669,591,400	32.12457	0.64194	10.2788	15.278
PAN	Panama	4.01362	847,352,400	134767900	7.65483	12.8192	28.5158
PER	Peru	3.26715	80,414,500	43.86846	1.78125	11.4374	21.2598
PHL	Philippines	3.09063	73,183,400	83.58004	2.359	10.7427	21.4961
PNG	Papua New Guinea	1.18666	753,479,700	113707200	0.12301	16.9982	17.541
POL	Poland	4.15594	878,568,500	75.26313	3.01058	18.2719	20.2417
PRI	Puerto Rico	1.34044	991,749,100	107349600	3.71066	11.3068	12.9639
PRT	Portugal	1.21219	980,259,200	69.39751	5.77698	19.0958	21.564
PRY	Paraguay	1.47846	826,803,800	79.75051	1.01758	9.57894	18.5153
PSE	West Bank and Gaza	1.67126	757,115,700	82.60098	3.52761	26.2122	26.0382
ROU	Romania	3.8872	849,696,100	66.80109	1.17169	14.8628	24.1294
RUS	Russian Federation	3.11839	868,760,400	53.26359	1.2229	17.8901	19.8572
RWA	Rwanda	4.77521	56,536,500	38.97815	3.18725	14.8906	18.6761
SAU	Saudi Arabia	0.50769	983,873,400	74.14015	1.57291	23.7247	21.5418
SDN	Sudan	3.40189	676,883,600	29.09553	0.45977	9.05137	17.6378
SEN	Senegal	1.81132	693,471,700	61.31535	2.92736	13.8716	22.1165
SGP	Singapore	3.08368	102,912,500	360584600	5.70558	9.92369	28.5547
SLB	Solomon Islands	-0.33027	741,127,800	93.05675	3.99672	26.6651	8.24217
SLV	El Salvador	1.44529	783,548,100	70.69273	3.88579	14.2689	16.7466
SRB	Serbia	3.55464	805,623,100	70.0588	2.15435	18.8883	17.1004
SUR	Suriname	1.67562	862,181,900	97.51854	3.04705	12.039	42.0807
SVK	Slovak Republic	3.88268	907,094,900	148849500	2.36658	19.3642	26.1274
SVN	Slovenia	2.58131	961,998,500	122283400	5.43175	18.6541	23.6502
SWE	Sweden	1.85525	105,384,100	82.37343	2.04562	25.4205	22.4547
SWZ	Eswatini	2.19101	798,578,700	12840400	1.54146	18.5986	16.157
SYC	Seychelles	2.67606	89,884,200	164857500	36.08549	30.7031	31.4618
TCD	Chad	2.55132	618,230,500	73.72962	1.40226	6.35539	26.1559
TGO	Togo	1.35717	621,475,300	83.63005	2.29613	11.7859	17.2774
THA	Thailand	2.65324	816,954,900	120690500	8.27724	14.4744	26.0313
TJK	Tajikistan	4.02262	610,280,800	112359300	1.50156	12.2891	18.9068
TKM	Turkmenistan	6.034	762,768,200	86.84838	1.21189	10.9456	35.1736
TON	Tonga	1.28664	801,919,100	73.87756	6.54204	18.0744	23.5196
TTO	Trinidad and Tobago	3.66138	883,548,500	-	3.76042	-	-
TUN	Tunisia	2.63829	779,534,500	93.081	7.68281	17.3655	22.7676
TUR	Turkey	3.27266	889,773,800	48.28201	3.62189	13.2406	25.5826
TUV	Tuvalu	1.48492	789,313,400	-	6.15527	-	-
TZA	Tanzania	3.05776	617,235,900	40.64228	4.63687	10.1068	27.1667

UGA	Uganda	2.98824	589,214,500	42.17925	3.35671	11.6361	21.9671
UKR	Ukraine	2.34061	755,875,200	99.82175	2.51781	19.4378	19.1475
URY	Uruguay	2.70466	899,292,400	47.27153	3.8733	12.5524	17.0997
USA	United States	1.55234	105,550,100	25.96434	1.14042	14.981	21.1342
UZB	Uzbekistan	4.5422	659,643,100	57.07556	0.49273	17.9821	24.6054
VCT	St. Vincent and the Grenadines	2.23725	833,388,300	92.32748	19.03808	21.1673	25.8401
VEN	Venezuela, RB	0.74003	944,877,400	49.93186	0.52889	11.9145	21.1789
VNM	Vietnam	5.42539	636,872,600	138721100	3.98867	6.44404	28.2246
VUT	Vanuatu	0.42189	787,335,600	95.97613	28.19987	18.6369	24.2992
WSM	Samoa	2.25057	776,581,500	79.26121	17.05298	-	-
YEM	Yemen, Rep.	-1.77108	696,670,600	-	1.62491	-	-
ZAF	South Africa	1.24612	863,324,700	56.33901	2.84363	19.4586	18.3979
ZMB	Zambia	2.70981	681,298,700	67.42271	2.46421	12.7262	30.0942
ZWE	Zimbabwe	0.31478	720,488,700	71.9705	2.2549	16.0551	10.9322
Total		2.43904	818,470,900	87.56071	6.48822	16.0421	22.4813

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