

TRENDS OF TOURIST ARRIVALS AND OVERNIGHT STAYS IN THE MARAMURES COUNTY, ROMANIA, 2007-2016 AND FORECAST FOR 2017-2021

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Abstract

The paper analyzed the trends in the tourism of the Maramures County, an important destination both for Romanian and foreign tourist due to its beautiful landscapes, cultural heritage and well preserved traditions. The empirical data were provided by the National Institute of Statistics for the period 2007-2016. The main statistical indicators used in this study were: number of units with reception function for tourists' accommodation, number of places, tourist arrivals, overnight stays and length of stay. They were statistically analyzed by: average, standard deviation, coefficient of variation, and trend line, and also by means of Spearman and Pearson correlation and regression models between number of places and tourist arrivals, and between number of places and overnight stays. Finally, the forecast for the number of tourist arrivals and overnight stays for the period 2017-2021 was set up using the adjusted series of data and the average growth rate. In the Maramures County, the tourism offer in terms of units with accommodation function for tourist reception increased by 47.05 % and the number of places by 77.46 %, accounting for 225 tourism units and 6,451 beds in the year 2016. The tourism demand, in terms of the tourist arrivals increased by 75 %, while the overnight stays raised by 48.24 %, accounting for 189,000 persons and, respectively, 339,000 overnights stays in the year 2016. The average length of stays declined by 15.7 % from 2.11 days in 2007 to 1.78 days in 2016. The Spearman correlation coefficient reflected that between the number of places and the overnight stays it is a weak positive relationship ($r_s = 0.079$), but between the number of places and tourist arrivals it is a high and positive link ($r_s = 0.776$). The Pearson correlation proved high positive values ($r = 0.771$ and $r = 0.893$) for this pair of indicators. In the year 2021, it is expected that the number of tourist arrivals to reach 225,000 and the number of overnight stays to account for 386,860 in the Maramures county, reflecting the tourists' interest to visit this part of Romania.

Key words: tourism, offer, demand, forecast, Maramures County, Romania

INTRODUCTION

Among the areas of high interest in Romania's tourism for the European visitors there are: Transylvania region with its medieval cities and ancient castles, Bucovina region with its painted monasteries and traditional artefacts, and Maramures region are with its rural tourism and cultural heritage [15].

A visit to Maramures area is "a real lesson of history, culture and geography without teacher for the tourist willing to know its moral and spiritual values" [11].

Many of the tourist attractions are included in the UNESCO World Heritage such as: the traditional houses, the wooden carved gates,

churches and monasteries, the grain mills, the rattle spindle, the seal engraver, the folk suits, dances and handicrafts, and traditional gastronomy. All these represent just a part of the attractions which characterize tourism in Maramures County [16].

The Maramures has a varied relief consisting of narrow peaks, wild valleys, glacial lakes, karst sources, limestone plateaus, forests rich in coniferous species and fauna, which determine the visitors to admire and remain wondered in front of the beautiful landscapes. The temperate-continental climate with cold summers and very cold winters allows good conditions for excursions along the year and give an

incentive for the fans of sport, hiking, alpinism. The Borsa mountain resort is well known for its good skiing slopes, and also other resorts like Izvoare, Cavnic, Mogoşa - Suior, Valea Vaserului, and Coştiui attract more and more tourists.

Tourism in Maramures has a huge potential to become a part of a programme of an integrated tourism process, grace to the harmonized activities offered by the local authorities, NGOs, local associations and the villages community [5].

A large range of tourism forms could be successfully practiced in Maramures area such as: cultural tourism, religious tourism, agri-tourism, mountain tourism, balneal tourism, ecotourism, medical tourism.

The accommodation facilities are mainly represented by rural guest houses and urban touristic boarding houses which accounts for about 60%, and respectively 19 % of the total number of units [4].

In Maramures rural tourism in guesthouses promotes the local hospitality as a "brand" and reflects the peasants' universe in terms of cultural traditions, and knowledge related to natural scenery [1].

However, in the Maramures area there are still unsolved problems related to tourism infrastructure, promotion of tourism offers, staff training, environment protection, deforestation, link between service quality and price, sanitation and waste collection, the lack of cooperation between local authorities, owners of guesthouses, tourism associations and NGOs within this sector, the deficient information offered to the travelers [3, 13].

The tourism activity in Maramures area is supported by private investors (73 %), public-private partnership (13 %), localities (13 %). The integrated tourism could be a sustainable form of tourism development in the area, creating new jobs in production, processing, agriculture, and trade, in this way assuring a harmonized balance between the opportunities offered by agriculture and forestry, and accommodation facilities, services (catering, guided tours, exhibitions of animals and tools), traditional peasant products (handicrafts, beverages, gastronomy, folk music, suits and

dances), conservation of landscapes and preservation of cultural values [6, 8].

To cover tourists' requirements, it is needed to join all the efforts and natural, human and technical resources. Technical endowment in tourism, in terms of accommodation units, food facilities, transportation, treatment and leisure opportunities is the one of the key factors contributing to the development of tourism [7].

Tourism development can take into account the preservation of the cultural heritage, promotion of tourist attractions, investments, diversification of activities, service and staff quality [9].

In this context, the goal of the paper was to analyze the dynamics of tourism offer, in terms of number of units with reception function for tourists' accommodation, and number of places, and tourism demand in terms of tourist arrivals, overnight stays and length of stay in the period 2007-2016. The trend line as well as the statistical parameters: mean, standard deviation, coefficient of variation, and also Spearman rank correlation, Pearson correlation coefficient and linear regression models between number of places and tourist arrivals, and between number of places and overnight stays were established to characterize tourism in the Maramures County and finally to forecast the number of tourist arrivals and overnight stays for the period 2017-2021.

MATERIALS AND METHODS

The study area.

The Maramures County is situated in the North part of Romania at the border with Ukraine, and having as neighbors the Cluj, Bistrita-Nasaud, Salaj, Suceava, and Satu Mare counties. The Maramureş county represents 2.6% in Romania's surface and 2.4 % in its population. It has 6,304 square km surface and on July 1st, 2016, the population of the county counted over 524,871 inhabitants, of which 41 % living in the rural areas. The main relief forms are: the mountains (43 %) represented by branches from the Eastern Carpathians and the Maramures Mountains, and also hilly and

plateau areas (30%) and valleys with terraces (27%) [10].

Its moderate temperate continental climate is characterized by with cold summers and extremely cold winters. Its territory is rich in various minerals, and is also crossed by various rivers among which the Tisa, Viseu, Iza, and Somes rivers are the most important, and also the 14 glacial lakes are significant for fishery and leisure, and also the salted lakes such as Ocna Sugatag and Costui are successful used as treatment places.



Photo 1. A typical landscape from the Maramures County.

The cultural heritage of the Maramures County includes: over 100 wood churches and also monasteries, most of them belonging to the UNESCO patrimony, and also the well known Merry Cemetery in Sapanta.



Photo 2. The Barsana Monastery, The Maramures County.

There are many interesting museums such as: Museum of History in Baia Mare, Museum of History and archeology Maramures, Museum of Mineralogy in Baia Mare, Museum of

Ethnography and Folklore, and cultural institutions such as: Historical center in Bara Mare, the Cathedral St. Stephan and the Tower, the Elisabeth House, the Chioaru fortified medieval fortress.

Also, due to the 13 natural reservations and 38 protected areas, the National Park of the Rodna Mountains, the 17 nature monuments, the Natural Park of the Maramures Mountains, the Maramures county is situated on the 2nd position in Romania [12, 18].

A large variety of tourism forms could be practiced in Maramures County such as: cultural, mountain, treatment, medical, religious and gastronomic tourism, trekking, mountaineering, climbing, paragliding, cycling, motorcycling and off-roading, skiing, and business tourism [18].

Data collection. In order to carry out this paper, the empirical data have been collected from the National Institute of Statistics, Tempo online Data base for the period 2007-2016.

The main specific indicators taken into account have been the following ones: number of units with reception function for tourists' accommodation, number of places, tourist arrivals, overnight stays and length of stay.

The applied methodology consisted of:

Index Method, in terms of *Index with fixed basis* with the formula $I_{FB} = (X_n / X_1) * 100$, where: X = the variable taken into consideration, $n = 1, 2, 3, \dots, i$, the years of the chronological series. The term of reference was the year 2007=100, and *Index with variable basis* with the formula $I_{VB} = (X_n / X_{n-1}) * 100$.

The statistical parameters: mean, standard deviation, and variation coefficient were determined using the Excel facilities.

The mean, \bar{y} was determined according to the formula: $\bar{y} = \frac{\sum y_n}{n}$.

The standard deviation was calculated as $\delta = \sqrt{\frac{\sum (y_t - \bar{y})^2}{n}}$

The coefficient of variation was determined according to the formula: $V\% = \frac{\delta}{\bar{y}} * 100$.

The average change, $\bar{\Delta}$, based on the formula: $\bar{\Delta} = (X_n - X_1) / (n - 1)$.

The average index, \bar{I} , based on the formula: $\bar{I} = \frac{n-1 \sqrt{X_n}}{\sqrt{X_1}}$

The average growth rate, $\bar{R}=100(\bar{I}-1)$

The Spearman rank coefficient of correlation, r_s , was calculated using the formula:

$$r_s = 1 - \frac{6 \sum d^2}{n(n^2-1)}$$

The Pearson correlation coefficient was determined using the formula:

$$r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 \sum (y - \bar{y})^2}}$$

The results for the correlation coefficients were interpreted according to [2].

The linear regression model was $Y = a + bX$, where: Y is the dependent variable, X is the vector of the independent variable, "a" is the constant and "b" is the regression coefficient. The values of thea and b were calculated solving the linear system of equations by means of the Least Square Method.

The Forecast Method was based on the adjustment of the indicators tourist arrivals and overnight stays in the period 2007-2016 using the absolute change $\Delta_t/t-1$, and the formula for $Y_t = y_1 + (t-1) \bar{\Delta}$.

The results were graphically illustrated and tabled, and correspondingly interpreted.

RESULTS AND DISCUSSIONS

The number of units with reception function for tourist accommodation in the Maramures County increased by 47.05 % in the analyzed period from 153 units in the year 2007 to 225

units in 2016. The share of the accommodation units in the Maramures County in the total accommodation units for tourists' reception in Romania declined from 3.25 % in 2007 to 3.23 % in 2016 with the maximum 3.78 % in the year 2008 and the minimum value 2.74 % in 2014 (Fig.1.).

The indices with fixed basis (I_{FB}) and the indices with variable basis (I_{VB}) for the number of units for tourists' accommodation in the Maramures County are presented in Table 1.

The I_{FB} values reflected that compared to 2007, as term of reference, in all the other years taken into consideration, it was registered a higher number of units. The I_{VB} showed that from a year to another there were recorded differences, either growths or declines.

The years with reduced number of units were 2011 (-10 %), 2012 (-0.6 %) and 2014 (-6.7%) compared to the level of the previous years.

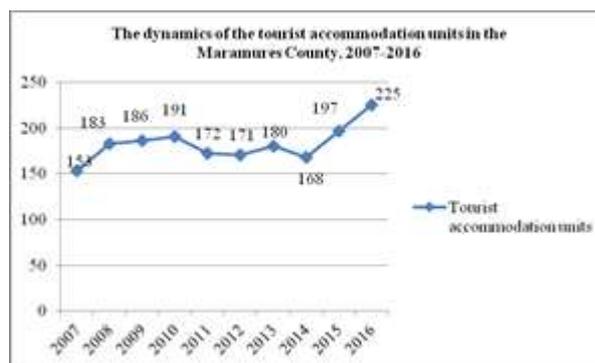


Fig.1. The dynamics of tourist accommodation units in the Maramures County in the period 2007-2016

Source: Own design based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

Table 1. The evolution of the indices with fixed basis (I_{FB}) and the indices with variable basis (I_{VB}) for the number of units for tourists' accommodation in the Maramures County, 2007-2016 (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I_{FB}	100	119.6	121.5	124.8	112.4	111.7	117.6	109.8	128.7	147.0
I_{VB}	100	119.6	101.6	102.6	90.0	99.4	105.2	93.3	117.2	114.2

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The number of places (beds) in tourist accommodation units in the Maramures County increased by 77.46 % from 3,635 places in 2007 to 6,451 places in 2016. Compared to the dynamics of the tourists units, the evolution of the number of beds was much higher. Also, the growth rate of the number of places, 77.46 % was higher compared to the

growth rate of the number of places in Romania which accounted for just 15.92 % in the analyzed period.

The increased dynamics of the number of places in tourist accommodation units reflects the concerns of the "actors" involved in the development of tourism offer to better satisfy tourist's demand.

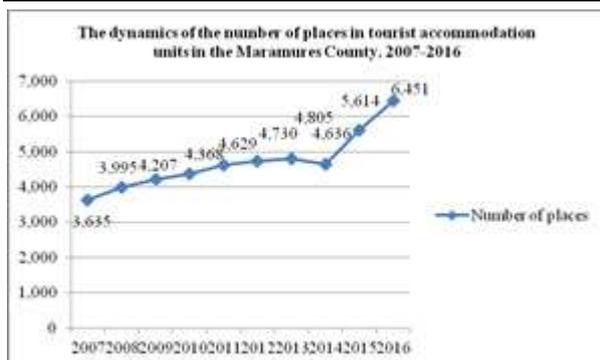


Fig.2. The dynamics of the number of places in the tourist accommodation units in the Maramures County in the period 2007-2016

Source: Own design based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

As a consequence, the share of the number of places in the Maramures County in the number

of places in Romania's tourism increased from 1.28 % in 2007 to 1.96 % in 2016, meaning by 53.12 % growth rate (Fig.2.).

The indices with fixed basis (I_{FB}) and the indices with variable basis (I_{VB}) for the number of places in the units for tourists' accommodation in the Maramures County are presented in Table 2.

The I_{FB} values reflected a continuous increase with small inflexions in different years, but an ascending general trend is obvious.

The I_{VB} values reflected a decline of the number of places from 2011 to 2014, in this last year the number of places recording the highest decrease compared to the previous year (-3.6 %), but starting from 2015, it began a recover.

Table 2. The evolution of the indices with fixed basis (I_{FB}) and the indices with variable basis (I_{VB}) for the number of places in the units for tourists' accommodation in the Maramures County, 2007-2016 (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I_{FB}	100	94.2	89.0	87.7	88.1	81.5	83.7	89.9	123.2	148.2
I_{VB}	100	94.2	94.4	98.5	100.5	92.5	102.6	107.3	137.0	120.2

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The tourist arrivals (Romanians and foreigners) increased by 75 % from 108 thousand arrivals in 2007 to 189 tourist arrivals in 2016.

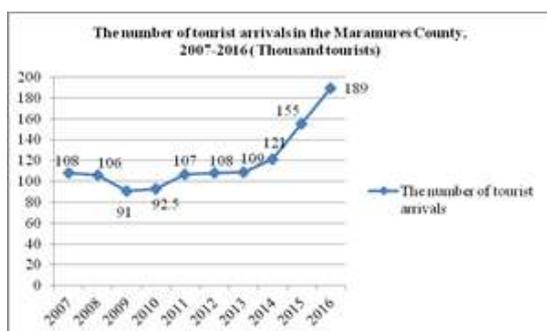


Fig.3. The dynamics of the number of tourist arrivals in the Maramures County in the period 2007-2016

Source: Own design based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The growth rate of 75 % was higher than the increase rate 57.82 % at the country level, proving the interest of many tourists to visit the Maramures region.

As a result, the share of the number of tourist arrivals in the Maramures County in the total number of tourist arrivals in Romania increased by 11.68 % from 1.54 % in 2007 to 1.72 % in 2016 (Fig.3).

The indices with fixed basis (I_{FB}) and the indices with variable basis (I_{VB}) for the number of tourist arrivals in the Maramures County are presented in Table 3

Table 3. The evolution of the indices with fixed basis (I_{FB}) and the indices with variable basis (I_{VB}) for the number of tourist arrivals in the Maramures County, 2007-2016 (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I_{FB}	100	98.1	84.2	85.6	99.0	100.0	100.9	112.0	143.5	175.0
I_{VB}	100	98.1	85.8	101.6	115.6	100.9	100.9	111.0	128.0	121.9

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The I_{FB} values reflected a decline of the number of tourist arrivals in the period 2008-2011 compared to the level of 2007, and then,

starting from 2012 it was noticed a recover with the highest level in 2016.

The indices with variable basis, I_{VB} , reflected the highest decline in 2009, but then a continuous increase from a year to another.

The number of overnight stays in the Maramures County increased by 48.24 % from 228 thousands in 2007 to 338 thousands in 2016. The share of the number of overnight stays of the Maramures County in the number of overnight stays in Romania's tourism increased by 37.50 % from 1.04 % in 2007 to 1.43 % in 2016 (Fig.4).

The indices with fixed basis (I_{FB}) and the indices with variable basis (I_{VB}) for the number of overnight stays in the Maramures County are presented in Table 4.

The I_{FB} values reflected a decline of the number of overnight stays after the year 2007, which has continued till the year 2015, when it restarted to increase over the level of 2007.

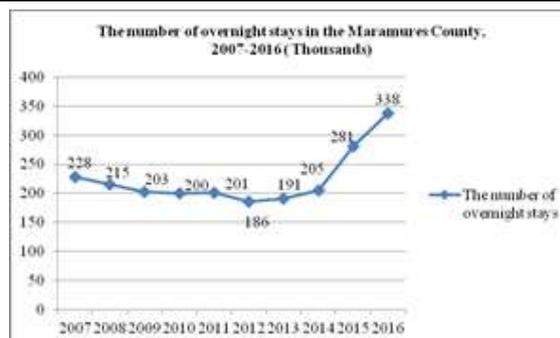


Fig.4. The dynamics of the number of overnight stays in the Maramures County in the period 2007-2016

Source: Own design based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The indices with variable basis, I_{VB} , reflected much better the changes from a year to another, the most critical period being 2008-2010, and then the year 2012. After this year, it started a continuous growth of the number of overnight stays

Table 4. The evolution of the indices with fixed basis (I_{FB}) and the indices with variable basis (I_{VB}) for the number of overnight stays in the Maramures County, 2007-2016 (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I_{FB}	100	94.2	89.0	87.7	88.1	81.5	83.7	89.9	123.2	148.2
I_{VB}	100	94.2	94.4	98.5	100.5	92.5	102.6	107.3	137.0	120.2

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The average length of stay of the tourists in the Maramures County registered a decline by 15.7 % from 2.11 days in 2007 to 1.78 days in 2016.

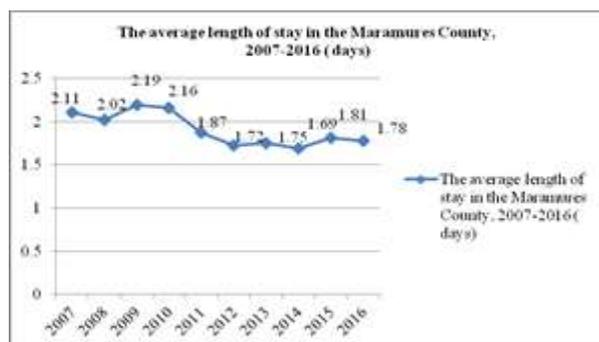


Fig.5. The dynamics of the average length of stay in the Maramures County in the period 2007-2016 (days)

Source: Own design based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The decrease of 17.7 % was lower than the decline of -27.8 % at the country level of this indicator. First of all, this reflects the general trend in tourism at present, the desire of most of tourists to spend less days in the same destination and to make more trips along the

year, and secondly this reflects that in the Maramures area the tourists prefer to spend more time to enjoy looking at the beautiful landscapes, knowing the local traditions and visiting the cultural places.

As a result, the share of the average length of stay in the Maramures County in the average length of stay in Romania increased from 0.71 % in 2007 to 0.83 % in 2016 (Fig.5).

Table 5. The mean, standard deviation and variation coefficient for the studied indicators

Indicator	Mean	Standard Deviation	Coefficient of variation (%)
Number of tourist accommodation units	182.6	19.52	10.69
Number of places	4,707	810.10	17.21
Number of tourist arrivals (thousands)	118.65	30.44	25.65
Number of overnight stays (thousands)	224.8	48.04	21.37
The length of stay (days)	1.91	0.19	9.94

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The main statistical parameters of the studied indicators: mean, standard deviation and coefficient of variation are presented in Table 5.

The values of the coefficients of variation varied from an indicator to another. In case of the number of tourist accommodation units and the length of stay, the values of the variation coefficients were about 10 % reflecting that the values of these indicators are homogenous. In case of the number of places, the variation coefficient ranged between 10 % and 20 % reflecting that the data are relatively homogenous. In case of the overnight stays and tourists arrivals, the values of the variation

coefficients varied between 20 % and 30 % reflecting that the data are relatively heterogeneous.

The Spearman rank coefficient of correlation.

The Spearman rank coefficient of correlation between the number of places (X) and the number of overnight stays is presented in Table 6.

The value of the Spearman rank coefficient of correlation pointed out a very weak but positive relationship, $r_s = 0.079$, between the number of places and the number of overnight stays.

Table 6. The Spearman rank coefficient of correlation between the number of places (X) and the number of overnight stays (Y)

Year	X Number of places	Y Number of overnight stays (Thousands)	r_x	r_y	D	d^2
2007	3,635	228	1	8	-7	49
2008	3,995	215	2	7	-5	25
2009	4,207	203	3	5	-2	4
2010	4,368	200	4	3	1	1
2011	4,629	201	5	4	1	1
2012	4,730	186	7	1	6	36
2013	4,805	191	8	2	6	36
2014	4,636	205	6	6	0	0
2015	5,614	281	9	9	0	0
2016	6,451	338	10	10	0	0
$\sum d^2 = 152$						
$r_s = 0.079$						

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The Spearman rank coefficient of correlation between the number of places (X) and the number of tourist arrivals is presented in Table 7.

In this case, the Spearman rank coefficient of correlation pointed out a strong and positive relationship, $r_s = 0.776$, between the number of places and the number of tourist arrivals.

The linear regression model and Pearson correlation coefficient.

The linear regression model and Pearson correlation coefficient for the number of

overnight stays depending on the number of places is presented in Fig.6. The regression model shows that for an increase by 1 unit of the number of places, the number of overnight stays will increase by 0.0458.

The Pearson correlation coefficient, $r_{xy} = 0.771$ reflects that between the two variables it is a strong and positive relationship.

Also, the coefficient of determination $R^2 = 0.5954$ showed that the variation of the overnight stays is influenced 59.54 % by the variation of the number of places.

Table 7. The Spearman rank coefficient of correlation between the number of places (X) and the number of tourist arrivals (Y)

Year	X Number of places	Y Number of tourist arrivals (Thousands)	r_x	r_y	D	d^2
2007	3,635	108	1	5	-4	16
2008	3,995	106	2	3	-1	1
2009	4,207	91	3	1	2	4
2010	4,368	92.5	4	2	2	4
2011	4,629	107	5	4	1	1
2012	4,730	108	7	5	2	4
2013	4,805	109	8	6	2	4
2014	4,636	121	6	7	-1	1
2015	5,614	155	9	8	1	1
2016	6,451	189	10	9	1	1
$\sum d^2 = 37$						
$r_s = 0.776$						

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]



Fig.6. The linear regression model and Pearson correlation coefficient for the number of overnight stays depending on the number of places in the Maramures County in the period 2007-2016 (days)

Source: Own design based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The linear regression model and Pearson correlation coefficient for the number of tourist arrivals depending on the number of places is presented in Fig.7.

The regression model shows that for an increase by 1 unit of the number of places, the number of tourist arrivals will increase by 0.0336.

The Pearson correlation coefficient, $r_{xy} = 0.893$ reflects that between the two variables it is a strong and positive relationship.

Also, the coefficient of determination $R^2 = 0.7985$ showed that the variation of the tourist arrivals is influenced 79.85 % by the variation of the number of places.

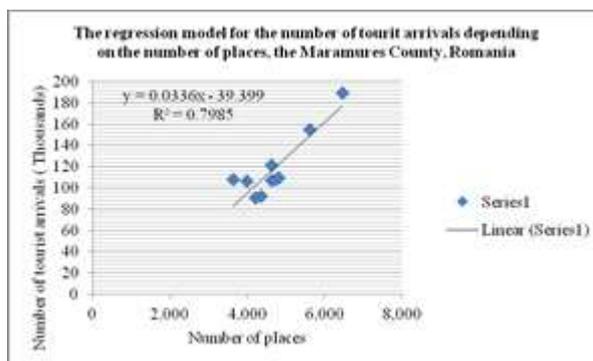


Fig.7. The linear regression model and Pearson correlation coefficient for the number of tourist arrivals depending on the number of places in the Maramures County in the period 2007-2016 (days)

Source: Own design based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The forecast of the number of overnight stays in the Maramures County for the period 2017-2021.

First of all, it was needed to proceed to the adjustment of the average growth for the number of overnight stays for the period 2007-2016, as presented in Table 8.

The average growth in the whole period was $\bar{\Delta}_n = (X_n - X_1) / (n - 1) = 12.22$ thousands.

The forecast for the number of overnight stays is presented in Table 9. As one could see, in the year 2021 it is expected as the number of overnight stays to account for 386.86 thousands.

Table 8. The adjustment of the average growth for the number of overnight stays for the period 2007-2016

Year	yt Number of overnight stays	$\Delta_t/t-2$	t-1	$Y_t = y_1 + (t-1) \bar{\Delta}$	$(y_t - Y_t)^2$
2007	228	-	0	228	-
2008	215	-13	1	240.22	636.04
2009	203	-12	2	252.44	2,444.31
2010	200	-3	3	264.66	4,180.91
2011	201	+1	4	276.88	5,757.77
2012	186	-15	5	289.10	10,629.61
2013	191	5	6	301.32	12,170.50
2014	205	14	7	313.54	11,780.93
2015	281	76	8	325.76	2,003.45
2016	338	57	9	337.98	-
				Total	49,603.52

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

Table 9. The forecast for the number of overnight stays in the Maramures County for the period 2017-2021 (Thousands)

Year	t-1	$Y_t = y_1 + (t-1) \bar{\Delta}$
2017	10	337.98
2018	11	350.02
2019	12	352.42
2020	13	374.64
2021	14	386.86

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The forecast of the number of tourist arrivals in the Maramures County for the period 2017-2021.

First of all, it was needed to proceed to the adjustment of the average growth for the number of tourist arrivals for the period 2007-2016, as presented in Table 10.

The average growth for the number of tourist arrivals in the whole period was:

$$\bar{\Delta}_t = (X_n - X_1) / (n - 1) = 9 \text{ thousands.}$$

Table 10. The adjustment of the average growth for the number of tourist arrivals for the period 2007-2016

Year	yt Number of tourist arrivals	$\Delta_t/t-2$	t-1	$Y_t = y_1 + (t-1) \bar{\Delta}$	$(y_t - Y_t)^2$
2007	108	-	0	108	-
2008	106	-2	1	117	121
2009	91	-15	2	126	1,225
2010	92.5	1.5	3	135	1,806.25
2011	107	14.5	4	144	1,369
2012	108	1	5	153	2,025
2013	109	1	6	162	2,809
2014	121	12	7	171	2,500
2015	155	34	8	180	625
2016	189	34	9	189	-
				Total	12,480.25

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

Table 11. The forecast for the number of tourist arrivals in the Maramures County for the period 2017-2021 (Thousands)

Year	t-1	$Y_t = y_1 + (t-1) \bar{\Delta}$
2017	10	189
2018	11	198
2019	12	207
2020	13	216
2021	14	225

Source: Own calculation based on the National Institute of Statistics, Tempo-online Data base, 2017 [14]

The forecast for the number of tourist arrivals stays is presented in Table 11. As one could see, in the year 2021 it is expected as the number of tourist arrivals to account for 386.86 thousands.

CONCLUSIONS

The Maramures County is one of the most attractive area of Romania grace to its beautiful landscapes, various cultural heritage, treasure of traditions and well known hospitality of the people.

A more intensive tourist inflow was noticed during the last decade in terms of tourist arrivals and overnight stays. In 2016, tourist arrivals accounted for 189 thousands, being by 75 % higher than in 2007. At the same time, the number of overnight stays reached 338 thousands in 2016, being by 46.24 % higher than in 2007.

The tourism offer has been continuously improved so that the number of units with function for tourists' accommodation has increased by 47.05 % reaching 225 units in the year 2016. At the same time, the number of places (beds) also increased by 77.46 % accounting for 3,635 places in 2016.

However, a decline was noticed in the length of stay, which accounted for only 1.78 days in 2016 instead of 2.11 days in 2007.

The Pearson correlation coefficient registered a high and positive value reflecting a strong link between the number of places and the number of tourist arrivals ($r = 0.893$) and between the number of places and the number of overnight stays ($r = 0.771$).

The coefficient of determination showed that the variation of the number of places have a deep influence on the variation number of tourist arrivals (79.85 %) and overnight stays (59.54 %), confirming the validity of the two regression models: $y = 0.0458x + 9.3878$ between the number of places and the number of overnight stays, and $y = 0.0336x - 39.399$ between the number of places and the number of tourist arrivals.

Taking into consideration that, in the analyzed period, the average growth of the overnight stays 12.22 thousands and for the number of

tourist arrivals 9 thousands, it was forecasted that in the year 2021, the Maramures county will register 386.86 thousand overnight stays and 225 thousand tourist arrivals, meaning an average length stay of 1.72 days.

The increased visitors' demand to visit the Maramures area oblige a revision of the strategy of tourism development joining the efforts of all the "actors" which must be involved: local communities, investors, local authorities, local population, NGOs and associations.

The main aspects where their attention must be focused are: infrastructure, modernization of accommodation units to meet the European standards, staff training, environment protection and a better promotion of the tourism offers.

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