

A STATISTICAL POINT OF VIEW FOR THE TOURIST TRAFFIC BETWEEN 2007-2013 FROM RURAL AREA OF VALCEA COUNTY

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Abstract: Because to its geographical position, climate, landscape, nature conservation and recreational activities rural tourist area of Valcea county is one representative for Romania. This favorable position in relation to other tourist areas in Romania is reflected by the statistics on the movement of tourist and accommodation capacity. Tourist traffic analysis is essential for developing effective policies to attract customers in this area. In this study I performed a quantitative analysis of tourism demand and consumption in Valcea County in 2007-2013 based on information provided by the County Department of Statistics via Statistical Yearbook Valcea County and publications "Tourism of Romania" The main variables have been analyzed in rural localities of Valcea County: establishments of tourists' reception with functions of tourist accommodation types structures in rura environment, accommodation capacity existing types of tourist accommodation, on rural ares, tourist arrivals in the establishments of rural tourism rural types of structures, overnight stays in tourist accommodation of rural villages.

Key words: tourist traffic, accomodation capacity in operation, rural tourism, environment

1. Introduction

Tourism represents the content and role characteristic phenomenon present civilization, one of the major components of economic and social interest polarize a growing number of countries. The role of tourism in the national economy of various countries is particularly important due to the complexity of this phenomenon, the scope of activities necessary for the emergence, maintenance and development. Tourism economic and operating highlights the unique treasure that consists of wealth created by nature and climate, or left by history, folklore and civilization [<http://andreivocila.wordpress.com/2010/09/25/sisteme-informatic-in-turism/>].

Without tourist movement, natural wealth, cultural and historic country will never be subject to economic activities that can generate income. Tourism has an important role in human, resulted in a number of positive effects in terms of some tourists, and on the other hand the local community in her role as host. As for tourist, tourism means creating conditions and opportunities for rest, relaxation, culture or contact with other humans, domestic tourism is a means of raising the standard of living, to improve living conditions. Viewed in conjunction with the national economy, tourism acts as a stimulating element of the global economic system. Conducting tourism requires a specific request for goods and services, which leads to an increase in demand within their production. Also tourism demand determines supply adaptation that results in, among other things, the development of material and technical base of the sector and indirectly in stimulating production of the industries involved in the construction and equipping of accommodation and food, modernization of roads, development means of transport, leisure facilities etc. Impressive advances in information technology over the past decade has found many applications in tourism.

These technologies, combined with advances in the field of telecommunications systematically and substantially contribute to the modernization of tourism. The use of electronics in tourism activity, the role of indicators and their analysis in a statistical viewpoint which involves the development of mathematical models allow:

- knowledge of the tourism demand;
- knowledge of the tourism offer;
- pursuing all tourist services on tourism forms;
- pursuit services related forms and means of transport, leisure;
- hotel reservations;
- tourism market study;
- a comprehensive and flexible accounting and management.

It should be mentioned that the analysis of statistical data on tourist traffic indicators was done based on existing to official records of the Valcea County Statistics. I selected statistical data stream within the range 2007 - 2013 (eight years) that is current at the same time was the most complete range for most of the administrative units in the study area.

2. Tourist traffic indicators

Tourist flows is measured in physical units and value units. Physical units are *the number of tourists* that can be recorded as arrivals and departures. Both arrivals and departures are recorded either at the border or at the accommodation units. Tin the table below excepts are hotels and hotels.

Table no. 1 – Arrivals of tourists in tourist accommodation areas, the types of tourists and development regions during 2006-2013

No.	Region	Types of tourist	2006	2007	2008	2009	2010	2011	2012	2013
1.	Romania	Total	1380068	1620577	1727217	1468701	1326868	1522212	1737845	1860993
2.		Romanians	1357565	1471826	1579560	1356898	1250535	1397297	1594607	1706810
3.		Foreigners	126163	148751	147657	111803	112333	124915	143238	154183
4.	South-West Oltenia	Total	93131	100700	109099	98909	84482	104021	122587	130400
5.		Romanians	88301	96508	105347	95479	81525	100634	117912	125050
6.		Foreigners	4830	4192	3752	3430	2957	3387	4945	5350
7.	Vâlcea County	Total	57159	61878	66896	58345	46708	53942	58182	56754
8.		Romanians	55616	60990	66148	57697	45990	53468	57451	55668
9.		Foreigners	1543	888	748	648	718	474	731	1086

Source: www.insse.ro, accessed at 31.03.2014

From table no. 1 it can be drawn the following conclusions:

- in South-West Oltenia Development Region total number of arrivals expressed by percentage points in 2006 was 6,74% of total Romania. The highest percentage was recorded in 2012 with a value of 7.05%;
- Valcea County to South-West Oltenia Development Region total number of arrivals in percent, in 2006 was at 61.37%. Only in 2007, recording the highest

level of 61.44%, other years following a downward trend in 2013 with the lowest, 43.52%;

- Total Vâlcea County to total Romania was evolved as follows: the year 2006 with 4,14 percentage, being the year with the highest level, in next period the trend is following the descendent way, the year 2013 recording the lowest level of 3,04 %, too.

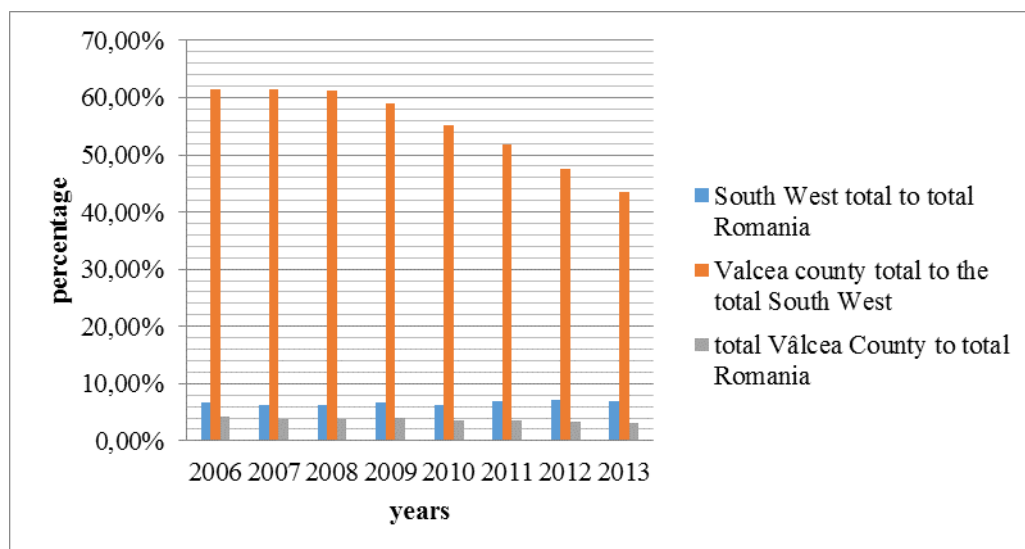


Figure no. 1 – Evolution of the number of arrivals expressed by percentage points in the three regions considered

(Source: own calculations)

Table no. 2 - Arrivals of tourists in rural tourism establishments of the types of structures in the period 2006-2013 - no. people -

No.	Years	Absolute indicators			Relative indicators			
		Number of arrivals	Absolute changes (Δ_t)		Dynamics of indicators (I %)		The pace of growth (R)	
2.		y_t	$\Delta_{t/1}$	$\Delta_{t/1-t}$	$I_{t/1}$	$I_{t/1-t}$	$R_{t/1}$	$R_{t/1-t}$
3.	2006	57159	-	-	-	-	-	-
4.	2007	61878	4719	4719	108,26	108,29	8,26	8,26
5.	2008	66896	9737	5018	117,03	108,11	17,03	8,11
6.	2009	58345	1186	-8551	102,07	87,22	2,07	-12,78
7.	2010	46708	-10451	-11637	81,72	80,05	-18,28	-19,95
8.	2011	53942	-3217	7234	94,37	115,49	-5,63	15,49
9.	2012	58182	1023	4240	101,79	107,86	1,79	7,86
10.	2013	56754	-405	-1428	99,29	97,55	-0,71	-2,45

Source: produced by the authors by processing information from the Statistical Yearbook of Valcea county, 2012 edition

The table number 2 can be seen that the number of tourist arrivals in the establishments of rural tourism in 2006-2013 fall on a slightly downward trend, showing an oscillatory trend with successive increases and decreases. The highest number of arrivals in the period was recorded in 2008 was 63 143 tourist arrivals, with 17.03% more than in 2006, which corresponds to a dynamic index of 117.03% and lowest number of arrivals is in 2010, 46 708 tourists arrivals, ie 18% less than in 2006. The largest relative increase tourist arrivals took place in 2011, then recorded over 15.49% more tourist arrivals for 2010. Evolution of the number of arrivals in the period 2006-2013 was characterized by alternating increases and decreases relative (see figure no. 2) around an upward trend expressed by the linear function:

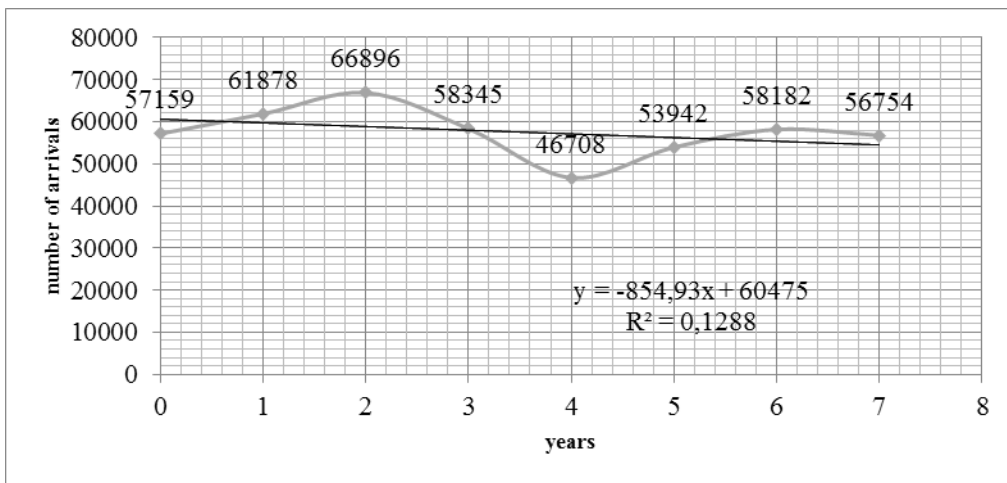


Figure no.2 – Evolution of the total number of arrivals in the establishments of tourists' rural reception in Valcea during 2006-2013

(Source: own calculations)

The minimum value of arrivals is recorded in 2010 compared to 2008 that is 19 025 arrivals. In return in the coming year there is an increase of 5,431 arrivals. Financial and economic crisis had a significant impact on the number of arrivals. Taking into account that the value of the coefficient R^2 is low ($R^2 = 0,12$) in the analysis was used a polinomial model (see Figure no. 3) in the form:

$$y = 52,701x^6 - 1206,9x^5 + 10302 x^4 - 339631 x^3 + 64241 x^2 - 29413 x + 57206$$

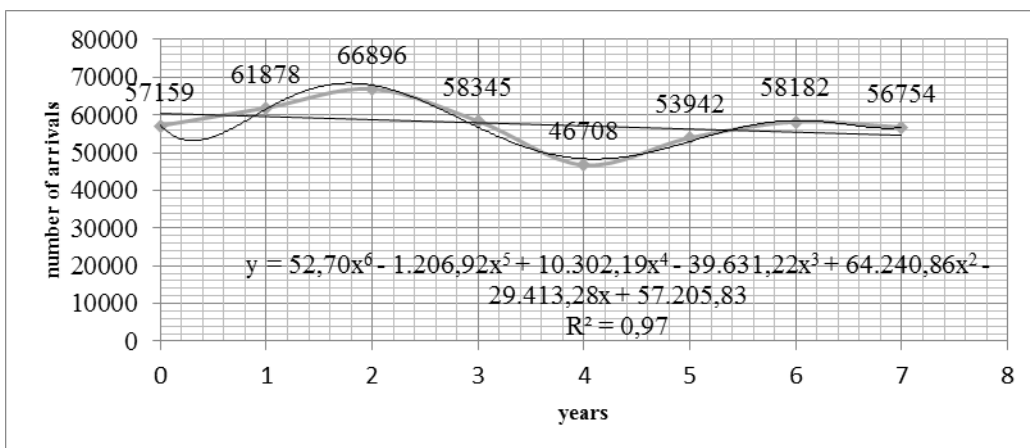


Figure no. 3 – Expression evolution of the total number of arrivals in the establishments of tourists' rural reception in Valcea, 2006-2013, the trend polinomial
(Source: own calculations)

Notwithstanding $R^2 = 0,97$ indicates a strong positive correlation of the evolution arrivals in period, that model can be used in good condition only for interpolations. Its use to extrapolate developments arrivals should be made with reservations.

Accommodation capacity in operation, an essential element in the development process of accommodation, is an indicator of deep implications in determining the efficiency of tourism. Tourist accommodation capacity in operation is determined as the product of the number of beds available to tourists and the number of days during the period of functional accommodation structures open the period.

Evolution accommodation capacity in operation during 2006-2013 is presented in table no. 3, in the analysis were exempted hotels and hostels. The study of the accommodation capacity in operation in Valcea County requires a graphical representation of statistical data and its dynamic analysis.

Table no. 3 - Rural tourist accommodation capacity existing types of tourism structures in Valcea County between 2006-2013 - no. places -

Tourist accommodation	2006	2007	2008	2009	2010	2011	2012	2013
Total county, including	10223	10556	10596	10877	10719	11526	12540	11158
Motels and inns	394	396	352	352	306	424	476	421
Tourist villas	723	707	697	782	798	884	843	620
Tourist chalets	148	148	148	148	146	142	170	112
Tourist boarding houses	547	614	622	684	798	882	1208	1169
Farmhouses	204	247	302	354	470	563	889	855
Campgrounds	900	894	947	947	671	592	540	448
Tourist stops	14	14	14	96	82	150	160	334
Holiday villages	-	-	-	-	22	22	67	87
Bungalows	-	-	-	-	14	56	30	30
Camps	297	276	295	295	312	436	436	472
Total	3227	3296	3377	3658	3619	4151	4819	4548

Source: : produced by the authors by processing information from the Statistical Yearbook of Valcea county, 2012 edition

Analyzing the evolution of rural tourist accommodation capacity in Table 3, in 2007, 2008 and 2009 rural tourist accommodation capacity existing types of rural tourism structures Valcea a slight decrease. Growth period is recorded in the coming years, the maximum being in 2012 with a capacity of 4819 beds. Although there is a steady increase in this indicator, this trend can be attributed to a weak impact of Financial and economic crisis started but on its inelasticity in relation to the considerable decrease in revenue due to crisis.

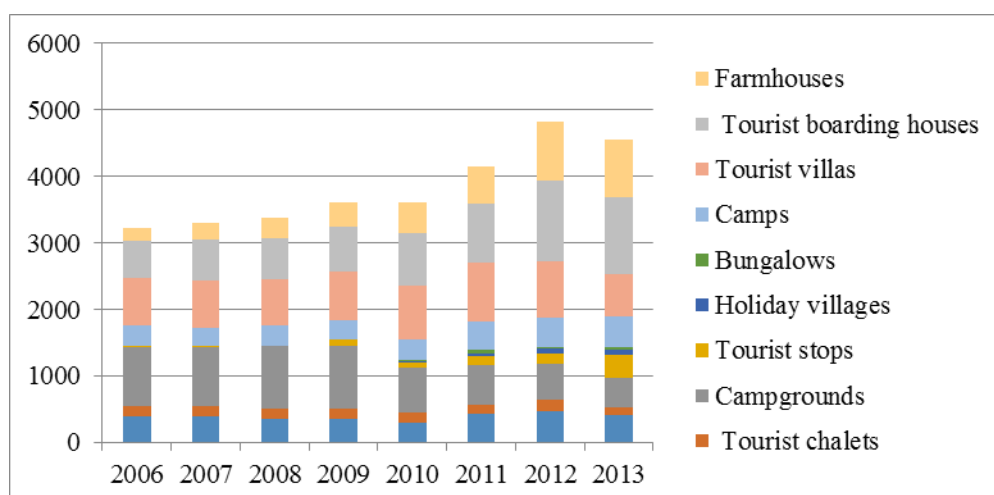


Figure no. 4 – Evolution of existing accommodation capacity by types of tourist accommodation in the period 2006-2013

(Source: Statistical Yearbook of Valcea county, 2012 edition)

Analyzing the indicator existing accommodation capacity (number of seats) we find an upward trend, it improved from year to year at a rate expressed as a percentage of 0.05%, which means an increase of 146.7 new places of accommodation (see table no. 4). The largest increase is found in 2011, when there was an increase of 448 (or 15.9%) new places from the previous year, 2010.

Table no. 4 – Analysis of rural accommodation capacity change in Valcea County for the period 2006-2013

Year Indicator	2006	2007	2008	2009	2010	2011	2012	2013
Existing accommodation capacity (number of seats)								
Total	3227	3296	3377	3658	3619	4151	4819	4548
Absolute change with mobile base (reporting is done in the previous year) - number of seats	-	69	81	281	-39	532	668	-271
Dynamic mobile base rate (reporting is done in the previous year) - % -	-	2,1	2,4	8,3	-1,06	14,7	16,1	-5,6
Average gain - number of seats	189							
Average pace - % -	0,05							

Source: own calculations

In the case of rural tourist accommodation capacity in operation by type of tourist structures can be used a linear model in good condition ($R^2 = 0.86$):

$$y = 227,92x + 3039,2$$

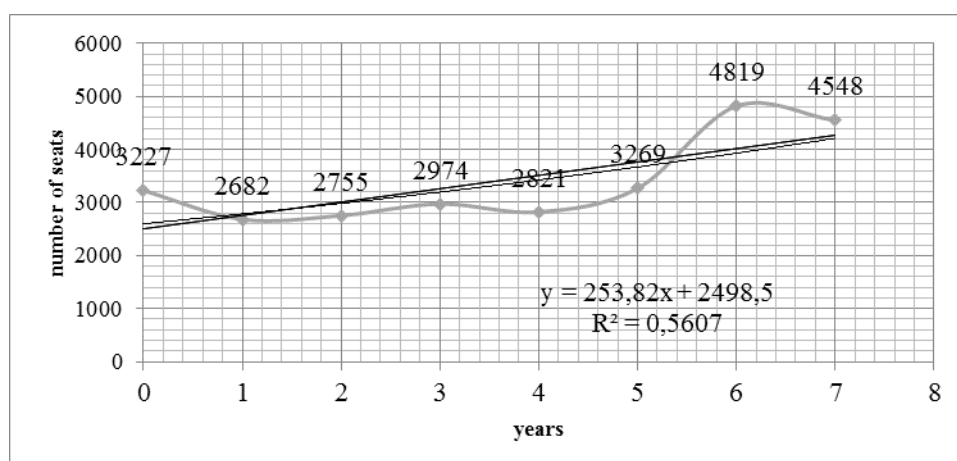


Figure no. 5– Evolution accommodation capacity in operation in Valcea County between 2006-2013

(Source: own calculations)

Table no. 5 – Capacity utilization index of tourist accommodation service on types of tourist accommodation in Romania between 2006-2013 (- % -)

N o.	Categories	2006	2007	2008	2009	2010	2011	2012	2013
1.	Motells	22,4	25,3	25,6	18,7	18,7	16,8	14,7	14,1
2.	Inns	19,6	24,7	26,5	12,1	25,8	10,6	10,8	10,8
3.	Tourist villas	25,2	27,1	29,2	23,9	19,8	20,6	19,6	19,9
4.	Tourist chalets	10,2	12,4	14,4	10,8	9,2	9,8	11,1	12,1
5.	Bungalows	22,5	22,2	26,3	26,3	15,8	15,8	17,8	12,7
6.	Holiday villages	18,6	16,4	19,7	9,2	7,5	10,7	15,5	23,6
7.	Campgrounds	15,4	20,3	21,6	20,7	19,6	15,3	12,4	10,8
8.	Tourist stops	20,9	20,7	18,8	16,3	11,3	9,6	10,6	16,1
9.	Camps	17,2	19,3	21,9	21,9	17,6	15,3	12,3	12,6
10.	Tourist boarding house	19,6	22,3	21,9	16,6	14,6	15,5	14,8	14,6
11.	Farmhouses	14,4	16,3	18,4	14,2	12,4	13,8	13,2	12,6
12.	TOTAL	33,6	36,3	35,4	28,4	25,2	26,3	25,9	25,1

Source: www.insse.ro, accessed at 31.03.2014

Analysis of the rate of use of tourist accommodation capacity in operation by type of tourist accommodation indicates the utilization fluctuated, 2010, bringing reductions for each category of accommodation.

Table no. 6 Capacity utilization index of tourist accommodation service in rural locations between 2006-2013

No.	Region	2006	2007	2008	2009	2010	2011	2012	2013
1.	Romania	14,4	16,3	18,4	14,2	12,4	13,8	13,2	12,6
2.	Sud-West . Oltenia	21,87	24,24	22,52	16,45	16,07	18,22	15,44	13,81
3.	Vâlcea County	24,02	23,25	22,47	16,58	9,54	11,55	9,99	8,34

Source: own calculations

In South West Development Region between 2006-2013 the highest capacity utilization of agro tourist accommodation in hostels was recorded in 2007: 24.24%. After 2008 to 2013 are recorded significant decreases reaching a minimum of 13.81% in 2013. In the case of net use index of accommodation capacity in operation for farmhouses pensions in Valcea County, it was found that the highest values were recorded at the beginning of period, in 2006, 2007 and 2008, respectively: 24.02% 23.25% and 22.47%, while the lowest value was recorded in 2013. Those very low levels from the combined action of several factors that etches generally negative Romanian tourism, rural tourism so. *Number of overnight stays* is recorded in tourist accommodation, overnight each night representing a person registered in a tourist accommodation, whether or not physically present in the room. Number of overnight stays can be at most equal to the number of days - tourist, but generally a smaller number because not all tourists staying overnight in tourist accommodation establishments that are specialized.

Table no. 7 presents the evolution of the number of nights spent in 2006-2013 Valcea county, except in hotels and hostels.

Table no. 7 - Overnight stays in tourist accommodation in Valcea county for the period 2006-2013 - no. -

N o.	Structu res	2006	2007	2008	2009	2010	2011	2012	2013	2013/2 006 (%)
1.	Total county	12715 96	12576 88	12802 63	10865 89	9605 20	10465 32	10525 77	10493 99	82,56
2.	Rural structure , in which:	17055 2	19213 1	20260 6	17107 0	1508 16	15754 7	14537 9	13943 4	81,75
3.	Tourist	17673	26666	19450	12099	1486	14639	18394	20868	118,07

	boarding houses					7				
4.	Farmhouses	8269	6311	9543	10300	5758	11232	17081	21409	258,9

Source: www.insse.ro, accessed at 31.03.2014

The minimum is recorded overnight stays in rural areas in 2013. The highest values is recorded at the beginning of the analyzed period 2007 and 2008 with 192 131 and 202 606 overnight stays. In the analyzed period the number had increased by 82% in 2013 compared to 2006.

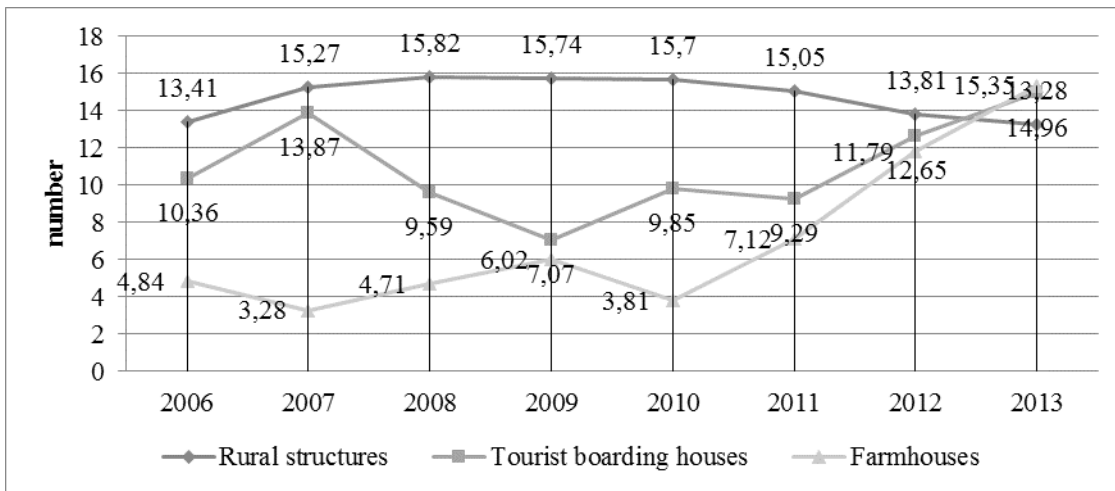


Figure no. 6 – Overnight stays in rural versus to total Valcea county, between 2006-2013
(Source: realized by author)

The dynamic model of the trend in the number of overnight stays in tourist accommodation grural Valcea (see figure no. 7) is expressed as a polinomial function at rade 4:

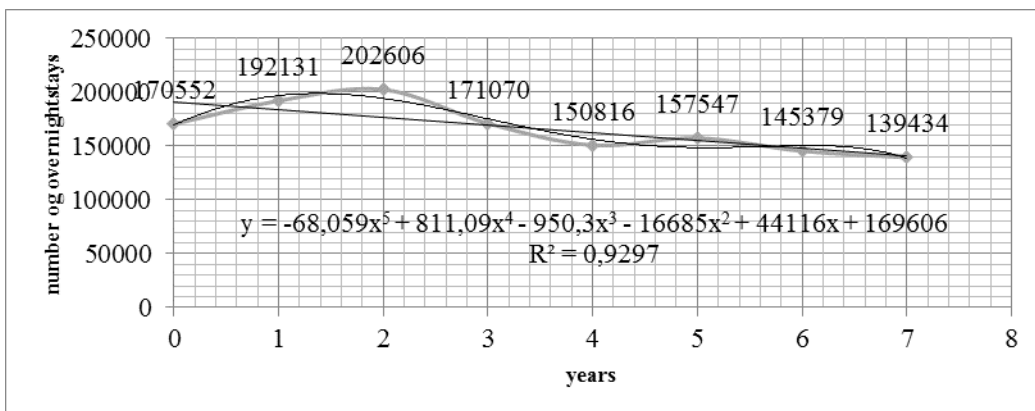


Figure no. 7– The trend polinomial expression evolution of the total number of overnight stays in tourist accommodation in Valcea County between 2006-2013
(Source: own calculations)

Year 2013 is the agrotouristic pensions period when it reaches the highest value, they recorded with 13140 overnight stays compared to 2006, the percentage reaches a value exceeding 100%, ie 258.9%.

3. Conclusions

The number of arrivals in the establishments of tourists' reception in Valcea County between 2006-2013 show an upward trend in 2008 reaching a maximum of 66896. Financial and economic crisis in 2009 had a significant negative impact on the number of arrivals, it reached its lowest level in 2010 with a number of arrivals of 46708, which decreases corepunde of 20188 to 2008.

Analyzing the indicator existing accommodation capacity (number of seats) we find an upward trend, it improved from year to year at a rate expressed as a percentage of 0.05%, which means an increase of 146.7 new places of accommodation (see table no. 4). The largest increase is found in 2011, when there was an increase of 448 (or 15.9%) new places from the previous year, 2010.

In South West Development Region between 2006-2013 the highest capacity utilization of agro tourist accommodation in hostels was recorded in 2007: 24.24%. After 2008 to 2013 are recorded significant decreases reaching a minimum of 13.81% in 2013. In the case of net use index of accommodation capacity in operation for farmhouses pensions in Valcea County, it was found that the highest values were recorded at the beginning of period, in 2006, 2007 and 2008, respectively: 24.02% 23.25% and 22.47%, while the lowest value was recorded in 2013. Those very low levels from the combined action of several factors that etches generally negative Romanian tourism, rural tourism so.

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4. References

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2. www.insse.ro, accesat la data de 31.03.2014