

Analysis of the dynamics of major tourism indices regarding infrastructure and tourist flows in hotels from Suceava county

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ABSTRACT: Among the types of accommodation units known and accepted in tourism, hotels are the category that can provide the most various services ranging from the highest quality, up to standard medium and low. Suceava is not characterized by a very high number of such establishments, but diversification of this structure subtypes resulted in an increased dynamics of their numbers. This analysis covers the 'classic hotels' and its newer subtypes youth hotels (according to the old classifications), hostels and motels. Changes in these forms of accommodation and in key tourism indicators (number of structures, accommodation capacity, accommodation capacity/days, Romanian and foreign tourists accommodated, overnight stays - Romanian and foreign tourists) within them, was done for the years between 1995-2013 (with data from 2012), and this study aims to highlight the real evolution of this type of accommodation in Suceava compared between different time intervals and reported to the main types, locations: balneary resorts, mountain resorts, towns, municipalities, other localities. For a proper analysis and performance, I used a number of tools specific to the SPSS statistic programme.

KEY WORDS: tourism, hotels, Suceava county, SPSS

1. Introduction

Hotels are accommodation units within the travel business that provide lodging and accommodation services to the general public for a minimum of one night; also, hotels are distinguished from other types of structures by the number of rooms (usually high), different levels of services, a particular target audience, tariffs and various types of ownership and management relations (Johnson, 2000). With the great enthusiasm that global tourism phenomenon took in the recent decades, hospitality has grown inevitable, in response to the need for leisure or for business meetings in a special location. Practicing tourism caused widespread diversification of hotels and services to address a more diverse segment of tourists. For this purpose, many studies have been concentrated around the tourism sector; I mention here only a few of them: Pop & Cosma, 2007; Akamba Mani & Pușcașu, 2009; Lupu & Nica, 2010; Blesik et al., 2011; Shoval et al.,

2011; Farrou et al., 2012; Assaf et al., 2012; Nicolau & Santa-Maria, 2013; Curakovic et al., 2013; Cojocea & Coroş, 2013; Yang et al., 2014; Nagy, 2014 etc).

This developing included Romania, whose hospitality development has been steadily growing since 1970: an increase of 42.3 % from 1970 to 1985 in the number of hotels, 1985-1990 5.9%, 1990-2000 relative stagnation, 2000-2005 22.9 % increase (Cojocea & Coroş, 2013; Pop & Cosma, 2007), reaching an approximate number of 1330 in 2013 (18, 19). The increasing trend was present also in Suceava county (Figure 1), actually following, the evolution of the tourism phenomenon at the county level, a trend which has seen a significant development in recent approx. 20 years; in fact, it is conceivable that this apparent increase in the hotels units is automatically attached (usually in the analysis made) to intensive development of Suceava's tourism, which is not necessarily correct.

The complexity of services provided by this type of accommodation and the major investments in infrastructure means that the hotel dynamics is a relevant indicator to reflect tourism development in a certain territory. A first analysis of types of accommodation in Suceava county shows that hotel structures are not the majority (but compensates with the large number of accommodation places). For example, the nationwide number of hotels, motels and hostels represents 32.94% of the total accommodation structures, while in Suceava this type of accommodation is only 19.41% (16, 17).

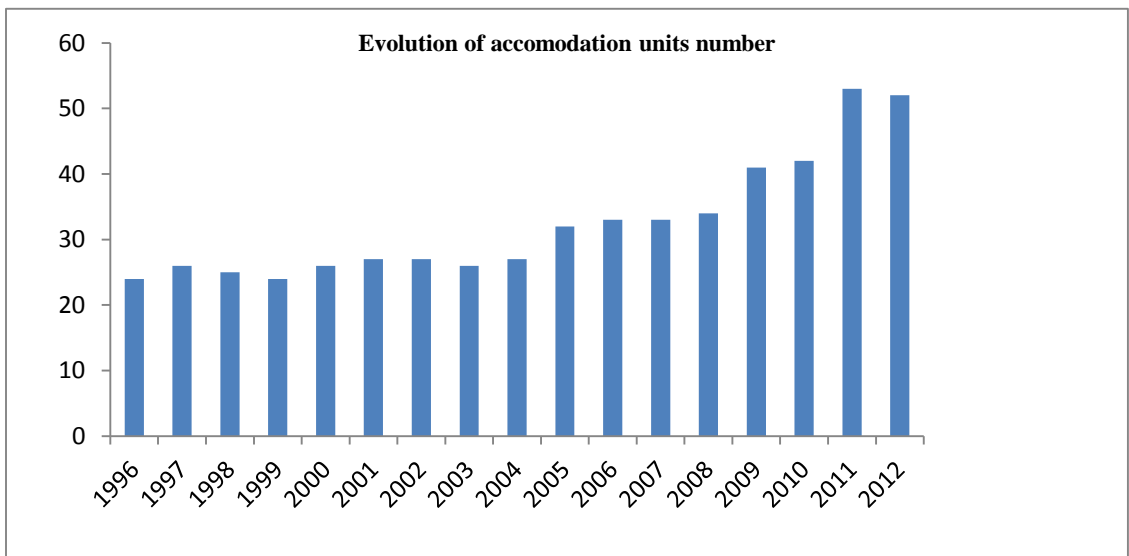


Figure 1. Evolution of accommodation units number.

2. Methodology

The present study aims at analyzing the complex dynamics of the accommodation hotel's number, and a few other different indices to highlight the intensity evolution of this type of structure. To get the full picture both hotels, motels and hostels were counted and analyzed, using secondary data obtained from official statistics of Suceava county.

The main indicators analyzed are: the number of structures, the accommodation capacity, the accommodation capacity/ days, the number of tourists accommodated, the number of Romanian and foreign tourists accommodated, the number of overnight stays, Romanian and foreign tourists overnights. These indices were analyzed for the period 1995-2013, and for a more efficient and

synthetic SPSS analysis, the 18 years interval was divided into three, as follows: 1995-2000 (the years of capitalist onset tourism and strengthening the private property; Ordinance no. 58/21.08.1998 Regarding the organisation and development of tourism activity in Romania - <http://www.cdep.ro/pls/legis> - the results of this ordinance were felt, in fact, very poorly in the country), 2001-2007 (a period of strong growth and legislative consolidation - Law no. 775/2001 Regarding the organisation and development of tourism activity in Romania), 2008-2012 (the recession) (Cheia & Marici, 2012).

Apparently the aisle seem unequal in dimensions, but they were conceived and separated based on the criteria of those special terms mentioned above; the using of the SPSS software provides an accurate analysis of the average variation, and reduces consistently the inconvenients regarding the unequal dimension of the chosen time interval. In a first stage the analysis focused overall on Suceava county and in the second stage due to the statistics obtained, an analysis of hotel structures related to the main types of tourist destinations (mountain resorts, balneary resorts, cities, municipalities, other localities) was made, thus providing a detailed picture of the dynamics of the studied phenomenon.

The SPSS analysis (Statistical Package for the Social Sciences) holds precise statistical methods and tools with socio-economic relevance, thus providing the possibility of comparison between the various research projects carried out separately. Among the many operations that are used in SPSS I have chosen several types of tests (t-test, Levene's test) and the analysis of variance (disagreement/pause) one-way ANOVA. T-test analyzes whether the variable/population has a value specified in a null hypothesis (test of significance - how significant / important is a certain variable in the analysis that is conducted) and Levene's test is used to determine the deductive statistics to establish the equality of variables, numerical intervals within the samples. The variance's analysis is similar to t-test, but has the primary purpose of comparing at least two samples with each other.

3. Analysis results

3.1. Analysis I

To analyze the whole territory if there are variations in the independent variables hotel structures, depending on the three time intervals, we applied one-way ANOVA method. Before this we performed a correlation analysis of the main variables of the research and the results are as follows (Table 1):

Table 1. Mean, standard deviation and number of cases

Variables	M	SD	N
No. of accommodation structures	15,71	24,14	187
Accommodation capacity	626,03	859,53	187
Accommodation capacity/days	177140,86	294127,52	187
Total tourists accommodated	19533,18	42659,96	187
Romanian tourists accommodated	15905,89	33076,52	187
Foreign tourists accommodated	3627,29	9894,32	187
Total overnight stays	48469,51	100548,61	187
Romanian tourists overnights	42691,54	86479,71	187
Foreign tourists overnights	5777,28	14642,03	187

*M-mean; SD- standard deviation; N-number of cases

Regarding the effect size (Table 2), according to Cohen (1988), correlation coefficients can be interpreted as follows: $r < .10$ = small effect, $r < .30$ medium effect, $r < .50$ strong effect. The value of "r" indicates that there is no significant relationship or proportional or inversely proportional (depending on the sign) between the two variables. Squared, r^2 , indicates the relationship's quantification in percentages.

Table 2. Pearson correlations between research variables

Variables	No. of accomm. structures	Number of accomm. structures	Number of accomm. structures	Number of accomm. structures	Number of accomm. structures	Number of accomm. structures	Number of accomm. structures	Number of accomm. structures	Number of accomm. structures
No. of accommodation structures	1								
Accommodation capacity	,491**	1							
Accommodation Capacity /days	,388**	,969**	1						
Total tourists accommodated	,230**	,902**	,962**	1					
Romanian tourists accommodated	,256**	,914**	,969**	,998**	1				
Foreign tourists accommodated	,134	,833**	,908**	,976**	,959**	1			
Total overnight stays	,222 **	,917 **	,964**	,987**	,987**	,958**	1		
Romanian tourists overnights	,229**	,920**	,962**	,982**	,983**	,946**	,999**	1	
Foreign tourists overnights	,176*	,864**	,934**	,981	,968**	,993**	,966**	,954**	1

One-way ANOVA analysis on hotel accommodation structures indicated that there is a main effect of the independent variable on the dependent variables. More specifically, there is a significant effect of the independent variable (time intervals) on the dependent variables as shown by the data below:

time intervals → number of accommodation structures $[F(2, 48) = ,980, p = ,383]$.

time intervals → accommodation capacity $[F(2, 48) = ,955, p = ,392]$.

time intervals → accommodation capacity/days $[F(2, 48) = ,689, p = ,507]$.

time intervals → total tourists accommodated $[F(2, 48) = 1,792, p = ,178]$.

time intervals → Romanian tourists accommodated $[F(2, 48) = 1,877, p = ,164]$.

time intervals → foreign tourists accommodated $[F(2, 48) = 1,707, p = ,192]$.

time intervals → total overnight stays $[F(2, 48) = 1,520, p = ,229]$.

time intervals → Romanian tourists overnights $[F(2, 48) = 1,654, p = ,202]$.

time intervals → foreign tourists overnights $[F(2, 48) = ,851, p = ,433]$.

Since ANOVA analysis indicated that there was no main effect of the independent variable on the dependent variable, the individual analysis between environments was no longer performed. Basically this means that although the numbers are different, the statistically average number of accommodations remained the same. For example, if we compare any of the intervals 1995-2000, 2001-2007, 2008-2012 (fig. 2), statistically there are no significant differences between time intervals due to media and because of the chosen intervals).

The aim of the analysis was to highlight the trend of hotel accommodations over time. The independent variables were time intervals and the types of structures, while the dependent variables were the number of structures, the accommodation capacity (rooms), the accommodation capacity/days, accommodated tourists (arrivals), Romanian tourists

accommodated, foreign tourists accommodated, number of overnight stays, overnights Romanian tourists, overnights foreign tourists. For this analysis we used one-way ANOVA and post- hoc method Bonfferone. Regarding hotels the analysis indicated that there was no statistically significant effect of time intervals on any of the independent variables, which already contradicts the graphic in fig. 1, suggesting a continued growth in the number of accommodation units, also and increasing dynamics of these variables.

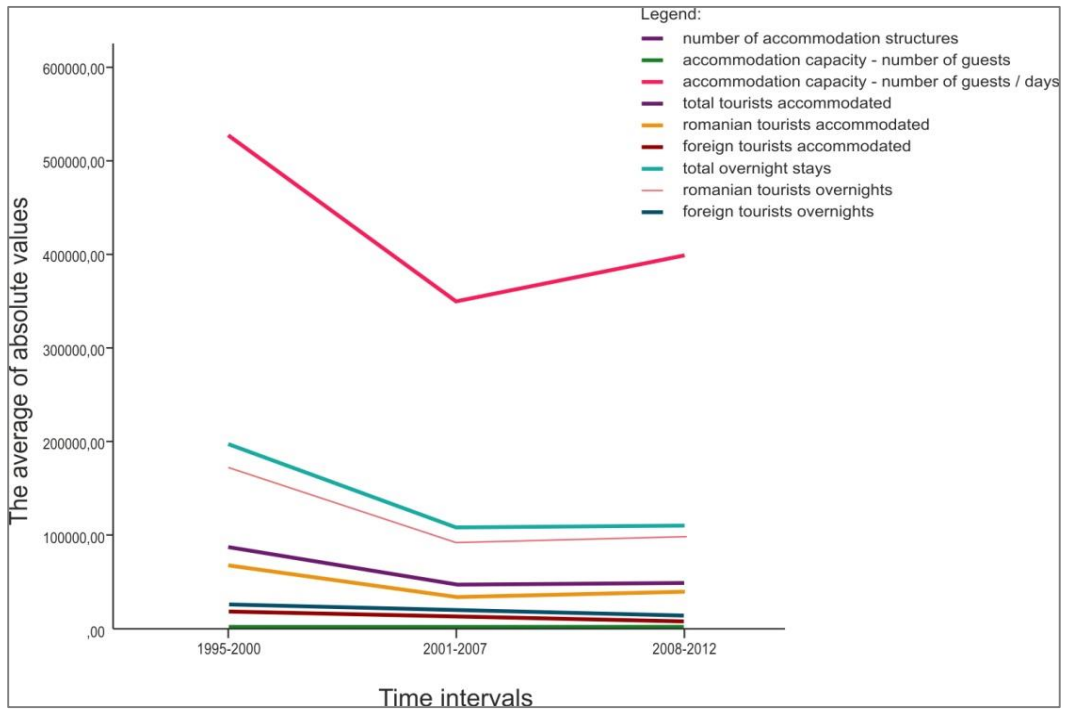


Figure 2. Variation of means.

3.2. Analysis II - Variation of tourism indicators for different types of tourist destinations

The following analysis was performed on the same pattern as the previous, but the data were grouped by types of tourist destinations from Suceava county, reported again at the three time intervals; they are: balneary resorts (Vatra Dornei), mountain resorts (Gura Humorului, Câmpulung Moldovenesc), cities (Suceava, Rădăuți, Fălticeni) and others localities.

To analyze whether there are variations in the dependent variables for hotel structures within balneary resorts, according to the three time intervals, we applied the method one-way ANOVA from SPSS. Descriptive data of the main variables are in Table 3:

Table 3. Mean, standard deviation and number of cases

Variables	M	SD	N
Total tourists accommodated	8337,41	7528,79	58
Romanian tourists accommodated	7846,62	7054,63	58
Foreign tourists accommodated	535,20	591,91	53
Total overnight stays	47217,85	47176,63	56
Romanian tourists overnights	45798,96	45940,94	56
Foreign tourists overnights	1558,00	1857,10	51

The ANOVA analysis showed *no significant effect* of the variable "time intervals" on the dependent variables.

time intervals → total tourists accommodated [$F(2, 55) = 2,424, p = ,098$].

time intervals → Romanian tourists accommodated [$F(2, 55) = 2,493, p = ,092$].

time intervals → foreign tourists accommodated [$F(2, 50) = 1,726, p = ,188$].

time intervals → total overnight stays [$F(2, 53) = 1,940, p = ,154$].

time intervals → Romanian tourists overnights [$F(2, 53) = 1,885, p = ,162$].

time intervals → foreign tourists overnights [$F(2, 48) = 2,074, p = ,137$].

The figure shows the trend of dependent variables over time is presented below.

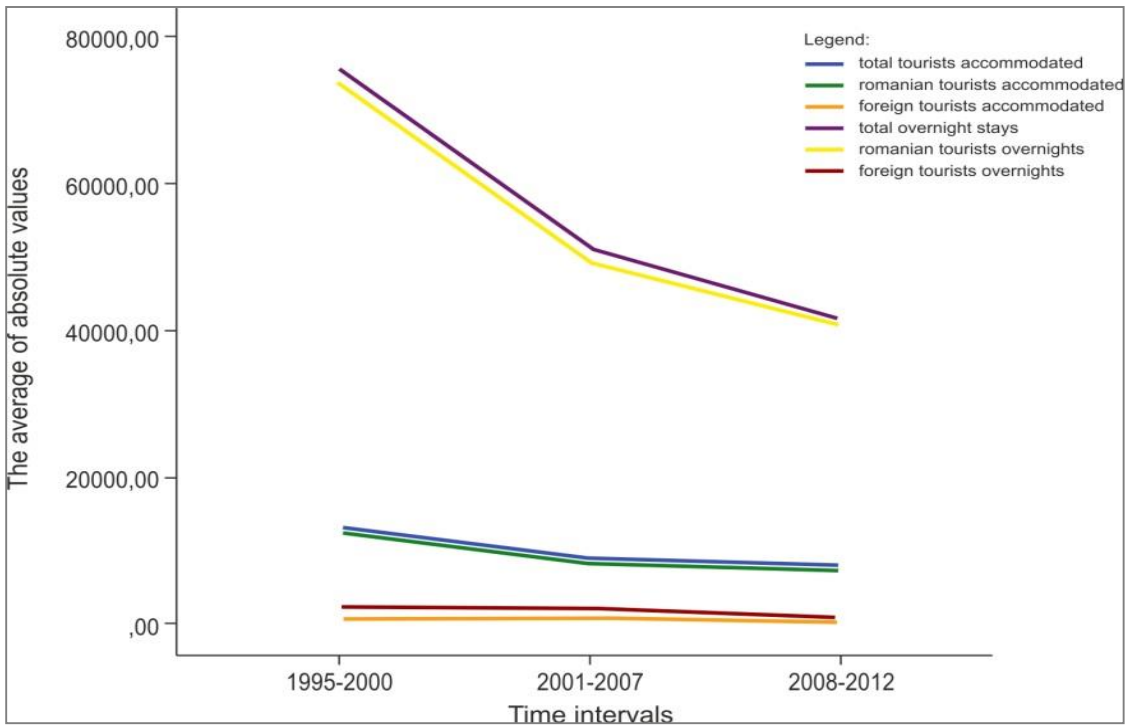


Figure 3. Variation of means.

To analyze whether there are variations in the dependent variables for the hotels from *mountain resorts*, based on the three time intervals, we applied one-way ANOVA method from SPSS. The main variables descriptive data are in Table 4:

Table 4. Mean, standard deviation and number of cases

Variables	M	SD	N
Total tourists accommodated	6416,78	8762,62	56
Romanian tourists accommodated	3591,51	4794,91	56
Foreign tourists accommodated	3595,79	4524,15	44
Total overnight stays	7829,10	9316,45	55
Romanian tourists overnights	4915,58	5203,87	55
Foreign tourists overnights	3726,60	4787,88	43

The ANOVA analysis showed that there was a significant effect of the variable "time intervals" on the dependent variables in all cases:

time intervals → total tourists accommodated [F(2, 53) = 12,186 , p = ,000].
 time intervals → Romanian tourists accommodated [F(2, 53) = 17,696 , p = ,000].
 time intervals → foreign tourists accommodated [F(2, 41) = 7,830 , p = ,001].
 time intervals → total overnight stays [F(2, 52) = 4,053 , p = ,023].
 time intervals → Romanian tourists overnights [F(2, 52) = 4,385 , p = ,017].
 time intervals → foreign tourists overnights [F(2, 40) = 4,081 , p = ,024].

Post-hoc comparisons between time intervals for the following dependent variables showed significant differences between means (Table 5).

Table 5. The difference between the mean, standard deviation and p value

Variable	Time intervals		M _{dif}	SD	p
Total tourists accommodated	1995-2000	2001-2007	13211,71	3173,59	,000
		2008-2012	15498,03	3159,23	,000
	1995-2000	2001-2007	8654,18	1624,28	,000
Romanian tourists accommodated	1995-2000	2008-2012	9393,86	1617,37	,000
		1995-2000	2008-2012	7088,21	1824,43
Foreign tourists accommodated	1995-2000	2001-2007	10366,00	4030,57	,039
Total overnight stays	1995-2000	2008-2012	11213,50	4014,42	,022
		1995-2000	2001-2007	6446,75	2239,01
Romanian tourists overnights	1995-2000	2008-2012	6078,14	2230,03	,026
		1995-2000	2008-2012	6179,79	2224,90
Foreign tourists overnights	1995-2000	2008-2012			

*p < .05 **p<.01 ***p<.005

The graph which shows the trend of the variables dependent on the time for hotels, is shown below (Figure 4).

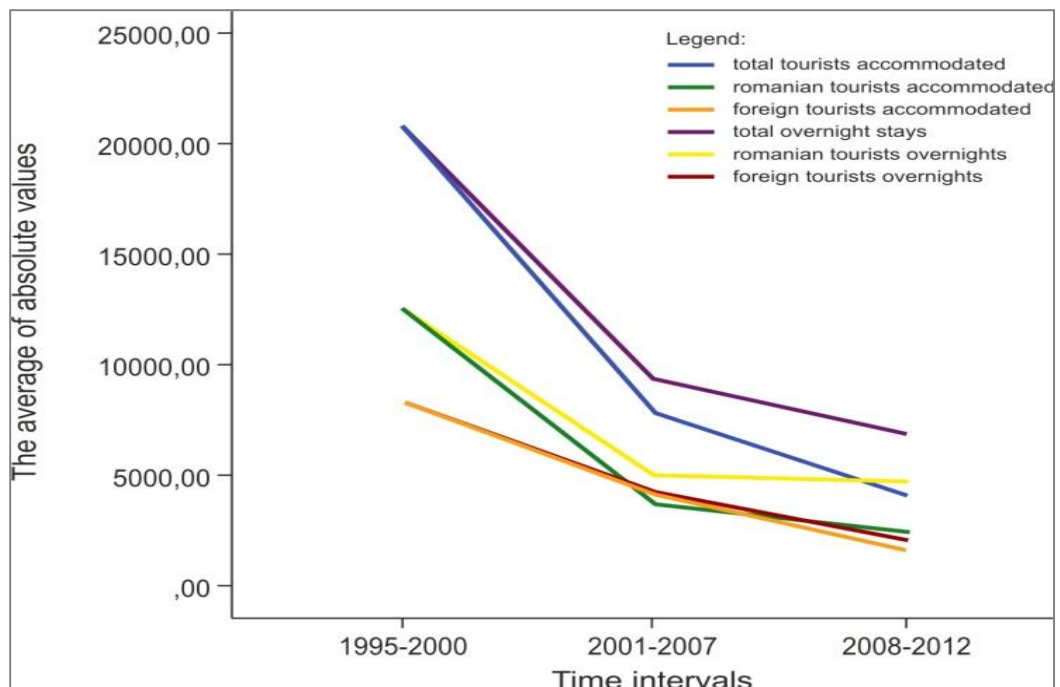


Figure 4. Variation of means.

To analyze whether there are variations in the dependent variables for hotels located in municipalities, according to the three time intervals, we applied one-way ANOVA method in SPSS. Descriptive data of the main variables are in Table 6:

Table 6. Mean, standard deviation and number of cases

VARIABLE	M	SD	N
Total tourists accommodated	18887,59	15722,77	61
Romanian tourists accommodated	15474,36	12734,81	61
Foreign tourists accommodated	3717,98	4584,57	56
Total overnight stays	28563,28	20455,65	57
Romanian tourists overnights	23556,52	16452,96	57
Foreign tourists overnights	5384,62	6805,59	53

The ANOVA analysis showed that there was a significant effect of the variable "time intervals" on the dependent variables for the two situations.

time intervals → total tourists accommodated [F(2, 58) = ,129 , p = ,879].

time intervals → Romanian tourists accommodated [F(2, 58) = ,037 , p = ,964].

time intervals → foreign tourists accommodated [F(2, 53) = 4,437 , p = ,017].

time intervals → total overnight stays [F(2, 54) = ,425 , p = ,656].

time intervals → Romanian tourists overnights [F(2, 54) = ,306 , p = ,738].

time intervals → foreign tourists overnights [F(2, 50) = 2,843 , p = ,068].

Post-hoc comparisons between time intervals for the following dependent variables showed significant differences between means (Table 7):

Table 7. The difference between the mean, standard deviation and p value

Variables	Time intervals		M _{dif}	SD	p
Foreign tourists overnights	1995-2000	2008-2012	4345,22	1564,16	,023

*P < .05 **P<.01 ***p<.005

The graph which shows the trend versus time dependent variables, in the case of hotels is shown below (fig. 5).

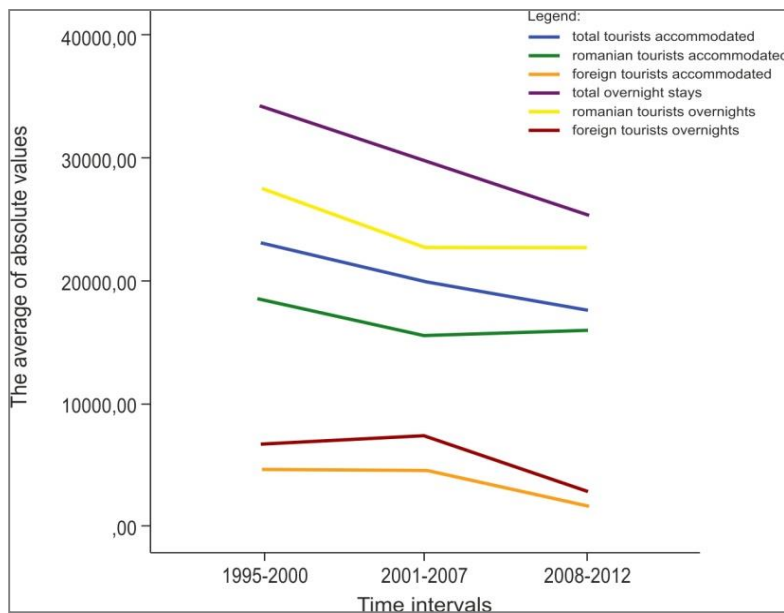


Figure 5. Variation of mean.

To analyze whether there are variations in the dependent variables for hotels in other places, according to the three time intervals, we applied one-way ANOVA method in SPSS.

Descriptive data of the main variables are in Table 8:

Table 8. Mean, standard deviation and number of cases

Variable	M	SD	N
Total tourists accommodated	3640,14	5044,78	100
Romanian tourists accommodated	2575,56	2769,87	100
Foreign tourists accommodated	1267,38	2910,81	84
Total overnight stays	6016,60	8973,08	97
Romanian tourists overnights	4012,11	4599,67	97
Foreign tourists overnights	2430,46	5333,01	80

The ANOVA analysis showed that there was no significant effect of the variable "time intervals" on the dependent variables.

time intervals → total tourists accommodated [F(2, 97) = 1,126 , p = ,329].

time intervals → Romanian tourists accommodated [F(2, 97) = ,734 , p = ,483].

time intervals → foreign tourists accommodated [F(2, 81) = 1,833 , p = ,166]

time intervals → total overnight stays [F(2, 94) = 2,076 , p = ,131].

time intervals → Romanian tourists overnights [F(2, 94) = 2,264 , p = ,110].

time intervals→ foreign tourists overnights [F(2, 77) = 1,812 , p = ,170].

The graph which shows the trend versus time dependent variables, in the case of hotels is shown below.

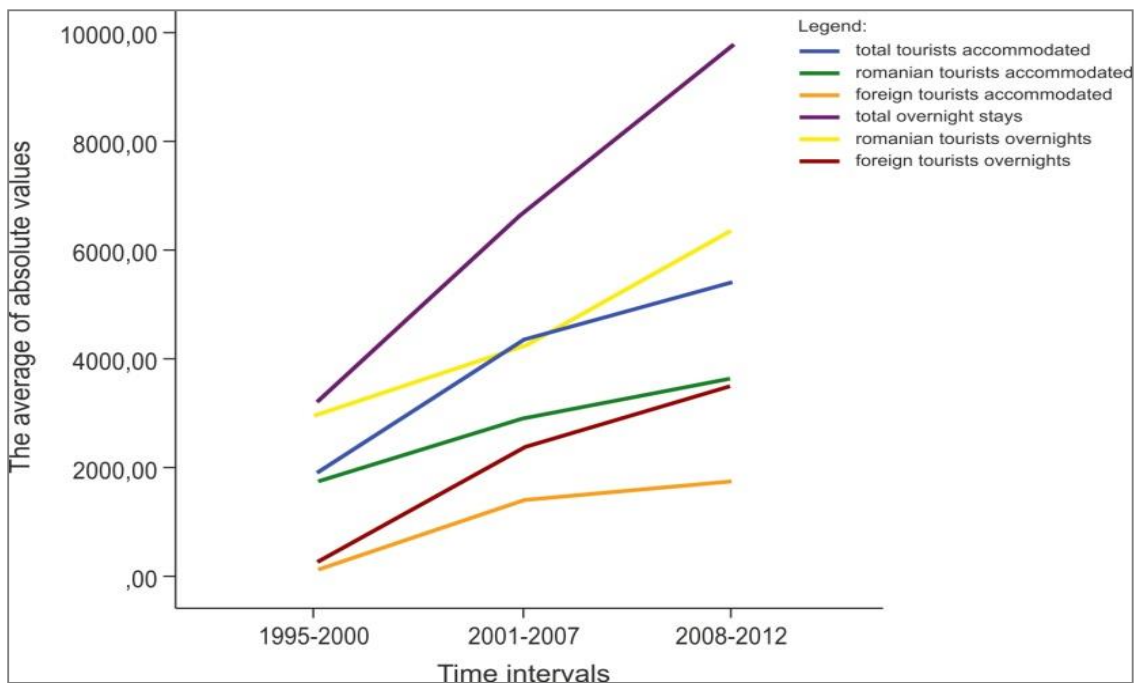


Figure 6. Variation of mean.

4. Conclusions

The purpose of the research was to analyze the variables - the number of tourists accommodated (Romanian and foreign) and the number of overnight stays (Romanian and foreign) - depending on tourist destinations, type of structure and timeframes.

Concerning balneary resorts we have found that the number of accommodations (3 variables) and overnight stays (3 variables) are not statistically different in time, in the cases of types of accommodation analyzed and according to tourist destinations; in other words if we look at the accommodation hotels and we analyse the number of accommodations and the number of overnights, we find significant fluctuations from one time to another. Balneary resorts were always in attention of tourists due to their curative properties and facilities, so the main clients (especially outside the tourist season, spring, fall, but not exclusively) are elderly individuals, with a constant presence in these resorts encouraged and supported by national social programs (various Government Laws, last - no. 51/2014, in which the main partners, the Romanian Government and the National House of Pensions make a selection and distribute these "tickets" - 20).

In the mountain resorts the number of accommodations (3 variables) in hotels and adjacent structures in the mountain, and the number of overnights (3 variables) remained constant between the periods 2001-2007, 2008-2012. Instead, we found that the number of accommodations (3 variables) and overnight stays (3 variables) in hotel structures located in the mountain resorts were significantly higher between 1995-2000 compared with 2001-2007 and 2008-2012. We conclude that the number of overnight accommodation between the three intervals show a statistically significant decrease (statistically significant when it comes to referring to a threshold of .05). This may be because, in general, hotel prices are slightly higher; especially dynamic within the county are guest houses, which have increased in number, are more accessible to tourists, often having last minute offers available and offering the possibility to "negotiate fees", and are thus the first option for accommodation.

In municipalities regarding foreign tourists staying in hotels, there was a decrease in 2008-2013 compared to 1996-2000, which can be attributed to the increasing importance of areas outside of urban Suceava, of the rural and mostly mountainous areas, which is characterized by an increase of special importance ("Bucovina" brand has the maximum resonance in the rural areas in particular) and have specific accommodation, guest houses; municipalities, are most of the times, transit areas and links to other tourism areas in the county. For the other indices, there were no major statistical differences.

The number of accommodations and overnights in hotel structures located in "other places" remained constant over the three time periods.

As a general conclusion to this analysis we can say that overnight stays and accommodations remained constant in hotels from balneary resorts and the ones located in "other places"; however, the number of accommodations and overnights spent in hotels situated in the mountain resorts was highest in 1995 -2000.

As general conclusions of the study, we would like to highlight two aspects:

- The importance of research tools and methods, instruments that can overwhelmingly influence the results/ conclusions obtained; simple visual insight can produce errors of interpretation unless it is supported by a statistical analysis based on scientific rigor; difference between the numerical values cannot be denied, but the intensity trend of

development can be demonstrated only through thorough analysis; using standard methods based on statistical instruments or software offers an opening for a future research in this area for the same time intervals and also the possibility of conducting an identical study in another touristic area, thus allowing comparisons.

- The increasing dynamics of accommodations in hotels from Romania does not have the same intensity in Suceava county, even more the so-called growth is not supported by arguments; analysing the variables based on the time intervals showed that the trend is a constant one, and depending on the type of the tourist destinations there have been some fluctuations, but in most cases, surprisingly, a decrease was documented in the values of indicators.

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