ANALYSIS OF ACCOMMODATION DEMAND/OFFER IN ROMANIA'S TOURISM

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Abstract

The paper aimed to analyze the accommodation demand/offer in Romania's tourism using the empirical data provided by the National Institute of Statistics for the period 2007-2015. In 2015, tourists' arrivals accounted for 9,9 million, of which 22.5 % foreigners' arrivals. The total arrivals increased by 42 % in the analyzed period having a good impact on tourist density which reached 500 arrivals per inhabitant and 32 arrivals per square km. In 2015, the number of overnight stays accounted for 23,519 thousands, of which 19 % belonged to the foreign tourists. The economic crisis had a bad impact on the number of arrivals, and overnight stays in the years 2009and 2010. Romania has 6.821 establishments units with accommodation facilities for tourists and 328,000 beds, meaning by 45 % and, respectively by 15 % more than in 2007. As a result, in 2015, the beds-days increased by 43 %, accounting for 81,872 thousand, and the tourism function of Romania reached 1,650 places (beds) per 1,000 inhabitants. Tourists' arrivals have a positive impact on overnight stays proved by the strong position correlation existing between these two indicators, r = 0.849, and by the determination coefficient, $R^2 = 0.7215$, which proved that 72.15 % of the variation in overnight stays is determined by the variation of the number of tourists' arrivals. The accommodation offer has been improved year by year to satisfy better tourists' demand, but the seasonality of arrivals has causes the low degree of occupancy. The business in tourism should be focused much more on a better promotion of Romania's tourism offer and on the assurance of a higher quality of services to face the strong competition among countries to attract more tourists.

Key words: *accommodation, demand, offer, tourism, Romania*

INTRODUCTION

During the last decades, tourism has become one of the fastest growing economic branches in the world economy with a deep impact on the socio-economic progress.

Tourism business has surpassed oil exports, food products or automobiles, playing a major role in international commerce, and being an important source of income for many countries.

In 2015, international tourists' arrivals accounted for 1,184 million and generated USD 1.5 trillion in export earnings. At world level, tourism contributes by 10 % to GDP and 1/10 jobs, it contributes by USD 1.4 trillion to exports, representing 7 % of the world exports and 30 % of the service exports.

The hospitality industry includes a large variety of services such as: lodging, event planning, theme parks, transportation, cruise lines etc. Hotels and other types of lodging units, restaurants, amusement parks and the related personnel etc are involved in the maximization of customers and their satisfaction. The quality of tourism offer assures the growth of tourists flows and revenues [13].

In the EU tourism there are 610 thousand establishments which offer more than 31 million bed places [4].

In the EU-28, the number of nights spent in tourist accommodation reached 2.9 billion overnight stays being by 3.6 % higher than in 2015. Hotels and similar accommodation units are the most preferred (65%), followed by holiday and short stay units such as rented apartments (22%) and camping grounds and recreational vehicle parks (13%).

The number of overnight stays in hotels increased by 3.5 %, and in holiday and other short-stay accommodation also increased by

3.5 %. This was due to the growth of the overnights spent by foreign visitors (+4.7 %) but also of the nights spent by the resident tourists (+1.7 %).

The establishments of touristic reception with functions of tourist accommodation had registered a continuous upward trend in the last decades in Romania [1].

Increasing the total number of tourists and also of foreign tourists, the existence of various accommodation facilities such as hotels, guesthouses urban and rural houses, accommodation capacity being well developed mainly in the capital and the municipalities residence of counties.

The most preferred types of accommodation units are hotels (63.0%), rural guesthouses (27%) and rural houses (21.4%). Foreign tourists usually prefer 4 and 5 stars hotels, and rural guest houses as well [8].

Supply of facilities accommodation is a condition for tourism development and must cover tourist demand. Lodging industry is closely developing in relation to the trends in tourist arrivals [11].

The quality of tourism services within the Romanian accommodation structures is very important to improve the number of tourists arrivals and increase the degree of satisfaction and safety [7].

The number of stays in accommodation units varies by category of comfort, between foreign and Romanian tourists. The large majority of tourists stayed in the establishments of touristic reception of 3 stars comfort, and an increased number of the overnight stays was recorded in the 3 flowers category of comfort in agro-touristic guesthouses [14].

The dispersion in the territory of the accommodation capacity in terms of units and beds, the net usage the accommodation capacity and infrastructure is not yet a corresponding one, reflecting a poor correlation between the services' supply and tourists' demand [3].

The average accommodation capacity has increased, but it is still a lack of additional services and employees especially in hotels, and a poor infrastructure mainly access roads, with a negative influence on investors [6].

In this context, the paper aimed to study the accommodation demand/offer in Romania tourism using the empirical data provided by the National Institute of Statistics for the period 2007-2015. Important aspects such as tourists arrivals, overnight stays, tourist density, establishments in tourism with accommodation function in operation, number of places, number of beds-days, tourism function of the country and the capacity use rate have been approached to analyze the trends and if the actual capacity of accommodation is satisfactory in relation to tourists arrivals and which are the relationships of determination between these indicators.

MATERIALS AND METHODS

The Study area.
Romania is situated in the Central and Southeastern Europe, being the 12th largest country with 238,391 sq. km surface, and a population of 19,334,000 (October 2016). The varied relief is like an amphitheater with mountains, hills and plains, and exit to the Black Sea, and a temperate continental climate with four distinct seasons.

Romania's mountains are a great destination for the tourists loving: climbing, hiking, biking and river-rafting, or skiing.

The Danube River forms a part of the South Western and South frontier along of 1,864 miles and ends forming the well known The Danube Delta which is an UNESCO Biosphere Reservation, a protected wetland and natural habitat for rare species of plants and animals [12].

Romania has about 275 km of seashore at the Black Sea, full of wonderful resorts with elegant hotels, sandy beaches and pleasant seawater which attract tourists May until September [2].

Romania has a rich hydrographic basin consisting of the rivers' net, of which 98% have the springs in the Carpathian Mountains, where the upper streams are spectacular (numerous gorges, caves and precipices). Romania has around 3,500 lakes among which it deserves to be mentioned the lagoons and coastal lakes on the Black Sea shore, the glacial lakes in the

Carpathian Mountains, and also a volcanic lake.

Romania has a large variety of flora and fauna, including over 3,700 species of plants and 33,792 species of animals. Romania has important soil and mineral resources such as a fertile agricultural land, suitable for cereals and technical crops, forages etc, and also vineyards and orchards, pastures and meadows, oil, natural gas, coal, iron and non-ferrous metals, salt, and gold [5].

The main tourist attractions are the Black Sea resorts, the castles and fortresses, the Danube Delta, the medieval towns, the Carpathian Mountains, the Monasteries, the traditional villages, the Spas, the World Heritage sites, the arts and crafts, the Danube River cruises, the Dracula legend, the festivals and events, traditional food and wines, traditions and folklore.

Bucharest, the capital and many other cities like Brasov, Sibiu, Constanta, Cluj-Napoca, Timisoara, Iasi, Oradea, etc. are of high interest for more and more foreign tourists.

Tourism and travel impact.

The direct contribution of Travel & Tourism to GDP in 2014 was RON 10.7 billion, representing 1.6% of GDP, coming from the economic activity run in tourism industry: hotels, travel agents, airlines and other passenger transportation services, restaurant and leisure industries. The direct contribution of Travel & Tourism to GDP is expected to grow by 3.8% to RON 15.9 billion by 2025. The total contribution of travel and tourism to GDP was RON 35 billion in 2014, meaning 4.8 % of GDP. It is expected to increase to about RON 50 billion by 2025.

Travel and tourism activities generated 205,000 jobs directly in 2014 (2.4% of total employment), and by 2015 it is expected to reach 207,000 jobs. The total contribution to employment accounted for 480,000 jobs in 2014 and by 2015 it is expected to account for 490,000 (5.8 % of total employment in the economy).

The foreign visitors exports accounted for about RON 8 billion in 2014, and it expected to reach over RON 14 billion in 2025, representing about 2.5 % of the total exports [15].

The main specific indicators taken into consideration to characterize Romania's tourism related to the topic of the paper data have been the following ones:

-for accommodation demand: (i)the number of tourists arrivals, of which Romanians and foreigners, (ii) the number of overnight stays in establishments with touristic function, and (iii)the tourist density;

-for accommodation capacity or offer: (i) the number of establishments in tourism with accommodation function in operation, (ii)the number of beds (places) in touristic establishments in operation, (iii) the number of beds-days, (iv)the coefficient of the use of accommodation capacity, and (v) the tourism function of the country.

Data collection. The data were provided by the National institute of Statistics, Tempo-online Data Base for the period 2007-2015.

Methodological aspects.

The analysis is based on the time series for the last nine years represented graphically in their dynamics for all the studied indicators.

The fixed index method was used to evaluate the increase or decrease of the variables across the time series, according to the formula: $I_{FB} = (X_n / X_0) * 100$.

Also, it was used the linear regression equation, $Y = bx + a$, where Y is de dependent variable and X is the independent variable in order to reflect the relationship of determination between the following pairs of variables: (a) The regression of overnight stays depending on tourists' arrivals; (b) The regression of overnight stays depending on the accommodation capacity in operation in terms of beds-days, and (c) The regression of the number of beds depending on tourists' arrivals. The ANOVA was used for variance analysis in its components according to the degree of freedom, calculating F stat and its significance, as well as the statistical parameters a and b (intercept and x variable 1) from the regression equation, using the Excel facilities.

The Pearson correlation coefficient was also determined to characterize the relationship between these indicators.

The tourist density (TD) was computed according to the formulas:

$$TD = \frac{\text{Number of tourists' arrivals}}{\text{Population of the country}} \text{ and}$$

$$TD = \frac{\text{Number of tourists' arrivals}}{\text{The country surface}}$$

The coefficient of the use of accommodation capacity (CUAC) was calculated according to the formula [10]:

$$CUAC = \frac{\text{Number of overnight stays}}{\text{Number of beds} * \text{Number of days in operation}} * 100$$

The tourism function of the country (TF) was computed based on the formula [10]:

$$TF = \frac{\text{Accommodation capacity in terms of the number of places (beds)}}{\text{Population of the country}}$$

RESULTS AND DISCUSSIONS

Accommodation demand in terms of tourist arrivals. The number of tourist arrivals in Romania has registered a general increasing trend. In the year 2015, Romania recorded 9,930 thousand tourists by 42,42 % more than in the year 2007.
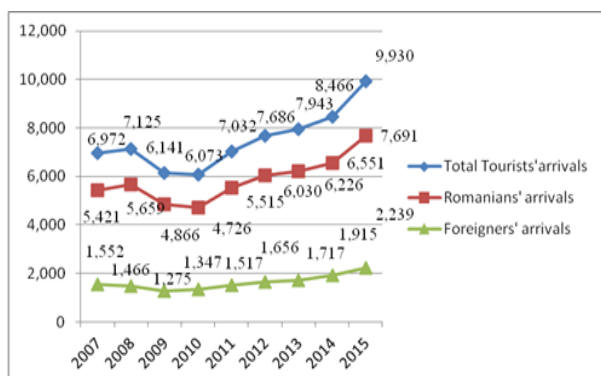

Fig.1.The evolution of the number of tourists' arrivals in Romania, 2007-2015 (Thousands)
Source: Own design based the data provided by the National Institute of Statistics, Tempo online, 2017[9].

Thus, in 2015, the number of tourist arrivals accounted for 9,930 thousands compared to 6,972 thousands in the year 2007. The number of the Romanians' tourist arrivals increased by 41.87 % from 5,421 thousands in 2007 to 7,691 thousands in 2015. At the same time, the

number of foreign tourists' arrivals increased by 44.26 % from 1,552 thousands in 2007 to 2,239 thousands in 2015(Fig.1.).
The share of foreign tourists' arrivals in the total arrivals is about 22 % and remained constant across the analyzed period.
The growth of the number of tourists was stimulated by the need of the people to use its free time in relaxation and entertainment, to travel to the desired destinations, to visit various important places of high attraction and other purposes.
Romania is a surprising and unique tourist destination with a complex geography, beautiful landscapes, a large variety of historical vestiges (castles, palaces, fortresses, fortified churches, rustic houses, archeological sites) and cultural values (monasteries, churches, cathedrals, memorial houses, monuments, art galleries, museums, rural houses, traditions and customs in terms of folk music, dances, suits, handicrafts.
The tourists' density in Romania increased by 56.25 % from 320 tourists' arrivals/ inhabitant in the year 2007 to 500 tourists' /inhabitant in the year 2015 (Table 1).

Table 1.The dynamics of tourists' density in Romania, 2007-2015

Year	Tourists' density	
	Tourists' arrivals/Inhabitant	Tourists' arrivals/square km
2007	320	29
2008	330	30
2009	280	26
2010	280	25
2011	330	29
2012	380	32
2013	400	33
2014	420	36
2015	500	42
2015/2007 (%)	156.25 %	144.82

Source: Own calculation based on the data provided by the National Institute of Statistics, Tempo on line data base, 2017 [9].

Also, tourism density increased by 44.82 % from 29 tourists/square km in the year 2007 to 42 tourists/ square km in the year 2015 (Table 1).

The inflexion regarding the number of tourists' arrivals and tourists' density in Romania in the year 2009 and 2010 was caused by the economic crisis.

Accommodation demand in terms of overnight stays. The number of overnight stays in units of accommodation for tourists has also increased by 14.20 % from 20,593 thousand overnight stays in the year 2007 to 23,519 thousand overnight stays in the year 2015. The overnight stays belonging to the Romanian tourists accounted for 19,048 thousand in the year 2015, being by 12 % higher than in the year 2007. The number of overnight stays registered by the foreign tourists increased by 24.73 % in the same period of time, from 3,586 thousands in 2007 to 4,473 thousands in 2015. The share of foreigner's overnight stays in the total number of overnight stays was 19 % in the year 2015 compared to 17.4 % in the year 2007. The decline of the number of overnight stays in the year 2008 and 2010 was determined by the reduction in the number of tourists' arrivals affected by the economic crisis (Fig.2).
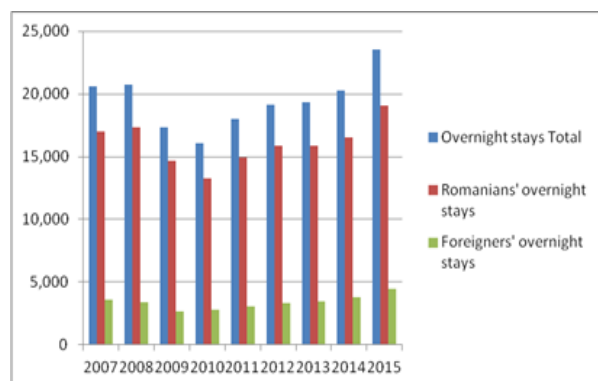

Fig.2.The evolution of the number of overnight stays in Romania's tourism, 2007-2015 (Thousands)
Source: Own design based the data provided by the National Institute of Statistics, Tempo online, 2017 [9].

The accommodation capacity in terms of the number of establishments with touristic function in operation. The endowment in tourism has been improved in order to keep pace with the tourists' requirements for accommodation. The offer of accommodation units has become larger and larger: hotels, hostels, guest houses, camping, bungalows etc in order to better satisfy tourists' requirements. Many establishments were modernized and other new touristic units with accommodation functions were built mainly in the proximity of the main tourist attractions. Thus, in 2015, in Romania there were 6,821 establishments for tourists accommodation, by 45.31 % more than in the year 2007(Fig.3.).
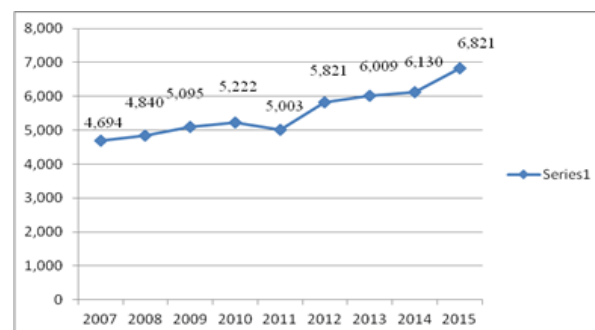

Fig.3. The evolution of the number of establishments for accommodating tourists in Romania, 2007-2015 (Thousands)
Source: Own design based the data provided by the National Institute of Statistics, Tempo online, 2017 [9].

The accommodation offer or capacity in terms of the number of beds (places) in the establishments destined for tourists. Not only **o**f the number of accommodation units has increased in the analyzed period, but also the number of rooms and beds. Thus, in 2015, Romania's tourism had an accommodation capacity of 328 thousand beds, by 15.49 % higher than in the year 2007 (Fig.4).
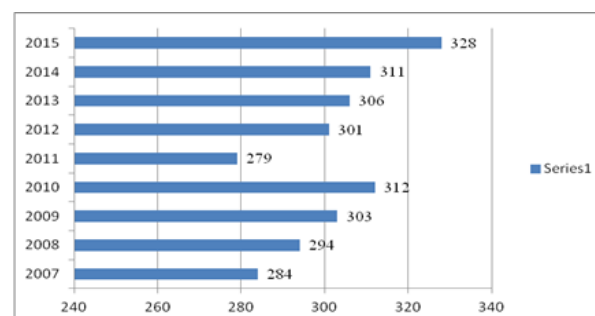

Fig.4. The evolution of the number of beds (places) in the establishments for accommodating tourists in Romania, 2007-2015 (Thousands)
Source: Own design based the data provided by the National Institute of Statistics, Tempo online, 2017 [9].

The accommodation offer in terms of the number of beds-days has grown by 43.29 % from 57,137 thousand in 2007 to 81,872 thousand in the year 2015. This was the result of the growth in the number of places and the

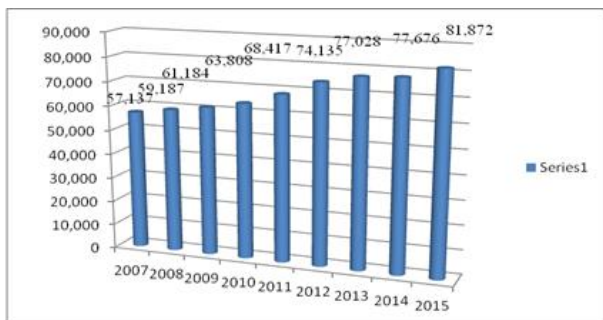number of days when the establishments operates (Fig.5).

Fig.5. The evolution of the number of beds-days in the establishments for accommodating tourists in Romania, 2007-2015 (Thousands)
Source: Own design based the data provided by the National Institute of Statistics, Tempo online, 2017 [9].

The coefficient of the use of accommodation capacity varied between 36.04 % in the year 2007 and 28.72 % in the year 2015, being positively influenced by the number of overnight stays and negatively influenced by the number of beds and Number of days in operation. The decline of about 30 % in the analyzed period was caused by the increase of beds-days in a higher rhythm compared to the growth rate of the overnight stays.(Fig.6).
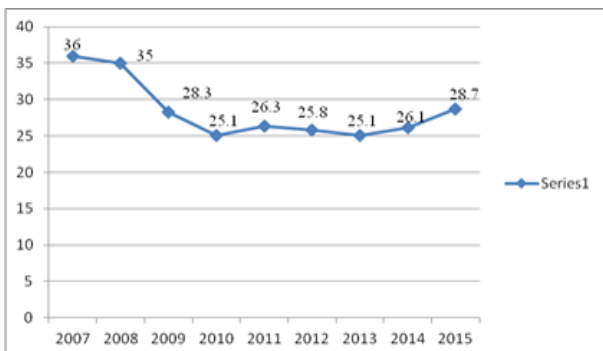

Fig.6. The evolution of the use of the accommodation capacity, Romania, 2007-2015 (%)
Source: Own design based the data provided by the National Institute of Statistics, Tempo online, 2017 [9].

The tourism function of Romania increased from 1.31 bed places/ inhabitant in the year 2007 and 1.65 places (beds)/inhabitant in the year 2015, being positively influenced by the growth of the number of places (beds), which has increased by 15.49 %, and also by the reduction of the population by 7.8 % in the analyzed period (Fig.7).
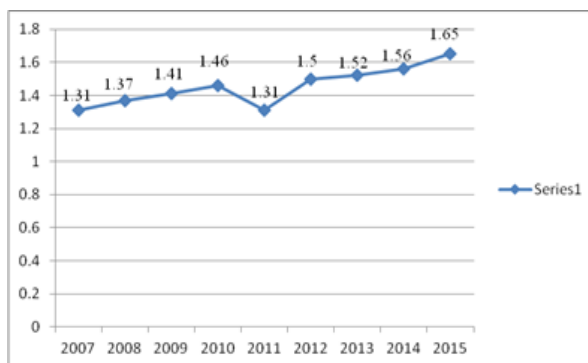

Fig.7. The evolution of the tourism function of Romania, 2007-2015 (No. of beds/inhabitant)
Source: Own design based the data provided by the National Institute of Statistics, Tempo online, 2017 [9].

The regression of overnight stays depending on tourists' arrivals is presented in Fig.6. The regression equation, $Y= 1.5482x + 7855.5$ shows that for an increase of 1,000 tourists arrivals the accommodation demand in terms of overnight stays will go up by 1,548. Taking into account the t value and the significance threshold P-value, this coefficient is statistically significant.

The value of the determination coefficient, $R^2 = 0.7215$, is a positive and strong one, reflecting a high relationship between these two indicators (Fig.8.).
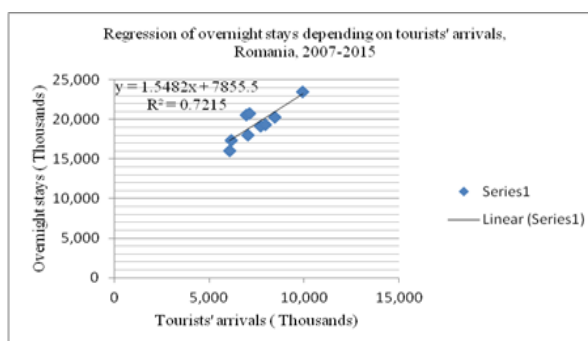

Fig.8. The regression of the overnight stays depending on tourists' arrivals in Romania, 2007-2015
Source: Own design based the data provided by the National Institute of Statistics, Tempo online, 2017 [9].

The regression of overnight stays depending on the accommodation capacity in operation in terms of beds-days is presented in Fig.9. In this case, the regression equation, $Y= 0.1011x + 12474$, reflects that for increase of the accommodation offer by 1,000 beds-days, the overnight stays with grow by 1,011, this means

not too much. The same situation is confirmed by the coefficient of determination whose value is $R^2 = 0.1745$, reflecting that only 17.45 % of the variation of overnight stays will be determined by the variation of the beds-days. The t value and the P-value reflect that the coefficient is statistically significant (Fig.9).
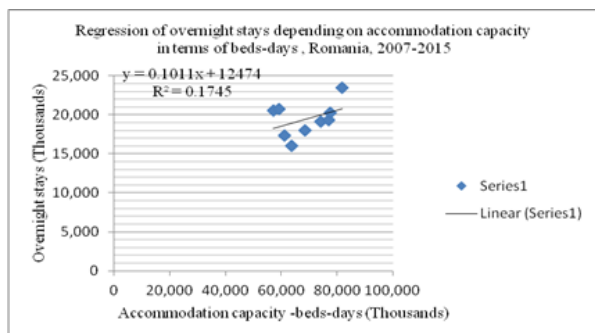

Fig.9. The regression of the overnight stays depending on the accommodation capacity in terms of beds-days in Romania, 2007-2015
Source: Own design based the data provided by the National Institute of Statistics, Tempo online, 2017 [9].

The regression of the number of beds depending on tourists' arrivals is presented in Fig.10.
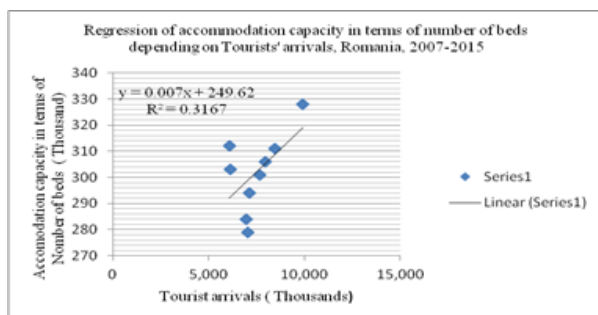

Fig.10.The regression of the accommodation capacity in terms of the number of beds depending on tourists' arrivals in Romania, 2007-2015
Source: Own design based the data provided by the National Institute of Statistics, Tempo online, 2017 [9].

The regression equation, Y= 0.007x + 249.62 shows that for increase of the number of tourists by 1,000 beds, the accommodation capacity in terms of the number of beds will remain almost stable, or the increase of 7 beds is practically non significant.
The coefficient of determination, $R^2 = 0.3167$ reflects that just 31.67 % of the variation of the accommodation capacity in terms of beds is a result of the variation in the number of tourists' arrivals. The t value and the P-value reflect

that the coefficient is statistically significant (Fig.10).

CONCLUSIONS

In Romania, the accommodation demand in terms of tourists' arrivals increased by 42.42 % in the period 2007- 2015. In 2015, the total arrivals accounted for 9,9 million, of which 22.5 % belonged to the foreign tourists.
The tourist density also increased and reached 500 tourists' arrivals /inhabitant and 42 tourists' arrivals per square km in the year 2015. As a consequence, the number of overnight stays accounted for 23,519 thousands in 2015, of which 19 % belonged to the foreign tourists.
The inflexion in the number of arrivals, tourist density and overnight stays in the year 2009 and 2010 was the result of the economic crisis.
In the year 2015, the accommodation offer in Romania accounted for 6.821 units with accommodation facilities for tourists and 328,000 beds, meaning by 45 % and, respectively by 15 % more than in 2007. As a consequence, the number of beds-days reached the performance of 81,872 thousand in 2015, by 43 % more than in 2007.
However, the coefficient of the use of accommodation capacity was only 28 % in 2015, but the tourism function of Romania increased reaching 1,650 places (beds) per 1,000 inhabitants.
The regression between the overnight stays depending on tourists arrivals reflected that an increase of 1,000 tourists arrivals, the overnight stays will go up by 1,548, due to the strong positive coefficient of correlation existing between these two indicators, and the determination coefficient, $R^2 = 0.7215$ proved that 72.15 % of the variation in overnight stays is determined by the variation of the number of tourists' arrivals.
However, the regression of the overnight stays depending on the accommodation capacity in operation in terms of beds-days showed that only 17.45 % of the variation of overnight stays was determined by the variation of the beds-days, and in case of the regression of the number of beds depending on tourists' arrivals, only 31.67 % of the variation of the

accommodation capacity in terms of beds was the determined by the variation of tourists' arrivals.

This analysis regarding the accommodation demand/offer in Romania's tourism reflected that the tourism operators have prepared a high quality and large variety of accommodation facilities for tourists.

However, the degree of occupancy is not the corresponding one due to the seasonality in tourists' arrivals, and sometimes due to the lack of correlation between the quality of tourist services and the applied tariffs, aspects which could be improved in order to face better to the strong competition among countries to attract more tourists.

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