All Sciences Proceedings

2nd International Conference on Contemporary Academic Research

November 4-5, 2023 : Konya, Turkey

ICCAR

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Determinants of international tourism in Albania: A panel data analysis

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Abstract **–**The main aim of this research is the identification of some of the most relevant demand and supply determinants of tourism inflows to Albania, given the fundamental role of the tourism sector on the country's economy. We formulate and estimate a gravity model for international tourism flows, considering some standard independent variables. The considered dataset includes twenty major origin countries over the period 2002-2021. According to the empirical results, all the parameters are statistically significant and the R-squared value is satisfactory.

Keywords –International Tourists; Albanian; Econometric Model; Pooled OLS; Tourism Factors.

I. Introduction

According to the latest data from UNWTO (United Nations World Tourism Organization), the number of international tourists reached nearly 80 percent of its pre-pandemic levels in the first three months of 2023; about 235 million tourists travelled during this period, more than double the number of 2022. The European continent had the best results in 2022, reaching almost 90 percent of its pre-pandemic levels.[1] Furthermore, Southern Mediterranean Europe was among the only subregions that recovered their 2019 numbers (UNWTO, 2023). The tourism sector plays a crucial role in stimulating economic growth and development in Albania, a European Mediterranean country with thousands of years of culture and history. According to INSTAT (Albanian Institute of Statistics), the number of international visitors in Albania in 2022 was nearly 7,5 million or more than 30 percent compared with the previous year.[2]

The main aim of this research is the identification of some of the most relevant demand and supply determinants of tourism inflows to Albania, given the fundamental role of tourism sector on the country's economy.

II. Materials and Method

The number of international visitors depends on numerous factors associated with both home and host countries. In this paper, we discuss and formulate a simple gravity equation for international tourist arrivals, including some typical independent variables. According to the Newton's law of universal gravitation, the gravitational force among two objects is directly proportional to the product of their masses and inversely proportional to the square of the respective distance.

After the "huge success" in international trade, the gravity model has become very popular within the tourism demand literature over the last decade.[1] Tinbergen (1962) was the first author to employ gravity to describe trade flows.[2] Whereas, Anderson (1979) and Bergstrand (1985) gave the initial theoretical economic foundations for gravity equations.([3], [4]) A gravity equation

[1] https://www.unwto.org/news/tourism-on-track-for-full-recovery-as-new-data-shows-strong-start-to-2023.
[2] https://www.instat.gov.al/.

for tourism predicts that tourism flows among two countries depend on the respective economic sizes (for instance, Gross Domestic Products) and travel costs (often estimated by the bilateral distance).[5]

Rossello Nadal and Santana Gallego (2022) analyse 143 important published papers that estimate a gravity model for tourism demand. According to the authors, the list of determining independent variables of the number of tourists is very large, but GDPs, distance, and populations are the most dominant ones.[6]

III. RESULTS

In this section, we estimate a particular gravity model for tourism demand in Albania. The so-called standard gravity model includes (origin and destination countries) populations, GDPs, or GDPs per capita, and the respective bilateral distance. The proposed equation includes the GDP per capita in Albania, and the GDP in the respective origin country (PCGDPt, PCGDPot); infrastructure investments in Albania (INFRAt); the distance between Albania and the origin country (DISTo); a dummy variable related to climate similarity between Albania and the origin country (WEATHERo); and a dummy related to the existence of the same border between Albania and the origin country (BORDo). The considered dataset includes twenty major origin countries over the period 2002-2021. Foreign tourists arrivals are sourced from the Albanian Institute of Statistics and other local (official) sources. GDPs per capita are collected from the official website of the World Bank's, whereas bilateral distances between Albania and the considered origin countries are collected from the well-known database of CEPII.[7] Infrastructure investments data are sourced from (different) Albanian government Ministries. The dummy variable related to climate conditions is based on the Köppen climate classification system.[8]

Table 1 shows the estimated parameters, the respective p-values, and the R-squared for the considered equations. The estimation technique that performed better was 'pooled ordinary least squares' (pooled OLS).

Table 1. Empirical results.

Pooled ordinary least squares		
"Supply" variable	*Estimate*	Pr(>|t|)
PCGDPt	0,501***	0,002
INFRAt	0,490***	0,004
"Demand" variable	*Estimate*	*Pr(>|t|)*
PCGDPot	0,843***	0
"Frictions" variable	*Estimate*	*Pr(>|t|)*
DISTo	-2,833***	0
WEATHERo	-0,231**	0,001
BORDo	0,998***	0
Constant	6,967***	0
R-squared (R^2)	0,409	

IV. CONCLUSION

The main aim of this paper was the investigation of some of the most relevant demand factors of international tourism in Albania. We formulated and estimated a simple gravity model, considering some standard independent variables. According to the empirical results, all the parameters were statistically significant, and the adjusted R-squared value was satisfactory.

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