

ANALYSIS OF THE RELATIONSHIP BETWEEN GROSS DOMESTIC PRODUCT PER CAPITA AND POPULATION EMPLOYED IN HOTELS AND RESTAURANTS IN ROMANIA

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Abstract

At present, the tourism industry is not one of the strategic domestic industries of the Romanian economy. Accounting for 3-3,5% of GDP, tourism doesn't have a significant impact on the country's economic and social welfare or on the environment. However, we can argue that tourism accounts for a larger share of GDP, since figures do not take into account business or special interest tourism, or other additional industries. We believe that tourism can be sustainable only if it conveys positive effects on the development of an area, region or country, while the defining objectives that can be drawn from here are that: tourism helps strengthen and diversify the economy, provides local inhabitants with substantial benefits, focuses on long term prosperity instead of short term benefits and can avert the collateral effects that are harmful for the domestic, regional or local economy. One of the priority objectives of the national strategy in the field of tourism is increasing the employment rate in the tourism industry, as this proves to be an important factor that contributes to an increased quality of live and particularly augments the role of the tourism industry in the development of GDP.

Key words: *structure of the population, tourism industry, domestic economy, quality of tourism activities*

JEL Classification: *J11*

I. INTRODUCTION

The main positive effects directly generated by tourism are the gross added value, increased production, increased employment of the workforce, the currency transfer of certain material and human resources that cannot be used in the actual production cycle. The indirect effects mainly consist in: indirect jobs created in other industries through the development of the tourism sector, increased indirect income and indirect product generated in other industries, increased investments in other economic activities and the additional income they gain by promoting the tourism potential of an area and by encouraging traveling, effects in terms of healthcare, reinforced working capacity of the human resources and effects in terms of balanced territorial development due to the shifts in tourism flows.

All the member states of the EU have gradually adopted and harmonized their regulations, in compliance with the directives of the **European System of Accounts (ESA)**, thus ensuring the methodological similarity required by regional indicators with reference to the territorial hierarchy units within the EU. The **ESA** is the equivalent of the **National Accounts System in Romania (NAS)**, as a complex algorithm of accounting, statistics and macroeconomic analysis used as a fundamental instrument for economic outcomes, as well as a major

decision making tool in the economic strategies of countries having a market economy. The **National Accounts System (NAS)** – a well known statistical and accounting management system, a coherent, quantitative, aggregate, simplified and definite collection of accounts and tables that organize the elements needed to calculate macroeconomic indicators (the essential one being the Gross Domestic Product (GDP)).

According to the ESA, the statistical data on the GDP type of results, are relevant during most of the specific assessments of the regional/territorial indicators, allow for comparisons, rankings, analyses and interpretations of social cohesion, sustainable or human development, etc.

According to the research conducted by the World Tourism Organization, the effects of tourism on the economy can be divided into three categories:

- effects on the global development strategy of a country (region) or global effects;
- partial effects on the domestic economy, i.e. on business entities, industries variables and fundamental macroeconomic aspects of the economy;
- external effects, manifested in the social and cultural environment, as well as in the physical and human resources aspects, with indirect economic outcomes.

The existence of a relationship between employment growth and GDP is explained by the

firms who look to increase production and it is probably to do so by making more use of its current employees. It is only when it is clear that the increase in production will continue that extra employees will be taken on. This lag reflects costs of training, incorporating new employees into a firm and the time it takes to employ extra people. The reverse is also true when a fall in production occurs. It is only when such a fall is considered more permanent that shedding of labor would occur (Australian Bureau of Statistics, 2006).

As W. Seyfried observes, economic growth has a positive and significant impact on employment growth, but some of the effects take a few quarters to be fully felt. Once employment growth begins to accelerate, it takes on a momentum of its own. Once this occurs, the combination of economic growth and employment persistence should result in more substantial and sustained gains in employment (Seyfried, 2011).

Tourism has an indirect economic impact that affects GDP, employment and certain sectors. Countries which experienced significant recovery in 2010 took advantage of surging tourism demand, both domestic and international, to buttress the growth of

all their economies (Vellas, 2011).

The role and input of tourism in the development of the domestic economy can be determined by means of a system of indicators, of which we can mention: the ratio of tourism expenses to the total consumption expenses, the ratio of the tourism staff to the total economically active population, the share of the revenue generated by tourism in the net domestic product or in the GDP, the share of tourism in the export of goods and the ratio of tourism expenses in the import of goods.

II.EMPLOYMENT STRUCTURE IN HOTELS AND RESTAURANTS, AT TERRITORIAL LEVEL

One of the indicators analyzed in the present research and based on which one can determine the role of tourism in the economy of a country is the population employed in hotels and restaurants.

The population employed in hotels and restaurants per development region in 2010 is presented in table 1.

Table 1. Population employed in hotels and restaurants per development region in 2010

DEVELOPMENT REGION	ECONOMY TOTAL (THOUSAND PERSONS)	HOTELS AND RESTAURANTS	
		(thousand persons)	%
North - West	1153,7	17,30	13,00
Center	1001,8	21,50	16,15
North - East	1207,2	14,80	11,12
South - East	994,9	16,90	12,70
South - Muntenia	1154,8	13,40	10,07
Bucharest - Ilfov	1214,8	26,00	19,53
South - West Oltenia	832,8	9,70	7,29
West	811,3	13,50	10,14
TOTAL	8371,3	133,10	100,00

Source: Romanian Statistical Yearbook, INS, Edition 2012, Bucharest

Note that the Bucharest-Ilfov region accounts for about one quarter of the population employed in hotels and restaurants, i.e. a percentage of 19,53%. The second place is held by the Center region with a ratio of 16,15%, followed by the North-West region. The South-West Oltenia region is on the last place, accounting for only 7,29% of the total population employed in hotels and restaurants in Romania.

The input of each development region to the population employed in hotels and restaurants is presented in Fig.1.

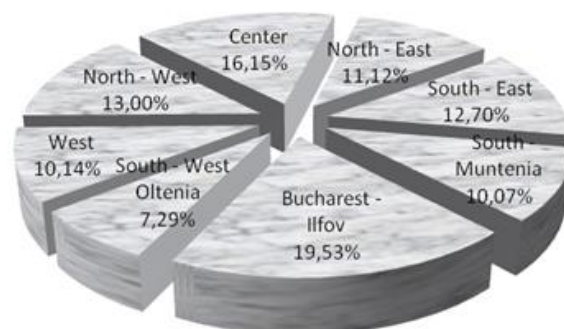


Figure 1. Population employed in hotels and restaurants, per development region in 2010

In order to have a more comprehensive view on the involvement of the economically active population in the field of tourism, one should determine the ratio of the population employed in hotels and restaurants

to the total of the employed population per each development region. In 2010, the Center Region accounted for 2,15% of the population employed in the activities developed by hotels and restaurants. The ratio of the population employed in hotels and

restaurants in the Bucharest-Ilfov region was of 2,14% to the total population employed in the activities of the domestic economy, according to CAEN rev.2 on a regional level, as shown in Figure 2.

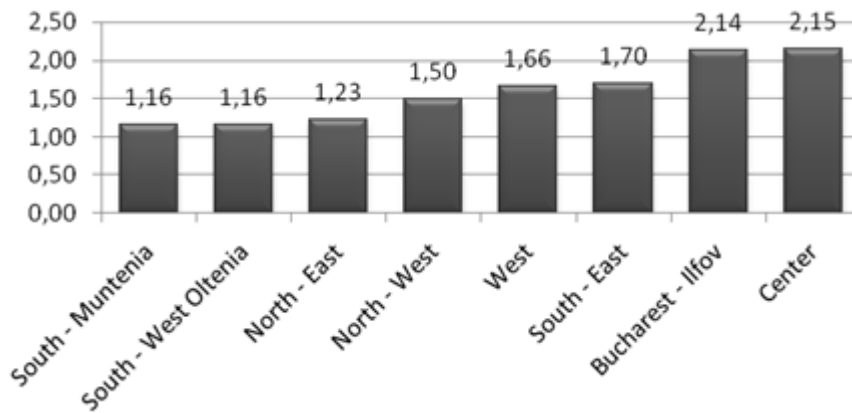


Figure 2. Ratio of the civil population employed in hotels and restaurants in Romania, per each development region, in 2010

Source: developed by the authors based on the data provided by Romanian Statistical Yearbook, INS, Edition 2012, Bucharest

The lowest values are recorded in the North-East region, with 1,23% of the employed population, followed by the South Muntenia and South-West Oltenia regions, which account for only 1,16%.

III. THE EMPLOYMENT IN HOTELS AND RESTAURANTS AND GDP RELATIONSHIP

The influence of tourism on the development level of a country, region or area can be analyzed based on the relationship between the population employed in hotels and restaurants and the GDP per capita. The parallel sets of data for the year 2010 on the Regional gross domestic product and the

population employed in hotels and restaurants per each development region presented in Fig. 3 reveal the fact that the two variables are correlated. The lowest GDP per capita is recorded in the South-West Oltenia region, which is also the region with the lowest number of the population employed in hotels and restaurants. With a GDP of 9981million Euros, the South-West Oltenia region has a population of only 9700 persons employed in hotels and restaurants. The Bucharest-Ilfov region has the highest regional gross domestic product (31144 million Euros) but also has the highest number of population employed in tourism activities (26000 persons).

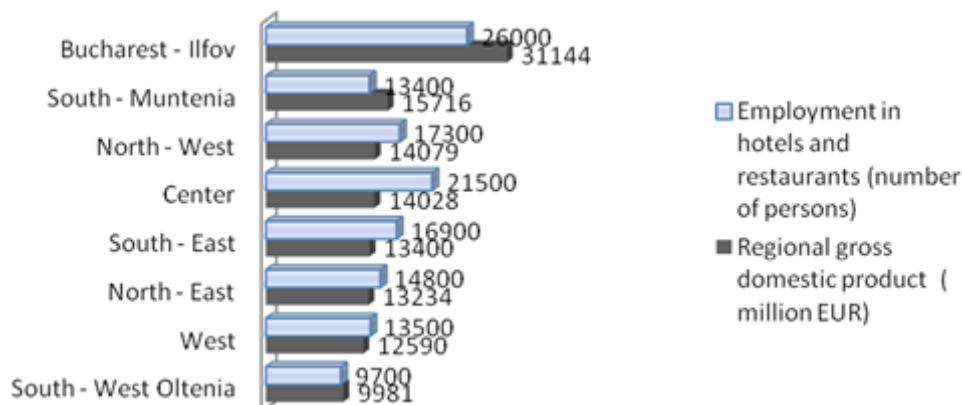


Figure 3. Population employed in hotels and restaurants and Regional gross domestic product, in Romania, in 2010

Source: developed by the authors based on the data

<http://epp.eurostat.ec.europa.eu/tgm/download.do?tab=table&plugin=1&language=en&pcode=tgs00005>

A comparison with the average GDP/capita recorded in the EU in 2010 per each development region reveals the fact that the North-East region accounted for only 29% of the average, while the Bucharest-Ilfov region exceeded the EU average by 11%.

A county based analysis of the relationship between the population employed in hotels and restaurants and the GDP/capita, using the regression model, reveals that there is a direct and linear connection between the two variables:

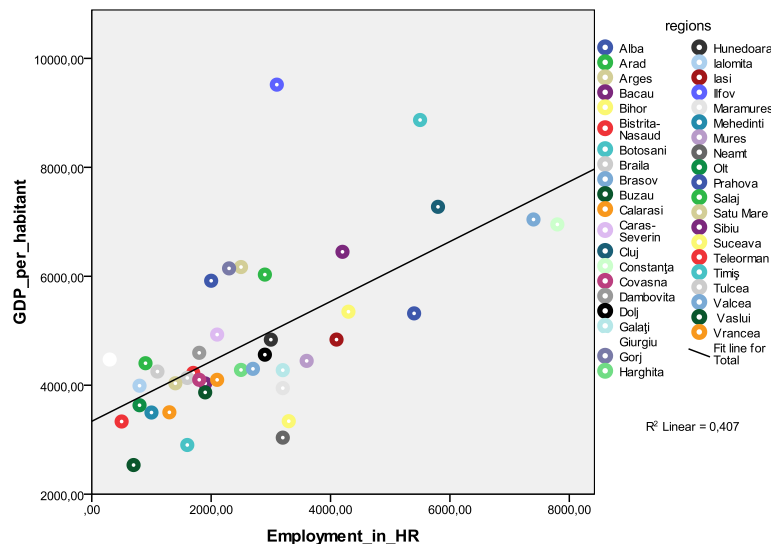


Figure 4 Distribution of counties in Romania in terms of the population employed in hotels and restaurants and the GDP per capita in 2010

The population employed in hotels and restaurants influences the size of the GDP/capita - as presented in the Figure 6.

X - independent variable
Y - the dependent variable.

A linear regression line has an equation of the form:

$$Y = a + bX,$$

where:

The calculations conducted with the SPSS 17 program and by using the **linear regression** model, have resulted in the following parameters a = 3473,249 and b =0,497.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3338,101	340,192		9,812	0,000
	Employment_in_HR	0,550	0,106	0,638	5,173	0,000

a. Dependent Variable: GDP_per_habitant

The calculated coefficients are statistically significant. Therefore, the specified analysis model is correct.

restaurants is a significant factor, influencing the variation of the GDP only by a ratio of 40,7%. Apart from the number of persons employed in tourism activities, there are also other factors that may influence the size of the GDP for each county.

The regression function becomes:

$$y=3338,249+0,550*X .$$

The coefficient of determination shows that the number of individuals employed in hotels and

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,638 ^a	0,407	0,392	1182,59053

a. Predictors: (Constant), Employment_in_HR

The factors that might influence the relationship between GDP and employment are probably the nature of the labor market and the skills sets of recently employed people.

In order to establish the strength of the relationship between the variables of the population employed in hotels and restaurants, one can determine the correlation coefficient, with a value of $r_{y/x} = 0,638$, which indicates a strong relationship between the two variables.

Employment in HR	Pearson Correlation	1	0,638**
	Sig. (2-tailed)		0,000
	N	41	41
GDP per habitant	Pearson Correlation	0,638**	1
	Sig. (2-tailed)	0,000	
	N	41	41

** . Correlation is significant at the 0.01 level (2-tailed).

By testing the significance of the linear correlation coefficient, one can ascertain that it is statistically significant.

Correlations

	Employment in HR	GDP per habitant
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ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37421002,997	1	37421002,997	26,758	,000 ^a
	Residual	54542293,784	39	1398520,353		
	Total	91963296,780	40			

a. Predictors: (Constant), Employment_in_HR

b. Dependent Variable: GDP_per_habitant

The predictable values for the GDP per capita in terms of territorial unit and based on the linear

regression model, ranges between 3503,04 euro/habitant and 7626,74 euro/habitant.

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3503,0486	7626,7471	4815,9268	967,22545	41
Residual	-2059,54517	4475,43750	,00000	1167,71458	41
Std. Predicted Value	-1,357	2,906	,000	1,000	41
Std. Residual	-1,742	3,784	,000	,987	41

a. Dependent Variable: GDP_per_habitant

After a thorough analysis of the results, certain practical conclusions can be drawn in terms of the dependence that exists between the value of the GDP per capita and the population employed in hotels and restaurants.

There is a probability that the model is correct (approximately 40%), based on the values calculated by means of the program SPSS 17, for calculating the determination report R – squared (0,407) and Adjusted R –squared (0,392). The accuracy of the linear

regression model is ascertained by comparing the calculated values of the statistical F test (26,758) with the table values which are lower.

Thus, one can establish that the regression model that describes the correlation between the size of the population employed in hotels and restaurants and the value of the GDP per capita is an accurate one and can be used when forecasting the evolution of the macroeconomic indicator.

IV. CONCLUSIONS

A wide range of methods, including both intuitive and other complex mathematical models that have also been used in this research, are employed in order to estimate the economic impact of tourism. Acknowledging and understanding the concept of economic impact, the means used to measure it, its benefits and incurred costs is highly important for scientists and researchers of the tourism sector.

Even though tourism contributes significantly to the GDP, it also plays an important part in the creation of added value. The increased employment of active labour, intelligence and creativity in tourism contribute to the creation of added value to a greater extent than other sectors that may resemble it in terms of development.

Rigorous management measures can help turn tourism into a real lever of economic development on a national and especially on a local level, through the multiple implications it may have on the capitalization of the natural and antropoc potential, on the introduction of tourism resources in the economic circuit, on the use and capitalization of the infrastructure as well as on the development of the other sectors of the domestic economy. The economic impact analyses provide tangible interpretations of the economic interdependencies and a better understanding of the role and importance of tourism in the economy of each region. Tourism activities also involve economic costs, including the direct costs related to tourism business activities, government costs related to the infrastructure that enables a better development of tourism activities, as well as those costs related to congestion and the additional costs incurred by the individuals of each community.

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