ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
ECONOMIC STUDIES

Volume 33(1), 2024

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THE EFFECT OF TOURISM REVENUES AND INFLATION ON ECONOMIC GROWTH IN BALKAN COUNTRIES[2]

Earnings from the tourism industry not only contribute to the expansion of an area's or nation's economy, but also result in the development of new jobs across a variety of industries, the accumulation of foreign currency, and the upgrading of economic infrastructure over the longer term. The purpose of this research is to investigate how income from tourism and inflation rates affect the pace of economic expansion in nations located in the Balkan region (Albania, Bosnia and Herzegovina, Bulgaria, Montenegro, North Macedonia, Greece, Serbia, Croatia, Slovenia, Romania). The Balkans, the region of dynamic developments, diversity of lifestyles, rich historical heritage and authentic culture from ancient civilizations to the present, has various tourism potentials such as sea tourism, mountain tourism, cultural tourism, rural tourism, health tourism and ecotourism. The research covers the years 2005-2020 and includes data on the variables that impact economic development in the nations that make up the Balkan region. Since there were significant gaps in Kosovo's data, the country was excluded from the research. Panel data analysis was used in the research to investigate macroeconomic variables such as foreign tourism revenues and inflation rates in these nations. Both of these factors are related to tourism. In the research that was conducted using a panel analysis method, the conclusive analysis wasn't begun until after the appropriate assumption tests had been carried out. It has been determined, via the use of the Driscoll-Kraay technique of estimating, whether or not these factors have an effect on economic growth. Based on the data that was collected as a result of the investigation, it was determined that the expansion of the tourism sector in the nations that were chosen from the Balkan region does not have a substantial impact on the overall growth of the economies of these countries. In a similar vein, inflation rates were completely unrelated to growth.

Keywords: Tourism; Economic Growth; Tourism Revenues; Driscoll-Kraay; Balkan Countries

JEL: Z32; H27; O47; O52

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[2] This paper should be cited as: *Huseynli, B. (2024). The Effect of Tourism Revenues and Inflatıon on Economic Growth in Balkan Countries. – Economic Studies (Ikonomicheski Izsledvania), 33(1), pp. 150-165.*

1. Introduction

Since it is integrated with a great number of service businesses, the success of the tourism industry influences the success of other industries that are tied to it (Ecer, Günay, 2014). The tourism business provides a wide variety of services in several sectors, such as accommodation, food and drink, and travel agencies, in addition to providing numerous employment opportunities. This broad range of services is offered by the tourism industry. The tourism sector is the primary growth driver for the global economy. Globalization's tendency to grow visitor numbers year after year in recent years has greatly impacted both the tourist business and the quality of service, except for the period during which the COVID-19 epidemic was active.

Tourism is a social, cultural, and economic phenomenon that may be described as the migration of individuals to nations or locations outside of their typical surroundings for the sake of recreation, commerce, or other professional or personal endeavours. It is well acknowledged that the tourism sector is one of the most lucrative, productive, and rapidly expanding subsectors of the global economy. A significant number of nations recognize the significance of tourism as an essential component of their plans for economic growth (Huseynli, 2022a, 2022b).

It is possible that tourism might help people's sociocultural development by putting more power in the hands of women and communities of people with disabilities, as well as by creating chances for long-term employment. Because of this, countries that are already established as well as nations that are still in the process of growing give a high emphasis on the education of skilled personnel in the tourism and lodging industries to increase the contribution of these industries to overall national development (Aynalem, Birhanu, Tesefay, 2016). The tourism business is one that has a great deal of untapped potential because of the expansion of economic dynamics and its capacity to take in workforce applicants.

Many people believe that tourism is a regional development agency that has the potential to advance economic growth on both a national and international scale (Jackson, Murphy, 2006). In addition, studies published in academic journals have investigated the link between increasing tourism, relative prices, and overall economic expansion (Risso, Barquet, Brida, 2010). According to the conventional wisdom, there is at least one causal link between tourism and economic development. However, Katircioglu (2009) concludes that there is no link between the two, particularly over the long term because it is not likely that they are cointegrated. This contrasts with the conventional wisdom, which holds that there is at least one causal link between tourism and economic development. The pooled OLS estimator was used by Modeste (1995) in her research on the effects of tourism on the economic growth of three Caribbean countries (Barbados, Antigua & Barbuda, and Anguilla).

The research that has previously been conducted on the subject sheds light on the unidirectional connection that exists between the influx of tourists, the resulting increase in earnings, and improvements in quality of life (Sarpong, Bein, Gyamfi, Sarkodie, 2020). The profits generated by the tourism sector have a significant impact on the economic growth of a country or area. These earnings also lead to the production of employment in a variety of industries, the accumulation of foreign currency, and improvements to the long-term

infrastructure of the economy (Ribeiro, Lopes, Montenegro, Andrade, 2018). One theory asserts that revenues from tourism first contribute to a financial deficit, but that these deficits eventually have a significant positive influence on economic growth (Sanchez Carrera, Brida, Risso, 2008).

Knowing about inflation or visitor pricing is necessary for demand forecasting in the tourism industry. According to studies, an increase in inflation has a negative but significant effect over the long term on tourism demand, while a decline in inflation has a positive but insignificant influence over the long term on tourism demand (Parvin, 2022). The increased demand for goods and services that results from an increase in the amount of money that is spent there by tourists could give birth to inflation (Gee, Makens, Choy, 1997). Inflation refers to a situation in which the price of an item keeps going up over a considerable amount of time. The devaluation of currency is a possibility whenever there is persistent inflationary pressure on prices of goods. It is possible that people's capacity to buy items will decrease as a direct consequence of the value of money going down (Wirdayanti, Reniati, Saputra, 2022). It is believed that there is a connection between inflation and the purchasing power of consumers. This is because when inflation rises, consumers' purchasing power falls, and as a result, tourists stop travelling. If the rate of inflation falls, then more people may go there to take advantage of the lower cost of living as well as lower travel costs.

The Balkans have been an area of rapid advancements, a variety of lifestyles, a rich historical legacy, genuine culture, and a well-preserved nature from the time of ancient civilizations all the way up to the current day (Tomka, 2014). The region known as Southeast Europe includes the Balkan Peninsula. The term “Balkan”, which literally translates to “forest mountain”, is where the name “Balkan Peninsula” derives from. The name is said to have originated in Turkey (Griffiths, Krystufek, Reed 2004). According to Akova and Demirkıran (2013), the Balkan Peninsula is bordered on its northern side by the Danube, the Sava, and the Kupa rivers. It is encircled by the Mediterranean Sea, the Adriatic Sea, the Black Sea, and the Aegean Sea. Mountain tourism established by the nations of the Balkan Peninsula, the most significant of which are the Dinar Mountains, Shar Planina, Pindos, and Stara, and the countries of the Balkan Peninsula, which have a great deal of mountainous terrain, have also developed mountain tourism. Activities such as swimming, sunbathing, and participating in various water sports are all part of marine tourism. Greece has the longest coastline in the Balkans with 15,000 kilometres, followed by Croatia with 5,790 kilometres of shoreline. Each of the Balkan countries has its own unique length of coastline. Bosnia has around 20 kilometres (km) of shoreline, whereas Slovenia has 32 kilometres (km). The sheer number of islands off the shores of Greece and Croatia contribute significantly to their length (Bramwell 2004). Nonetheless, the Balkans are an area filled with a long and rich history, magnificent tourism sites, and welcoming people; yet, political unrest and instability, poor economic growth, and religious issues are having an influence on the development of tourism across the whole region (Cvetkoska, Barisic, 2017).

According to Methodijeski and Temelkov (2014), the following is a list of the national policies that the nations of the Balkan region have implemented to boost tourism and the tourist goods that they place a particular emphasis on:

- Mountain tourism is ideal for winter sports, energetic vacations, cycling, and other types of active travel; marine tourism, which includes activities like as swimming, sunbathing, and water sports, is also popular.
- Tourism that focuses on culture and history, such as going to museums, events, and festivals, or participating in activities of that kind.
- Tourism for business purposes and tourism for conferences, both of which comprise travel resulting from the performance of activities linked to doing business.
- Tourism in rural areas may include visits to restaurants serving regional specialities, traditional arts and crafts, warm hospitality, and unique building styles.
- Tourism for health and wellness, also known as health and spa tourism, involves participating in a variety of health-related activities, such as receiving health-enhancing treatments, staying at spas, receiving massages, and doing other similar activities.

Many research projects on the topic of tourism in the Balkans have been carried out. Đukic et al. (2014) created a concept for responsible, community-based ecotourism that may be implemented in protected rural regions near major cities and towns in the Balkan Danube basin. Kiss (2015) conducted research that investigated the difficulties associated with establishing health tourism in the Balkan area. According to Sziva et al. (2017), content analysis was used to investigate the positioning of companies in the health tourism industry via the online communications of nations in the Balkan region. The number of visitors, international tourism revenue, percentage of GDP, and chosen variables of hotel and restaurant pricing index in Balkan nations for the period 2017-2020 were analysed in research that was conducted by Beraha and Đuričin (2022).

Considering these perspectives, the aim of this research was to investigate the possible causal connection between income from foreign tourism and rates of inflation. The variables of the research were used on the nations of the Balkan region in consideration of the data collected between 2005 and 2020.

2. Literature Review

2.1. The Role of Tourism in Economic Development

Oh (2005) discovered that economic development in South Korea is Granger-caused rather than tourism-inverse. In a 2007 research, Khalil, Kakar, and Malik used the ECM to analyse the contribution of tourism revenues to Pakistan's short-term economic growth between 1960 and 2005. For OECD and non-OECD nations (including 23 countries), Lee and Chang (2008) used fully modified ordinary least squares (FMOLS) and ECM heterogeneous panel cointegration methods to investigate the causal link between tourism development and economic growth.

The connection between tourism and economic development in Nepal was looked at in research by Gautam (2011). The link between economic development and foreign commerce in India was examined in research by Suresh, Gautam, and Kumar (2011). Samimi, Sadeghi,

and Sadeghi (2011) used the P-VAR method to examine the relationship between economic growth and tourism development in developing nations between 1995 and 2009.

For Germany, Italy, Spain, Greece, Austria, England, Cyprus, the Netherlands, Portugal, and Sweden, Antonakakis et al. (2013) used a vector autoregressive model (VAR) to analyse the link between tourism and economic growth. Tang and Tan (2013) found evidence to support the validity and stability of the tourism-induced growth theory in Malaysia from 1995 to 2009. The long- and short-term relationships between tourism and economic development in Sri Lanka were examined using yearly data spanning the years 1978 to 2011 in research by Mustafa and Santhirasegaram (2014).

Using the VECM and Johansen Maximum Likelihood cointegration techniques, Pavlic, Svilokos, and Tolic (2015) investigated the causal link between Croatian tourism and economic development. In the research carried out by Huseynli (2022c) between 1998 and 2019, the relationship between revenue from international tourism and the growth of the economies of Kazakhstan and Kyrgyzstan was investigated. A positive linear association exists between the variables in both nations, as shown by the findings of the regression analysis that was carried out as part of the scope of the research. The paradoxical distribution of domestic and international pricing in the impacts of relative prices on tourist arrivals was discovered by Karimi, Khezr, and Razzaghi's (2022) research on the effects of regional conflicts on tourism in Middle Eastern and African nations. Although increasing costs in other nations drew more domestic travellers, it also became clear that higher prices domestically are a sign of better tourism infrastructure and more travellers.

As can be seen, research has been done in the literature on the relationship between tourism growth and economic growth in light of data from different countries. However, there are not many studies that analyse the effect of tourism on economic growth in all Balkan countries. Therefore, the research was designed to cover the Balkans.

2.2. The Importance of Tourism Revenues in the Tourism Sector

Several nations are attempting to capitalize on its natural assets and draws, which promote economic development and support this industry, such as cultural history, exotic scenery, and handy locations for shopping and entertainment (Sheng, 2011). Calculating tourism income per foreign visitor involves dividing tourism earnings by the total number of foreign visitors.

It is vital to appropriately make use of the tourism potential to raise the amount of money that can be made off tourism. Under this framework, the nations of the Balkans have a significant potential for tourism. In research that was carried out by Metodijeski and Temelkov (2014), the tourism policies of the nations that are located in the Balkan Peninsula were investigated using the lens of national plans for the growth of tourism and the goods that are associated with tourism.

Real GDP and tourism income have a long-term association, whereas tourism and economic growth have a short-term relationship, according to Balaguer and Cantavella Jorda's 2002 research. Using panel data from 42 African nations, research by Fayissa, Nsiah, and Tadasse

(2008) found that the profits from the tourism sector considerably contributed to the economic development of African countries.

According to research by Kreishan (2011), Jordan's long-term economic development from 1970 to 2009 was positively correlated with tourism expenditures. The link between tourism-driven development in Malaysia was examined using Granger causality tests in research by Tang (2011). The Granger and Hsiao causality tests were used in research by Assadzadeh and Nasab (2012) to examine the causative link between tourism-related revenue and GDP in Iran from 1968 to 2007.

Aleemi (2015) conducted research on the effects of tourism income on Pakistan's economic growth between 1981 and 2013. In research published in 2020 by Hesami, Rustamov, Rjoub, and Wong, the effect of oil prices on tourism income in nations that significantly depended on crude oil exports from 2000 to 2017 was investigated.

The tourism sector is related to the amount of money tourists spend in different areas and on different items and has an important place in the economies of countries. Tourism earnings play a major role in the economy, especially in countries where tourism is developing. As can be seen, although the relationship between tourism revenues and economic growth in different countries and regions has been analysed in the literature, such comprehensive studies have not been found in the Balkan region. For this reason, the income from the tourism sector has been included in the hypotheses of the research.

2.3. The Relationship between Tourism and Inflation

Demand-side inflation and cost-side inflation are the two main causes of inflation. Demand-side inflation is an inflation brought on by increases in overall demand. Any element that boosts overall demand, such as a decrease in interest rates, an increase in available funds, an increase in government expenditure, a reduction in taxes, an increase in exports, or an increase in investment motivated by the anticipated rise. Demand-side inflation might be brought on by future earnings. On the other hand, cost-oriented inflation is defined as inflation that begins with a rise in expenses, such as an increase in the pay rate and an increase in the price of raw resources like oil (Kırca, Özer, 2020).

In emerging nations, inflation has a significant role in determining the demand for tourism. Pricing and global economic trends are the main internal and external factors affecting international travel (Parvin, 2022). The price elasticity of demand indicates how adversely rising travel costs are always correlated with travel demand. Hanafiah and Harun (2010) assert that there is an inverse relationship between visitor numbers and inflation.

Arbel and Strebel's research from 1980 may be considered as the first to use regression analysis to explore the links between inflation and tourism demand as well as the correlations between inflation and hotel prices, occupancy rates, and profitability. According to research by Coltman (1989), the growth of the tourism sector would result in higher living expenses for certain cities' citizens. According to Gee et al. (1997), it was underlined that as the tourism industry grew, land costs would rise and would significantly contribute to the rise in inflation.

Tribe (2011) asserts that the rise in touristic and recreational activities raises the cost of both products and services as well as real estate. Using yearly data from 1970 to 2008, Tang (2011) looked studied the correlations between Malaysia's desire for tourism, inflation, unemployment, and crime rates. Moreover, research by Yong (2014) that looked at the relationships between tourism demand, innovations, and inflation for 14 European nations found that there were favourable relationships between innovations and tourism demand. In research done by Atay Kayış and Aygün (2016), it was discovered via the use of VAR analysis for the yearly data of Turkey for the years 2003-2011 that there is a long-term association between tourism revenue and inflation.

Kırca and Özer (2020) used yearly panel data from the years 2004 to 2013 to analyse the impacts of both local and foreign tourism demand (measured by overnight stays) on regional inflation and Turkey's overall tourism demand. The impacts of oil prices, inflation, currency rates, institutional quality, and trade balance on tourists to Bangladesh between 1995 and 2019 were examined in research by Parvin (2022). On the other hand, the pricing of products and services is subject to shifts in either direction over time. An increase in the price of a specific commodity or service is not the same thing as inflation; rather, inflation refers to an ongoing rise in the average price level across all goods and services (Huseynli, 2022a). The impact of leverage, firm size, inflation rate, and cash holding on firm value in the hotel, restaurant, and tourism sub-sector businesses listed on the Indonesian Stock Exchange for the period of 2017-2020 was investigated in research undertaken by Wirdayanti, Reniati, and Saputra (2022).

While the research model was being designed, inflation was also included in the model. That is to say, inflation is one of the important factors in determining tourism demand. Although there are studies in the literature linking tourism and inflation in different countries, no studies were found in the Balkans that tested these two variables empirically. For this reason, the inflation variable was also included in the study.

3. Research Methodology

3.1. Purpose and Data Set

Following the relaxation of travel restrictions imposed as a result of the COVID-19 pandemic, the tourism industry in the Balkans is quickly making a comeback and is on track to reach new highs in 2019 (Roushkova, 2022). As was mentioned, every single candidate country and potential candidate country for membership in the European Union, with the exception of Montenegro, reported a higher bed capacity in 2018 than they did in 2008 (Eurostat, 2020). In addition to all of this, there are also studies that highlight the optimistic trend in the growth of tourism in the Balkans over the past few years (Ndou, Hysa, Maruccia, 2023). The selection of the sample country group in the model has been defined as the Balkan countries that have managed to attract the attention of tourism recently. The Balkan countries included in the analysis are Albania, Bosnia and Herzegovina, Bulgaria, Montenegro, North Macedonia, Greece, Serbia, Croatia, Slovenia and Romania. Among the Balkan countries, Kosovo was not included in the analysis. The reason was that there were serious deficiencies in the data set of this country. Annual data for the period of 2005-2020 were used in the

model estimates and the data related to the determined variables were included in the study. The estimators and codes of the estimators used in the study were tested with the help of panel analysis using the versions of Stata econometrics and statistics programs. In order to obtain more robust results from the annual data, the logarithmic values of GDP and tourism revenues, which are among the variables included in the analysis, were analysed.

3.2. Analysis Method

Panel data analysis combines cross-section data with time series. Accordingly, it provides more illuminating data, more variability, less linear connection between variables, more degrees of freedom, and more efficiency (Gujarati, 2016). The method of estimating economic relations with the help of panel data models created using cross-sectional data with time dimension, in other words, panel data is called "panel data analysis".

In panel data analysis, it is generally encountered that the number of cross-section units is more than the number of periods.

$$Y_{it} = \alpha + \sum_{i=1}^{k} \beta_k X_{kit} + \mu_{it} \quad (1)$$

i=1, …, N; t=1, …, T; k=1, 2, …, q

Variables such as dependent variable (tourism revenues, inflation), independent variable (economic growth), constant parameter, slope parameters and error terms in the equation represent sub-index units (such as individual, firm, city, country) and sub-index units of time (such as day, month, year). It is assumed that the mean of the error term is zero and has a constant variance. In this model, the constant and slope parameters take values according to both units and time (Yerdelen Tatoğlu, 2013). According to the panel data model above; predicts that all independent variables affect all cross-section units equally. Otherwise, the stated equation is insufficient. An important issue that arises at this point is how to define it. The starting point can be kept constant for all units, or different starting points can be allowed for different units. In this case, two methods emerge as fixed and random effect models. The fixed effect model predicts that the starting point will take a constant value for all cross-section units.

The random effects model defines the starting point as a random variable. Accordingly, the starting points consist of the sum of the constant value and the zero-mean random variable. The Pooled Least Squares Method makes estimations under the assumptions of constant and slope parameters in the absence of unit or time effects (Yerdelen Tatoğlu, 2013).

In this study, panel data models were created for selected variables affecting growth in terms of selected Balkan countries and hypotheses based on the study were tested. The hypotheses put forward are:

- H_1: Tourism revenues affect economic growth in Balkan countries.
- H_2: Inflation rates affect economic growth in Balkan countries.

The growth will be estimated by fixed and random effect models and panel data analysis methods. On the other hand, the most suitable panel data models for the scientific research problem will be determined. Accordingly, the analysis will be made on the significant factors affecting growth.

4. Analyses and Results

The summary table of the data set used in the study before the analysis is given in Table 1. After examining the summary table of statistics, the necessary model for analysis will be established.

Table 1. Special Statistics of Variables After Logarithmic Transformation

Variable	Obs	Mean	Std.Dev	Min	Max.
Tourism revenues	160	9.346537	0.5504212	8.064458	10.36178
Inflation	160	2.826868	2.675128	0.0548568	16.11998
Economic growth (GDP)	160	10.52776	0.519822	9.353565	11.55134

After examining the summary table of statistics, the original model was established for the study.

$$Lgdp = \beta_0 + \beta_1 Ltoruism\ revenue + \beta_2 inflation\ rate + \mu \quad (2)$$

The values of economic growth and tourism revenues, which are among the variables included in the analysis, are considered logarithmically. There are some tests developed to decide which of the classical fixed-effect and random-effect models to use. The important ones among these tests are the Random Effects Test (Lagrange Multiplier Test), the Likelihood Ratio (LR) Test and the Hausman Test (Yerdelen Tatoğlu, 2005). One way to determine whether unit or time effects should be included in one- and two-way random effects models is to test the hypotheses $\sigma_\mu^2\ \mu = 0$ or $\sigma_\gamma^2 = 0$. The LM test investigates whether these hypotheses are valid. The LM test developed by Breusch and Pagan (1980) is based on the error terms of the ordinary LCC estimator and compares the combined LCM (classical model) and random effects models (Greene, 2000). If it is decided that the random-effects model is not valid as a result of the LM test, the LR test is used to determine whether it is appropriate to use the fixed-effects model or the classical model. The H_0 hypothesis is established as the classical model is true.

While calculating the test statistic, the log-likelihood values obtained from the fixed-effect and classical models are used. From this point of view, the test statistic is explained as in Equation 1.

$$LR = -2log[L(limited)/L(unlimited)] \quad (3)$$

In this equation, 1 (constrained) shows the likelihood function of the classical model, and 1 (unconstrained) shows the likelihood function of the fixed-effect model. The LR test statistic q (number of constraints) conforms to the 2 distributions with degrees of freedom. If the H0 hypothesis is rejected, it is decided that the fixed-effects model is valid (Baltagi, 2008). The Likelihood Ratio (LR) Test results specific to the study are given in Table 2.

Table 2. Likelihood Ratio (LR) Test Results

Test Name	LR Statistics	Probability Value
Unit and Time Impact	463.77	0.0000
Unit Impact	400.91	0.0000
Time Effect	0.00	1.0000

According to the LR test results, the model includes unit and/or time effects. This result means that the Pooled Least Squares (POLS) method cannot be used for the model.

It is understood that the model used in the analysis is not a classical model under the assumption of fixed and random effects. The main hypothesis is that there is no correlation between the explanatory variables and error terms in order to determine in which model the model, which is consistent according to both effects, is effective; In other words, the fixed effects model is effective, Hausman and the Resistive Hausman (Rhausman) test, which is used in case of deviations from the diagnostic test assumptions, were performed.

Table 3. Hausman and Rhausman Test Results

Test Name	Test Statistic	Probability Value
Hausman	8.62	0.0134
Rhausman	12.98	0.0015

In the study, the autocorrelation assumption was examined with the Durbin-Watson tests of Baltagi and Li (1991) and Bhargava, Franzini and Narendranathan (1982). The autocorrelation test statistics based on the fixed effects model are shown in Table 4.

Table 4. Durbin Watson and Baltagi-Wu's LBI Test Results

Test Name	Test Statistic
Durbin Watson	2.4987
Baltagi-Wu`nun LBI	2.8454

If there is a cross-section dependency between the series, analyzing this situation affects the accuracy and reliability of the findings (Breusch- Pagan, 1980; Pesaran, 2004). Analysis results that do not take into account the cross-sectional dependence may become biased and inconsistent. In this direction, it is necessary to test whether there is a cross-section dependence in the series before the panel data analysis. The presence of cross-sectional dependence between series can be detected with the Breusch-Pagan (1980) LM test, the Pesaran (2004) CD and CDlm tests, or the Pesaran, Ullah, and Yagamata (2008) LMadj test. Breusch-Pagan (1980) LM test, when the time dimension is much larger than the cross-section dimension (T>N), Pesaran (2004) CDlm test, when the time dimension is greater than the cross-section dimension (T>N) but the difference between the two dimensions is not much is used. While the Pesaran (2004) CD test is used in cases where the cross-sectional dimension is greater than the time dimension (N>T), the Pesaran, Ullah, and Yagamata (2008) LMadj test eliminates the deviations in the LM test and the possibility of the correlation sum being 0 in the Pesaran CD test, and the *T* dimension is *It* is used when it is larger than *N*. In Table 5, the results of the panel-wide cross-section dependence analysis for the model are given.

Table 5. Test Results of Pesaran and Friedman

Test Name	Test Statistic	Probability Value
Pesaran CD	15.885	0.0000
Friedman	84.697	0.0000

Excessive binary correlation or high variance inflation factors (VIF) between two independent variables, according to Mansfield and Helms (1982), indicate the level of multicollinearity. The variance inflation factor (VIF), which measures how much the variance of an estimated regression coefficient rises when the estimators are correlated, is one method for estimating multicollinearity. All VIFs will be 1 if there are no connected factors. There is no multicollinearity between the regressors if the variance inflation factor (VIF) is equal to 1, but if the VIF is more than 1, the regressors may be moderately correlated. A significant correlation is indicated by a VIF of 5 to 10, which might be troublesome. And if VIF exceeds 10, it is likely that the regression coefficients are incorrectly estimated as a result of multicollinearity, which must be addressed (Akinwande, Dikko, & Samson, 2015; Büyükuysal & Öz, 2016). Recking (2010) tested the permissible ranges for the prediction model using a discrepancy range of 0.1 to 10. VIF test results are shown in Table 6.

Table 6. VIF Criteria Results

Variable	VIF	1/VIF
Tourism revenue	1.01	0.990861
Inflation	1.01	0.990861
Mean VIF	1.01	

After applying the assumption tests required for panel analysis, the analysis of the final model was made. The final estimation model was made using the Drisc/Kraay Resistive estimation method. The final analysis result of the model is given in Table 7.

Table 7. Drisc/Kraay Resistive Estimation Test Result

R^2	Number of Observations	Wald Test	rho	Prob
0.6786	160	6.71	0.95289784	0.0349
Lgdp	Coefficient Values	Drisc/Kraay Resistive Standard Errors	T statistics	P>|t|
Ltourism revenue	.2913762	.1676669	1.74	0.103
Inflation	-.0009733	.0050844	-0.19	0.851
Fixed Coefficient	7.807151	1.788143	4.37	0.001

It has been tried to examine the effects of inflation and tourism revenues on economic growth with the Driscoll-Kraay estimation method. Although the model gives a general significance result, it is seen that the variables do not have a significant effect on economic growth. With the data obtained as a result of the analysis, it was concluded that the development of the tourism sector in Balkan countries did not have a significant effect on the economic growth of these countries. Likewise, the inflation rates experienced did not have any effect on growth.

5. Discussion and Conclusion

According to the results of the study that was carried out by Khalil, Kakar, and Malik (2007), the development of Pakistan's economy is essential for the growth of the country's tourism sector. According to the findings of the study that was carried out by Lee and Chang (2008), it was discovered that tourism had a bigger influence on the GDP in non-OECD nations over the period of 1990-2002 than it did in OECD countries. As a result of the research that was carried out by Gautam (2011), it was found that the cointegration test for the determination of the long-run relationship and the error correction method for the short-run dynamics were both performed and as a result, it was found that it was determined that tourism (represented by foreign exchange income) causes economic growth in both the short run and the long run. The findings of the study that was carried out by Samimi, Sadeghi, and Sadeghi (2011) indicate that there is a positive long-term association, as well as bidirectional causation, between economic growth and the development of tourism.

According to the results of the investigation that was carried out by Assadzadeh and Nasab (2012), there is a long-term positive correlation between these parameters and income from tourism. This was determined by looking at the data over a period of ten years. The research that they did led to the discovery of this fact as a result of their work. According to the conclusions of the investigation that was carried out by Aleemi (2015), the revenue that is created by tourism does, in fact, contribute considerably and positively to the growth of the national economy. As a result of the research that was carried out by Pavlic, Svilokos, and Tolic (2015), it was discovered that there is a causal relationship between the openness of the economy and GDP in the short run, as well as between the real effective exchange rate and GDP. In addition, the researchers found that there is a relationship between the real effective exchange rate and GDP. The test, on the other hand, shows that there is no causal relationship between the number of tourists who visit and the GDP in the short term.

According to the results of the study that was carried out by Kırca and Özer (2020), it was determined that there are significant differences in the influence that different types of overnight stays have on the rates of inflation in a number of different geographic areas. In addition, the findings suggest that the contribution that domestic overnight stays make to general and regional inflation is greater than that which is made by overnight stays in other countries. This is the conclusion that can be drawn from the fact that domestic overnight stays are ranked higher. According to the findings of the study that was carried out by Hesami, Rustamov, Rjoub, and Wong (2020), oil prices and tourism revenues are cointegrated; there is a long-term equilibrium relationship between the two; and there is a unidirectional Granger causality from oil prices to tourism revenues. All of these propositions are supported by the fact that there is a long-term equilibrium relationship between oil prices and tourism revenues. The results of this investigation came to light as a direct consequence of the research that was carried out.

The countries in the Balkan area that have been successful in attracting the attention of tourism in more recent times have been selected to take part in the research as members of the sample country group. This will ensure that the results of the study are accurate. Among the Balkan countries, Kosovo was the only country not included in the analysis because its dataset had serious deficiencies. The study contained data pertinent to the elements that were

believed to be crucial, and the estimates that were generated by the model were run using yearly data for the period of time spanning 2005-2020. In this study, a method known as panel data analysis was used in order to evaluate the impacts of a number of different macroeconomic variables. These factors included the amounts of money made by tourism on a global scale as well as the rates of inflation in each country. According to the findings of research conducted by Kiss (2015), political mismanagement and corruption, as well as a lack of economic growth and proper finance, are to blame for the fact that many nations in the Balkan region are falling behind their equivalents in the EU member states.

In the study, which was in the form of a panel analysis, the definitive analysis did not get underway until after the testing of the required assumptions had been completed. It was determined, via the use of the Driscoll-Kraay estimation method, whether or not these aspects had an impact on the expansion of the economy. It was determined, on the basis of the data that was collected as a consequence of the investigation, that the expansion of the tourism industry in a number of the Balkan countries that were under consideration did not have a significant impact on the rate of economic growth that was experienced in these nations. This conclusion was reached as a direct result of the findings of the investigation. In a manner parallel to this, the rates of inflation that were seen did not in any way have an effect on the rate of growth overall.

As a result of the econometric analyses applied in line with the purpose of the research, both hypotheses put forward were not accepted. Namely, the hypotheses "H_1: Tourism revenues affect economic growth in Balkan countries" and "H_2: Inflation affects economic growth in Balkan countries" hypotheses put forward in the first hypothesis were not supported. In a study conducted by Pavlic, Svilokos and Tolic (2015), it was found that there is no causal relationship between the number of visiting tourists and GDP.

Although there is a causal relationship between tourism revenues and economic growth in most of the studies in the literature, a causal relationship was not concluded in this study. We can consider the reason for this as the fact that the studies in the literature are tested with a panel data set within the scope of one or more countries, and this study is within the scope of the data of a region's countries.

However, there are some limitations to the research. First, the countries of the Balkan region were analyzed together in the study. This does not allow the development of separate proposals for some countries. Second, economic growth, tourism revenues, and inflation variables were included in the study, and other factors that had a positive or negative effect on tourism and economic growth were not taken into account. From this point of view, we suggest that in future studies, the countries in the Balkan region should be classified and examined, other important factors affecting economic growth and tourism should be included in the studies, and the relationship between the tourism potential of each country and its economic growth should be evaluated separately.

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