

THE STATISTICAL-ECONOMETRIC STUDY OF TOURISTS' OPINION ON ACCOMMODATION AND THE AVERAGE DURATION OF THEIR STAY IN THE RURAL BOARDING HOUSES IN ROMANIA

Zaharia Marian

Petroleum&Gas University, Ploiesti Economic Sciences Faculty Petroleum&Gas University, Bd. Bucuresti, No.39, cod 100680, Ploiesti marianzaharia53@gmail.com +40744654830

Gogonea Rodica-Manuela

Academy of Economic Studies, Bucharest Cibernetic Statistic and Economic Informatics Faculty Academy of Economic Studies, Bd. Dorobanti, No.1-3, district 1, Bucuresti manuela.gogonea@gmail.com +40740377280

Patrascu Aura

Petroleum&Gas University, Ploiesti Economic Sciences Faculty Petroleum&Gas University, Bd. Bucuresti, No.39, cod 100680, Ploiesti patrascuaura@yahoo.com +40745762380

The paper presents a study of tourists' opinion on accommodation and on the average duration of their stay in Romanian rural areas depending on the age, the accommodation comfort category and the average duration of tourists' stay. The survey unit is represented by the ones included in the sample, therefore by the ones who live in Bucharest or transit it and who enjoy rural tourism.

The research is emphasized by the analysis of some correlations which, given the analysed variables (both qualitative and quantitative), represent an association that can be established between tourists' age and the accommodation comfort category, and the average duration of their stay, respectively

Keywords: survey, nonparametric correlation, statistic assumptions, χ^2 test.

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1. Methodological aspects of the survey conducted in Bucharest

Identifying the main aspects of this survey has led to identifying some of its objectives, such as:

- identifying tourists' preferences regarding the type of accommodation provided by this type of tourism;
- finding out the interviewed tourists' opinion concerning the degree of comfort of the accommodation provided by this type of tourism;
- establishing the average duration of tourists' stay.

Defining the hypotheses of this research is strongly connected to elaborating the objectives of the survey.

Given the fact that the features of tourist demand are identified and described, and that the differences between the needs, the attitudes and the opinions of Bucharest's inhabitants are identified, the research will be a descriptive one. It is addressed both to the ones living in Bucharest and to the ones transiting it.

As to the research on the preferences of the people surveyed in Bucharest regarding rural tourism, three interview locations were chosen: ROMEXPO – where the Tourism Fair was held; the following subway stations: Piața Unirii, Armata Poporului, Piața Sudului, Aviatorilor, Gara de Nord, 1 Mai; various “spots” in the following areas: Piața Unirii, Drumul Taberei, Bucur Obor, Televiziune, Piața Romană, Gara de Nord (in the stations of the means of transport, in the vicinity of markets, public institutions or big shops).

This selective research lasted 15 days (the period when the Tourism Fair took place, i.e. in the autumn of 2008).

According to the means of communication with the unit subject to this research a structured form of communication was chosen, i.e. a questionnaire containing 22 questions that the ones

interviewed were asked in the same order and using the same forms; the way of keeping evidence of the answers was the self-recording or the recording of the answers by the ones interviewed. In order to elaborate the sample, the method of simple random sampling was chosen. Thus, 400 persons were included in the sample.

After the questionnaire has been elaborated, it is usually tested before the survey starts. Testing the questionnaire will consist of a pilot-survey where 100 questionnaires must be completed and whose objectives are to validate all the elements used in the survey.

In order to measure the correlations chosen, the χ^2 test is used, which means identifying a hypothesis starting from a supposition not yet demonstrated, i.e. starting from that hypothesis that will be confirmed or not during the survey in the pre-established probability conditions.

Measuring the intensity of the correlations between qualitative and quantitative variables can be carried out by using the method of non-parametric correlation of χ^2 test. This is one of the most adequate theoretical methods that can be used in this survey and for the analysed variables.

If H_0 is considered to be the null hypothesis that admits the random character of differences, supposing that there are no essential differences, H_1 will be considered to be the alternate hypothesis that supposes that there is a difference between the values of the analysed variable.

After identifying the two hypotheses, χ^2 will be calculated and compared with the critical one, the decision to reject the null hypothesis presupposing that $\chi^2_{\text{calculated}} > \chi^2_{\text{theoretical}}$, then the correlation intensity is measured using the association coefficient (C_a).

2. Statistical analysis of the potential tourists’ opinion on the accommodation and the average duration of their stay in the boarding houses of Romania

Identifying the dimension and the structure of the sample are the main elements that lie at the basis of elaborating the sample.

In this context the emphasis is placed upon structuring the sample according to participants’ age, which will help to identify the participants’ preferences regarding rural tourism, as follows:

Table 1. The number of persons surveyed and their group structure according to their age

Group	Number of person	Structure (%)
under 25	44	11.00
25-35	60	15.00
35-45	98	24.50
45-55	130	32.50
55-65	46	11.50
over 65	22	5.50
TOTAL	400	100

Most of the people surveyed who enjoy rural tourism (32.5%) are aged between 45 and 55. The second place belongs to the ones aged between 35 and 45 (24.5%), and the third to the ones aged between 25 and 35 (15%). The percentages of 11.5% and 11% belong to the ones aged between 55 and 65 and to the ones below 25, and the ones who are over 65 and who enjoy this type of tourism are very few (5.5%).

The development of rural tourism has led to the improvement of accommodation because it plays a significant role in tourists’ decision to extend their stay or not.

One of tourists’ top preferences in point of accommodation are rural households due to their exterior and interior design typical of certain ethnographic areas.

As regards the accommodation in rural households, the survey focused on two aspects: the type of accommodation and the degree of comfort. Both are influenced by many factors such as tourists' age and occupation.

As for the **type of accommodation** that the people surveyed prefer, the following aspects were revealed:

Table 2. The number of persons surveyed and their group structure according to the type of accommodation

The type of accommodation	Number of person	Structure (%)
villas or bungalows	80	20.00
rustic hotels	58	14.50
motels	33	8.25
boarding houses	120	30.00
country farms	109	27.25
TOTAL	400	100

The pie chart illustrates the distribution of preferences for different types of accommodation. The largest segment is boarding houses at 30%, followed by country farms at 27.25%, villas or bungalows at 20%, rustic hotels at 14.5%, and motels at 8.25%.

Most of the people surveyed preferred boarding houses (30%), country farms (27.25%), villas or bungalows (20%), while only 14.50% preferred rustic hotels, and 33.00% motels.

The results of the survey have revealed that the offers regarding the accommodation in rural dwellings could be more varied and are yet to be improved in order to attract a growing number of tourists.

The second important factor in choosing the type of accommodation is the **degree of comfort**.

Table 3. The number of persons surveyed and their group structure according to the accommodation comfort category

Grupe după categoria de confort	Number of person	Structure (%)
one-star	131	32.75
two-star	80	20.00
three-star	135	33.75
fore-star	54	13.50
TOTAL	400	100

The pie chart shows the preference for different levels of accommodation comfort. Three-star accommodation is the most preferred at 33.75%, followed by one-star at 32.75%, two-star at 20.00%, and fore-star at 13.50%.

The survey has led to the conclusion that tourists preferred three-star accommodation (33.75%), as well as one-star accommodation (32.75%), followed by two-star (20.00%) and four-star accommodation (13.5%).

This proves that the people surveyed look for a relatively high degree of comfort (three stars); one-star accommodation is second-ranked because many of the tourists are students, pupils and people having low incomes who do not pay much attention to comfort.

The average duration of tourists' stay is a very important aspect both for social-economic life and for tourism activity. It stands as proof of rural tourism quality.

Table 4. The number of persons surveyed and their group structure according to the average duration of their stay

Average duration of tourists' stay	Number of person	Structure (%)
One-day	78	19.50
Two-day	110	27.50
Three-day	184	46.00
One week	18	4.50
More weeks	10	2.50
Total	400	100

The survey revealed that most tourists (46.00%) preferred a three-day stay in order to spend their spare time in a rural environment, in most cases the ones interviewed mentioning that they preferred to extend their stay over the weekend by arriving one day earlier. This explains the relatively high percentage of tourists (27.50%) who prefer a two-day stay. Tourists who extend their stay to more than one week are the fewest (2.50%). The explanation of this phenomenon is that holidays are divided in such a way that employees could practice other forms of tourism as well in their spare time.

3. Econometric analysis of the potential tourists' opinion on the accommodation in the boarding houses of Romania

The research on tourists' accommodation and on the average duration of their stay in Romanian rural areas can be emphasized by the analysis of some *correlations* which, given the analysed variables (both qualitative and quantitative), represent an *association* that can be established between tourists' age and the accommodation comfort category, and the average duration of their stay, respectively.

The association between the accommodation comfort category and tourists' age

Age influences tourists' choice of the accommodation comfort category – it is known that, in general, youngsters are not demanding when it comes to comfort, while aged people prefer a high degree of comfort.

Checking whether there is an association between the accommodation comfort category and age by using the non-parametric correlation method - the χ^2 test, involves the following steps:

The two hypotheses are stated (null H_0 și alternate H_1)

H_0 - the comfort category does not depend on tourists' age.

H_1 - the comfort category depends on tourists' age.

◆ the calculation of the theoretical function: $f_t = \frac{\sum l \cdot \sum c}{T}$ (where: l = line, c = column, T = total);

The results being $f_{11} = 14,41$; $f_{12} = 19,65$; $f_{13} = 32,1$; $f_{14} = 42,58$; $f_{15} = 15,07$; $f_{16} = 7,21$

$f_{21} = 8,8$; $f_{22} = 12$; $f_{23} = 19,6$; $f_{24} = 26$; $f_{25} = 9,2$; $f_{26} = 4,4$

$f_{31} = 14,85$; $f_{32} = 20,25$; $f_{33} = 33,08$; $f_{34} = 43,88$; $f_{35} = 15,19$; $f_{36} = 7,43$

$$f_{41} = 5,94; f_{42} = 8,1; f_{43} = 13,23; f_{44} = 17,55; f_{45} = 6,21; f_{46} = 2,97$$

◆ determining the calculated χ^2 : $\chi^2 = \sum \frac{(f_e - f_t)^2}{f_t} = 67.73$ (f_e = empirical function, f_t =

theoretical function)

◆ comparing the calculated χ^2 (67.73) with theoretical χ^2 ($\chi^2_{\text{tab}} = \chi^2_{(l-1)(c-1); \alpha} = \chi^2_{(4-1)(6-1); 0,05} = \chi^2_{15; 0,05} = 25$), in order to reach a final conclusion. The compared results, $\chi^2_{\text{calculated}} = 67.73 > \chi^2_{\text{tab}} = 25$, have led to the conclusion that choosing the accommodation comfort category depends on tourists' age.

The calculation of the association coefficient $C_a = \sqrt{\frac{\chi^2}{n + \chi^2}} = \sqrt{\frac{67.73}{400 + 67.73}} = 0.381$ emphasizes

the fact that tourists' age has a certain influence on their choice of the comfort category, but it is relatively small.

The association between the average duration of tourists' stay and their age

The conclusion we have reached so far is that the average duration of tourists' stay **depends** on their age.

The degree of dependence is identified by calculating the association coefficient, whose value – 0,527 – indicates a direct correlation of medium intensity.

Age can play a significant role in tourists' choice of the average duration of their stay, therefore this association can be analysed in point of its intensity as well.

Checking whether there is an association between the accommodation comfort category and age by using the non-parametric correlation method - the χ^2 test, involves the following steps:

The two hypotheses are stated (null H_0 și alternate H_1)

H_0 - the comfort category does **not** depend on tourists' age.

H_1 - the comfort category **depends** on tourists' age.

◆ the calculation of the theoretical function: $f_t = \frac{\sum l \cdot \sum c}{T}$ (where: l = line, c = column, T = total);

$$\text{The results being } f_{11} = 8,58; f_{12} = 11,7; f_{13} = 19,11; f_{14} = 25,35; f_{15} = 8,97; f_{16} = 4,29$$

$$f_{21} = 12,1; f_{22} = 16,5; f_{23} = 26,95; f_{24} = 35,75; f_{25} = 12,65; f_{26} = 6,05$$

$$f_{31} = 20,24; f_{32} = 27,6; f_{33} = 46,08; f_{34} = 59,8; f_{35} = 21,16; f_{36} = 10,12$$

$$f_{41} = 1,98; f_{42} = 2,7; f_{43} = 4,41; f_{44} = 5,85; f_{45} = 2,07; f_{46} = 0,99$$

$$f_{51} = 1,1; f_{52} = 1,5; f_{53} = 2,45; f_{54} = 3,25; f_{55} = 1,15; f_{56} = 0,55$$

◆ determining the calculated χ^2 : $\chi^2 = \sum \frac{(f_e - f_t)^2}{f_t} = 153.96$ (f_e = empirical function, f_t =

theoretical function)

◆ comparing the calculated χ^2 (153,96) with theoretical χ^2 ($\chi^2_{\text{tab}} = \chi^2_{(l-1)(c-1); \alpha} = \chi^2_{(5-1)(6-1); 0,05} = \chi^2_{20; 0,05} = 31.41$), in order to reach a final conclusion. The compared results, $\chi^2_{\text{calculated}} = 153.96 > \chi^2_{\text{tab}} = 31.41$, have led to the conclusion that choosing the accommodation comfort category depends on tourists' age.

Measuring the intensity of the association of the two variables involves the calculation of the

$$\text{association coefficient } C_a = \sqrt{\frac{\chi^2}{n + \chi^2}} = \sqrt{\frac{153.96}{400 + 153.96}} = 0.527.$$

The conclusion reached is that tourists' age has a significant influence on their choice of the comfort category, the association between these two variables being of medium intensity. This is also proved by the value of the association coefficient, namely 0.527.

4. Conclusions

The research conducted on potential tourists in order to find out their opinion of rural tourism represents a starting point in determining the quality of this type of tourism.

The tourist who enjoy rural tourism are aged between 35-55 (total 57%) and the preferred accommodation structures are boarding houses and country farms (total 57.25%).

Concerning the degree of comfort, the preferences are approximately the same for one-star and three-star accommodation, followed by two-star accommodation.

On the other hand, choosing accommodation comfort depends on tourists' ages, but it is relatively small. Also, the average duration of tourists' stay depends on their age, having a medium intensity.

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