

COMPARATIVE ANALYSIS OF TOURISTIC RECEPTION ESTABLISHMENTS WITH ACCOMMODATION FUNCTIONS, ACCOMMODATION CAPACITY AND OCCUPANCY LEVELS IN ROMANIA, HUNGARY AND BULGARIA

Dudaș Anca Iulia*, Popovici Diana**

*University of Oradea, Faculty of Environmental Protection, 26 Gen. Magheru St., 410048 Oradea, Romania, e-mail: iulia_dai@yahoo.com

**University of Oradea, Faculty of Environmental Protection, 26 Gen. Magheru St., 410048 Oradea, Romania, e-mail: pdiana@uoradea.ro

Abstract

The purpose of this work is to analyse and compare the number of touristic reception units with accommodation, accommodation capacity and occupancy levels of these units in Romania, Hungary and Bulgaria.

Source of information used is the database of EUROSTAT. Data were collected about the number of tourist accommodation units and their accommodation capacity of over 12 years (2003-2014). For occupancy levels data were collected in the years 2012 to 2014. For data processing was used IBM SPSS Statistics V20 program.

After the interpretation of the results emerged that Hungary has on average fewer units of accommodation than Romania and Bulgaria, but instead their accommodation capacity is higher than in Romania or Bulgaria. In Romania, however, things are reversed: there are more accommodation units than in Hungary, but their capacity (number of seats) is lower. On average Bulgaria has the fewest accommodation units and seats in these units, compared to the other two countries taken into analysis.

Keywords: statistical analysis, accommodation units, accommodation capacity, occupancy levels.

INTRODUCTION

Tourism presents the characteristics of a distinct field of activity constituting itself, as some authors appreciate, in a branch of the national economy, a branch which, through its specificity, is integrated in the tertiary sector (Barbu Gh., 1998).

Regarding the role of tourism in the national economy, the literature highlights the fact that it has "a considerable impact on the economies, societies and cultures of different countries of reference"; it has the potential to contribute to employment and economic growth, and the development of rural or less developed areas (Pierre Py, 1986).

The role of tourism both for business sector and for citizens has increased considerably in recent decades. According to European Commission estimates, tourism contributes with more than 5% to the gross domestic product formation (GDP) of the European Union (EUROSTAT, 2014).

Considering these characteristics are necessary reliable and harmonized statistics in this area.

In the last 12 years units with accommodation functions from Romania, Hungary and Bulgaria have seen a constant growth. In the year 2013 in Romania there were 5344 units with accommodation functions in Hungary - 4000, and at the Bulgarian level - 2953 accommodation units (EUROSTAT, 2014).

Regarding the accommodation capacity of these units in 2013 in Romania there were 291,244 accommodation seats, in Hungary – 422,039, and in Bulgaria – 302,433 (EUROSTAT, 2014).

In the same year, 2013, occupancy level of accommodation capacity in Romania was 29.5%, in Hungary 33.5% and in Bulgaria 39.5% (Eurostat, 2014).

The occupancy level or the accommodation capacity utilization coefficient (Cucci) is a representative indicator for the accommodation activity. It is calculated as a ratio between the capacity occupied or effective used in a given period (month, year), expressed as the number of overnight stays or day-tourist (NZT) and the theoretical capacity or maximum possible, determined by the product of rated capacity (Cn) and the number of functioning days (NZ). (Minciu R., 2005; Băltărețu A., Neacșu N. & Neacșu M., 2010).

MATERIAL AND METHOD

For the elaboration of this paper were collected statistical data from Eurostat's database. Data source was: <http://ec.europa.eu/eurostat>

For the number of units and accommodation seats were collected data from Table 1 and Table 2

Tab. 1 No. of accommodation seats

Year	Bulgaria	Hungary	Romania
2003	158865	347277	273614
2004	190040	336494	275941
2005	221144	329290	283194
2006	247016	315284	287158
2007	266613	314742	283701
2008	271672	302889	294210
2009	281353	301873	302755
2010	276621	311441	311698
2011	274733	304087	278503
2012	301140	382819	285488
2013	302433	422039	303236
2014	314257	435620	308997

Tab. 2 No. of accommodation units

Year	Bulgaria	Hungary	Romania
2003	1059	3517	3569
2004	1306	3001	3900
2005	1555	3117	4226
2006	1844	3056	4710
2007	2018	2956	4694
2008	2128	2924	4884
2009	2250	2993	5079
2010	2272	2954	5222
2011	2321	2892	5003
2012	2758	4071	5113
2013	2953	4000	6027
2014	3163	4176	6191

For occupancy levels of accommodation capacity were collected data from Table 3:

Tab. 3 Occupancy levels

Year	Bulgaria	Hungary	Romania
2012	38,8	32,1	30,1
2013	39,5	33,5	29,5
2014	37,8	35	30,7

For data processing has been used IBM SPSS Statistics V20 program.

RESULTS AND DISSCUSIONS

Study 1) Is the number of places (bed-places) statistically different?

Research hypothesis: There are statistically significant differences between the number of accommodations in Bulgaria, Hungary and Romania.

WE checked the normality of sample distribution of the 3 countries with Kolmogorov-Smirnov test (Drugas M., 2010; Gheorghiu D., 2011):

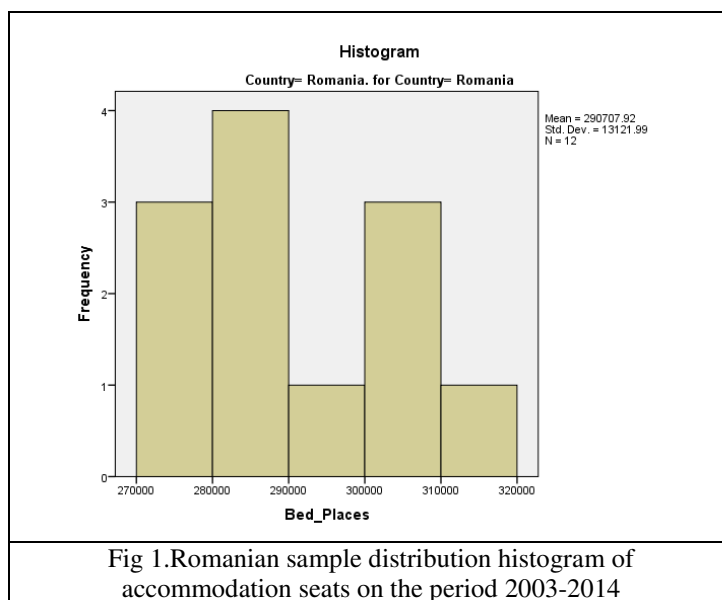
- Bulgaria Ok: sig = 0.073 > 0.05, not significantly different from a normal distribution; average of 258 824 accommodations seats;

- H Ok: sig = 0.127 > 0.05, not significantly different from a normal distribution; average of 341 988 accommodations seats;

- R OK: sig = 0.200 > 0.05, not significantly different from a normal distribution; average of 290 708 accommodation seats.

sig. stand for significance probability

In Figure 1 we have illustrated Romanian sample distribution histogram:



To determine the statistical differences between the three countries we have applied the ANOVA test for univariate. We applied Bonferroni correction to avoid a false positive result, considering the small size of the samples (12 measures) (Howitt D., 2006; Jaba E., 2004). In Table 4 can be seen the results:

Tab. 4 Results of univariate ANOVA test with Bonferroni correction for the Number of accommodations

Multiple Comparisons

Dependent Variable: Bed_Places
Bonferroni

(I) Country	(J) Country	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Bulgaria	Hungary	-83164.00*	15933.783	.000	-123352.39	-42975.61
	Romania	-31884.00	15933.783	.161	-72072.39	8304.39
Hungary	Bulgaria	83164.00*	15933.783	.000	42975.61	123352.39
	Romania	51280.00*	15933.783	.009	11091.61	91468.39
Romania	Bulgaria	31884.00	15933.783	.161	-8304.39	72072.39
	Hungary	-51280.00*	15933.783	.009	-91468.39	-11091.61

Based on observed means.

The error term is Mean Square(Error) = 1523312582.144.

*. The mean difference is significant at the 0,05 level.

According to the results of Tab. 4 Hungary differ significantly statistically from Bulgaria and Romania having more beds as absolute number (Bulgaria / Hungary sig. = 0.000 <.05, Romania / Hungary sig. = 0.009 <0.05) and Romania does't differ statistically from Bulgaria (sig . = 0.161 > 0.05).

Study 2) Is the number of accommodation units statistically different?

We checked the normality of distribution with Kolmogorov-Smirnov test:

- Bulgaria Ok: sig = 0.200 > 0.05, not significantly different from a normal distribution; average of 2136 accommodation units;

- Romania Ok: sig = 0.200 > 0.05, not significantly different from a normal distribution; average of 4885 accommodation units;

Hungarian sample resulted as having a positive asymmetric distribution:

- Hungary No: sig = 0.002 <0.05, significantly different from a normal distribution; average of 3305 accommodation units; Skewness = 1.033 positive asymmetry (several years with a smaller number of accommodation units); the attempt to normalize by extracting the roots and logarithm couldn't solve the distribution of the sample (McQueen R.&Kunussen C., 2006; 15. Opariuc D., 2009; Sava F., 2011).

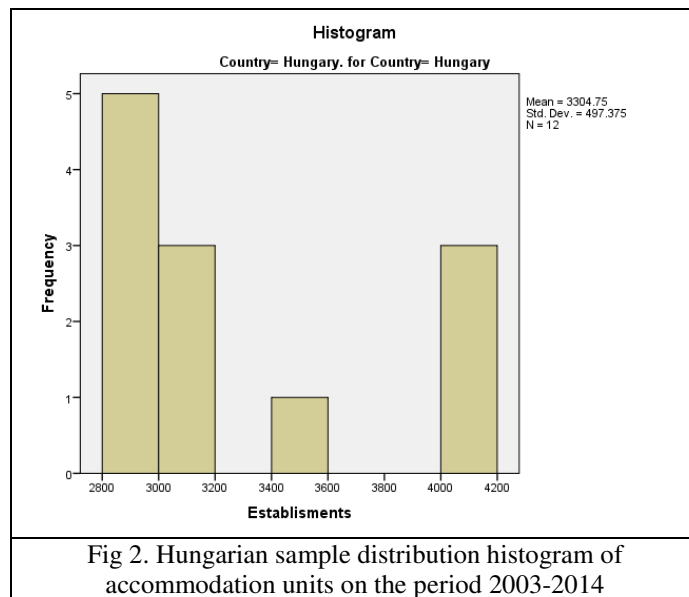


Fig 2. Hungarian sample distribution histogram of accommodation units on the period 2003-2014

For this reason for the study of differences we have applied nonparametric Kruskal-Wallis test (Pallant J., 2007; Rateau P., 2004). The statistics results can be seen in Table 5:

Tab. 5. The results for nonparametric test of variance for Number of accommodation units

Ranks			
	Country	N	Mean Rank
Establishments	Bulgaria	12	7,33
	Hungary	12	18,17
	Romania	12	30,00
	Total	36	

Test Statistics(a,b)	
	Establishments
Chi-Square	27,790
df	2
Asymp. Sig.	,000

a Kruskal Wallis Test

b Grouping Variable: Country

As seen in Table 5 all three countries differ statistically (sig. = 0.000 < 0.05) at the number of accommodation units, and we can see that Romania's average is higher.

Study 3) Is the occupancy level of accommodation capacity statistically different?

The occupancy level of accommodation capacity was verified by comparing the values of Table 3.

We notice that in the three countries studied, Hungary follow an upward trend over the three years studied from 32.1% to 35%, ie by 2.9%; while Bulgaria gets a decrease of this indicator from 38.8% in 2012 to 37.8% in 2014, ie 1%.

In Romania is observed a decrease in occupancy level of the accommodation capacity with 0.6% in 2013 compared to 2012, followed by an increase in 2014 of 1,2%.

Analysing the average of the three countries, we observe that the lowest occupancy level of accommodation capacity is presented in Romania, 30.1%, followed by Hungary with 33.5% and Bulgaria is in first place with 38.7%; the value of this indicator is higher in Hungary than in Romania with 3.4%; and in Bulgaria with 8.6% compared to the same country, Romania.

CONCLUSIONS

The conclusion that can be drawn is that Hungary has on average fewer accommodation units but with high capacity (number of seats, beds), while in Romania the situation is reversed: more accommodation units, but low capacity. On average Bulgaria has the fewest beds and accommodation units.

Regarding the average of occupancy levels, Bulgaria is the country with the highest value of this indicator - 38.7% (the average of years 2012-2014), followed by Hungary with 33.5% and Romania 30.1%.

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