

## TOURISM ECONOMIC IMPACT: A CORRELATION BETWEEN THE ECONOMIC GROWTH AND THE NUMBER OF ACCOMMODATION NIGHTS

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### **Abstract**

*Sustainable economic development is a constant concern of governments all over the world. Therefore, it is very important to identify the factors and ways to increase the macroeconomic performance indicators. Tourism is one of the sectors of the national economy that can stimulate the growth of the Gross Domestic Product, especially since this sector involves the combined effort of several branches and generates significant positive economic effects as an efficient source of economic prosperity.*

*In order to study the impact of tourism on the economic development of Romania, we performed a regression analysis, considering the number of accommodation nights as an independent variable and the Gross Domestic Product growth rate as a dependent variable.*

**Keywords:** *economic development, tourism development, regression.*

**JEL classification:** *C25, F43, Z32*

### **1. Introduction**

Relatively recently included among the modern man's consumption needs and quantified as an indicator of life quality, tourism fully deserves the importance given today by the specialists in economics and the administrations of regions with prerequisites for its practice.

The multitude of interdependencies in the world economy, as well as the current technology that, by compressing space and time, brings civilizations and peoples closer together, creates a special and widely recognized status for tourism: it is an extremely advantageous source for many states to cover their currency needs [3], it provides the ecosystem opportunities for restoration and even improvement, and, last but not least, it supports the culture and traditions of various peoples, spreading them around the world under the impetus of appreciation and mutual respect [4].

The economic development, the development of trade between the countries of the world, the globalization of the world economy, the reduction of trade barriers, the stimulation of investment in tourism, the state policies of encouraging tourism and the technological progress in transport are factors that favored the tourism movement.

### **2. The place of tourism in Romania's economic development**

In recent decades, the modern economies worldwide have given way to the development of services. The economic changes related to the process of depletion of energy and industrial resources and the increasing environmental pollution have led to an increasing attention to tourism development.

The world tourism market has entered a new phase of its evolution, through the maturing of the tourist as a consumer, but also of the specific industry, appreciated as the most voluminous branch in the world [8].

Regarded as a distinct economic sector, tourism includes a wide range of services. The tourist performance results from the combined effort of several branches.

Tourism has a considerable impact on the economic and social environment of different regions and regions. Its action is manifested by a multitude of plans, from stimulating economic growth to improving the social structure, from the superior valorisation of natural-material resources to improving living conditions [7].

But tourism has not only an economic and social dimension, but also an environmental, cultural and technological one [9].

What makes a tourism destination truly competitive is its ability to increase tourism expenditure, to increasingly attract visitors while providing them with satisfying, memorable experiences, and to do so in a profitable way, while enhancing the well-being of destination residents and preserving the natural capital of the destination for future generations [2].

The tourism has a direct and indirect impact on the national and global economy. Its direct impact is through GDP as well as on the employment [6]. Indirect effects are shown through multiplicative effect on other economic sectors connected to tourism and accommodation [5].

On the whole of a national economy, tourism determines a specific demand for goods and services, a demand that leads to an increase of their production [1]. Also, the tourist demand determines an adaptation of the offer, which materializes in the development of tourist structures and, indirectly, the production stimulation of participating branches.

As an activity that satisfy personal requirements, tourism comes prior to final consumption, with significant economic effects. Moreover, through its role - to respond to human needs, in particular to participate in the restoration of work capacity, tourism contributes to the production of national income [11]. National income comes not only from tourist food and transport, but also from accommodation.

The foreign exchange contribution of international tourism is of great importance for a country's economy since it contributes to balancing the balance of payments. The activity of capitalizing on material, financial and human resources through international tourism is much more advantageous than the export of goods [3]. Services related to international tourism have the same impact on the world economic circuit as world imports or exports. International tourism gives rise to activities that are recorded in the current account and in the capital account. Tourism operations influence both credit and debit, trade balance, service balance and capital balance [13].

Regerded from another angle, the contribution of tourism in national income is also important because its specific activities do not exhaust the resources it uses. In addition, tourism envisages the use of otherwise untapped natural resources, the additional exploitation of some of those that fall within the scope of other areas, as well as the use of creations made for other purposes [12].

Because tourism is a multidisciplinary activity that involves several industries and draws upon a variety of skills, its benefits are spread over a wider section of society comparatively to other sectors of the economy [10].

### **3. Research methodology**

In researching the contribution of tourism in economic growth, we analyzed the data series from 2009 to 2019. Therefore, we considered that the number of accommodation nights is the independent variable and the Gross Domestic Product growth rate is the dependent variable. The two data sets were interpreted both in terms of chronological evolution and correlation between the two mentioned indicators. We used a regression model to investigate the empirical relationship between the two variables and the Data Analysis section of Excel to interpret the results. The method allows the estimation of the coefficients of a linear model by the least squares method and the calculation of the statistics necessary for the associated statistical tests. To estimate the model parameters we used 11 observations on the variables in the model. The statistical data we used are those provided by EUROSTAT.

#### 4. Results

An economic branch of interference, of great interest and with important availabilities, the Romanian tourism must become a dynamizing component of the global economic system. Subsystem of the national economy, tourism is influenced by other subsystems and exerts, in turn, a growing influence on their evolution. Although the Romanian tourism sector currently counts for a modest share of GDP, its ability to become a key sector of the national economy is unanimously recognized, if the national objectives in this area are met.

Tourism is one of the sectors that has sustained economic growth over the last 10 years. Romania can be included among the attractive tourist destinations of Europe and world, provided that the quality and diversification of tourist services are increased. After the economic crisis from 2007 to 2010, which negatively affected the evolution of the national economy in the first part of the analyzed period, and given the background of tourism increase, the Romanian economy registered economic growth rates between 2% and over 7% per year, while the number of accommodation nights increased from about 16 million in 2010 to over 29 million in 2019 (Table no. 1).

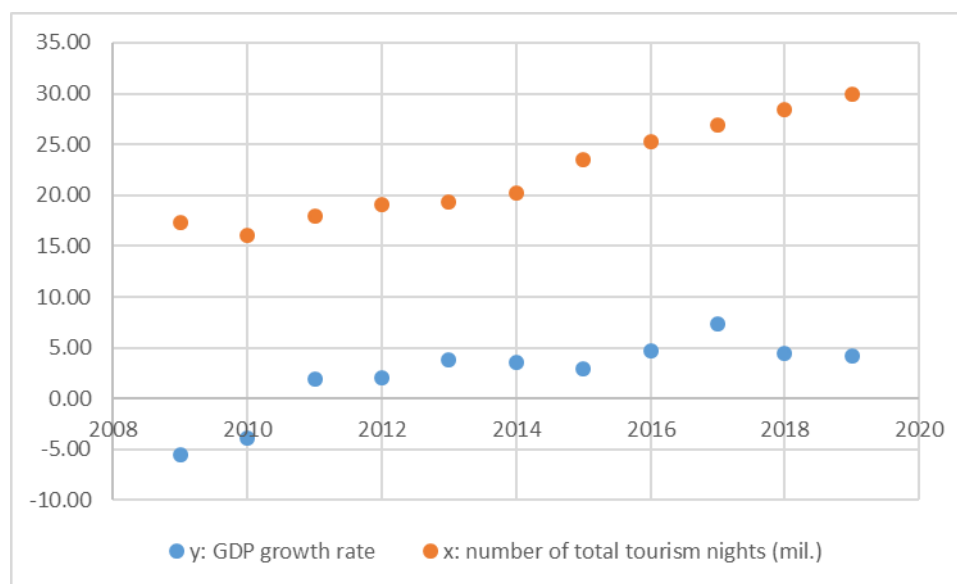
**Table no. 1. GDP growth rate and accommodation nights in Romania, between 2009 and 2019**

Year	y: GDP growth rate	x: number of accommodation nights (mil.)
2009	-5.52	17.325
2010	-3.90	16.051
2011	1.91	17.979
2012	2.04	19.091
2013	3.77	19.301
2014	3.61	20.230
2015	2.95	23.445
2016	4.70	25.274
2017	7.32	26.915
2018	4.47	28.461
2019	4.19	29.889

Source: based on data from: <https://ec.europa.eu/eurostat/data/database>

To analyze the connection between the two indicators mentioned above, we developed an econometric regression model that used the Gross Domestic Product as a dependent variable (resultant) and the number of nights spent by tourists in accommodation units as an explanatory variable (factorial). Thus, we found how the change in the number of overnight stays in our country led to the change in the same direction of the value of the Gross Domestic Product.

The type of model that can be actually used was identified through the graphic process. Based on this representation, we considered that a linear regression model can successfully highlight the link between the analyzed indicators.



**Figure no. 1. Correlogram between the GDP growth rate and the number of accommodation nights in Romania, for the period 2009-2019**

Source: own processing of data

To analyze the correlation between tourism and economy we calculated the impact of rising number of accommodation nights on GDP growth using the regression analysis.

The linear form of the equation is:

$$y = a + bx$$

where:

- parameter a = a coefficient that shows the value of the dependent variable;
- parameter b = the regression coefficient, showing how much the dependent variable changes on average if the independent variable varies by one;
- x = the number of accommodation nights (in millions);
- y = the GDP growth rate (%);
- R = the coefficient of correlation (the correlation between the independent variable and the dependent variable);
- R<sup>2</sup> = the coefficient of determination (the correlation between the independent variable and the dependent variable).
- F = the statistical significance.

Using Data Analysis section of Excel, the following results were obtained.

**Table no. 2. Summary output of regression statistics**

<i>Regression statistics</i>					
Multiple R	0.72155842				
R Square	0.52064655				
Adjusted R Square	0.46738505				
Standard error	2.76313520				
Observations	11				
<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	74.63351807	74.63351807	9.7752898	0.012189349
Residual	9	68.71424557	7.634916174		
Total	10	143.3477636			

Source: calculated using Data Analysis section of Excel

The data in the table above show that the regression model is statistically relevant, the value of the F-statistical test being 0.012189, much lower than the significance threshold of 0.05. We can also note that the correlation coefficient R is 0.721, and the values of tests R<sup>2</sup> (0.520) and adjusted R<sup>2</sup> (0.467) are less than 1, indicating an average correlation between the two indicators. Therefore the chosen regression model is a correct one and can be used successfully in economic analyses.

**Table no. 3. Regression analysis of the GDP growth rate and the accommodation nights**

	<i>Coefficients</i>	<i>Standard error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-1.023325457	0.4101148777	-2.49522	0.0341286
X Variable 1	0.056609786	0.0181061742	3.126546	0.0121893

Source: calculated using Data Analysis section of Excel

Based on the variables resulting from the use of the computer program, we obtained the regression model:

$$y = - 1,0233 + 0.0566x$$

If the number of accommodation nights increases by 1 million, the GDP growth rate will increase by 0.0566%. If the number of accommodation nights is 0, the rate of GDP growth/reduction will be – 1.0233 %.

## 5. Conclusions

Although there is an obvious link between the two indicators, the data indicating an average correlation, and free term has a high value compared to the coefficient of the independent variable, there are many other factors that can influence the evolution of Romania's Gross Domestic Product. Therefore we consider that the model can be improved. It is obvious that the Gross Domestic Product is influenced by the evolution of the number of nights spent by tourists in accommodation units and that the tourism sector as a whole has a significant, direct and indirect contribution to the economic growth of a country.

The share of the service sector in the gross domestic product has increased significantly since the second half of the twentieth century and tourism, as a service activity, has become a key sector for the economies of many countries in the world. Tourism has a direct and indirect impact on the national economy. Its direct effects can be noticed in the Gross Domestic Product increase and employment. The indirect impact is manifested by the multiplier effect on other sectors of the national economy.

The key conclusion of this paper is that there is a positive impact of tourism on Romania's economic growth. Therefore, the decision-makers should focus on promoting tourism, given the potential of this sector for the national economy.

## 6. References

- [1] **Brau, R., Lanza, A., Pigliaru, F.** – How Fast are Small Tourism Countries Growing? The 1980-2003 Evidence, SSRN Electronic Journal, 2007.
- [2] **Brent Ritchie, J.R., Crouch, G.** – The Competitive Destination: a Sustainable Tourism Perspective, Cabi Publishing, Cambridge, 2003.
- [3] **Ekanayake, E., Long, A.E.** – Tourism Development and Economic Growth in Developing Countries, Int. J. Bus. Financ. Res. 2012, 6.
- [4] **Hall, D., Richards, G.** – The Community: A Sustainable Concept in tourism Development, Tourism and Sustainable Community Development; Routledge: London, UK, 2002.
- [5] **Kovačević, D.** – Economic Impact of COVID-19 on The European Tourism Sector with Special View on Croatian Tourism, Modern Economy, 2020, 11.
- [6] **Manzoor, F., Wei, L., Asif, M., Zia, M., Rehman, H.** – The Contribution of Sustainable Tourism to Economic Growth and Employment in Pakistan, International Journal of Environmental Research and Public Health, 2019, 16.
- [7] **Nițescu, A.** – The Role and Importance of Capitalizing on Tourism Potential at Local Community Level, Annals of the „Constantin Brâncuși” University of Târgu Jiu, Economy Series, Issue 5/2018.
- [8] **Platon, N.** – Internationalization of Tourism Services and Products in The Context of Globalization, Annals of the „Constantin Brâncuși” University of Târgu Jiu, Economy Series, Special Issue 2018.
- [9] **Sanda, G.** – How to Make a Destination More Competitive in Tourism, Annals of the „Constantin Brâncuși” University of Târgu Jiu, Economy Series, Issue 2/2016.
- [10] **Telce, Y.H., Schroenn, J.L.** – The Contribution of HRD to Tourism-Led Development in an African Context, South Africa Journal of Economics and Management Sciences, 2006, vol. 9, no. 4.
- [11] **Tohid, A.** – Economic Impacts of Tourism Industry. International Journal of Business and Management, 2011, 6(8).
- [12] **Stănciulescu, G.** – Managementul turismului durabil în țările riverane Mării Negre, ALL Beck, Bucharest, 2000.
- [13] **Vellas, F., Bécherel, L.** – International Tourism, MacMillan Press Ltd., 1995.
- [14] \*\*\* **European Commission** – Eurostat Databases, 2022.