

## **Study on Tourist Traffic Analysis for Tourism Area Planning in the Town of Moreni, Dâmbovița County**

**Adelaida Cristina HONTUȘ**

University of Agronomical Sciences and Veterinary Medicine - Bucharest, Faculty of Management,  
Economical Engineering in Agriculture and Rural Development, Romania;  
[adelaidahontus@yahoo.com](mailto:adelaidahontus@yahoo.com)

**Abstract.** Promoting tourism areas is very important to attract new tourists. Thus, to better promote existing attractions and Dâmbovița county, the town Moreni was an analysis of tourist traffic on tourism supply and demand by calculating the most representative tourism indicators: the average daily number of tourists, number of overnight stays, the average of stays, tourist traffic density and capacity utilization coefficient of accommodation as well as other indicators. The statistics were taken from INSSE Bucharest and Dâmbovița and statistically processed and interpreted.

**Keywords:** tourist attraction, tourism indicators, tourism service.

### INTRODUCTION

Tourism is a form of leisure, so this led to the development of tourism in our country, regardless of the form it takes, be it business travel, seaside, mountain, or other forms of tourism. In the mountain tourism one can find a wide range of forms of tourism, which plays a special place to it, while being a preferred destination for recovery, rest, adventure or other socio-cultural needs (Honțuș, 2005). The mountainous area has attracted the attention of investors and tour organizers because of the opportunities for effective development of tourism activities so that we can speak today about the existence, in the world, offers a complex, diverse and highly attractive (Honțuș, 2009). Dâmbovița County, though it is one of the counties with the lowest expanse, diverse landscape, rich historical monuments, cultural and spiritual local customs, the level of infrastructure development and exploitation allows practicing different forms of tourism throughout Dâmbovița (Cretu, 2005).

### MATERIALS AND METHODS

Analysis of tourist traffic regarding tourism supply and demand in an area or a tourism unit is done in order to find opportunities for development and tourist planning in the area. The research consists in studying the tourist mountain planning of Moreni town. The objective of this study is to analyze the tourist traffic in “Valahia” Hotel, town of Moreni, in order to determine whether the area is sought after by tourists; whether it is possible to extend the tourist base in the area. Hotel “Valahia” is located in the center of Moreni, its activity covers accommodation and service. The 2-star hotel complex has 24 rooms with 2 beds and bathrooms. It is equipped with restaurant and bar. Fully equipped bathrooms, radio / TV, telephone, wireless internet, central heating, air conditioning, minibar.

For this study there were used a series of documents and statistics on tourist traffic in the area, which were provided by representatives of Moreni city hall tourism department, the National Statistics Institute of Dâmbovița County and Bucharest and “Valahia” Hotel representatives.

For tourist traffic analysis there were calculated the following indicators of tourism demand and supply for Hotel “Valahia”, town of Moreni, namely:

1. Index of global tourist demand change:

$$\Delta CG_{0-i} = \frac{CG_i}{CG_0} \cdot 100$$

where:  $CG_i$  - global tourist demand in year „i”;  $CG_0$ - global tourist demand in year „0” (Honțuș, 2005, 2012).

2. Index of global tourist demand distribution, between domestic and foreign demand

$$\Delta CI_{0-i} = \frac{CI}{CG} \cdot 100; \quad \Delta CE_{0-i} = \frac{CE}{CG} \cdot 100$$

where: CI - domestic tourist demand; CE - foreign tourist demand; CG - total tourist demand (Honțuș, 2005, 2012)

3. Index of (domestic and foreign) demand variation in time

$$ICE_{0-i} = \frac{CE_i}{CE_0} \cdot 100; \quad ICI_{0-i} = \frac{CI_i}{CI_0} \cdot 100$$

where:  $ICE_{0-i}$  - the index of variation in external demand;  $ICI_{0-i}$  - - the index of variation in domestic demand (Honțuș, 2005, 2012).

4. The average length of stay for each accomodation facility:

$$S_H = \frac{NH}{T}$$

where: NH - number of hotel nights registered, T - Number of tourists arrive,  $S_H$  - The average stay in the hotel (Honțuș, 2005, 2012).

5. The monthly concentration coefficient is calculated by dividing the number of tourists recorded during the highest-traffic month by the total number of tourists during a year  $A_t$

$$C_c = \frac{LM}{A_t}$$

For this we consider the year 2012 the number of tourists every month (Honțuș, 2005, 2012).

6. Indicator of total accommodation capacity evolution between „0” and „i”

$$\Delta LC_{0-i} = \frac{LC_i}{LC_0} \cdot 100$$

where: LC - no. accommodation in hotel (Honțuș, 2005, 2012).

7. Index of customer evolution between „0” and „i”:

$$\Delta T = \frac{TH_i}{TH_0} \cdot 100$$

where:  $TH_i$  - tourists in hotels in year „i”;  $TH_0$  – tourists in hotels in year „0” (Honțuș, 2005, 2012).

8. Index of overnight stay evolution:

$$\Delta N = \frac{NH_i}{NH_0} \cdot 100$$

where: N – overnight stay (Honțuș, 2005, 2012).

9. Hotel occupancy indicator:

$$G_0 = \frac{NH \cdot 100}{LH \cdot Z} = \frac{NT \cdot S}{LH \cdot Z} \cdot 100$$

where:  $G_0$  - occupancy percentages; NH - Number of overnight stays, LH - number of places in hotels, Z - number of days supply of accommodation = 365 days; NT - number of tourists, S - average length of stay (Honțuș, 2005, 2012)

10. Tourist traffic density

a) Tourist density indicator in relation to population density:

$$D_{t_{i-0}} = \frac{T_{t_{i-0}}}{Population}$$

where:  $T_{i-0}$  - total Romanian+foreign tourists; Pop - local population (Honțuș, 2005, 2012).

b) Tourist density indicator in relation to area

$$D_{t_{i-0}} = \frac{T_{t_{i-0}}}{Area}$$

where:  $T_{i-0}$  - total Romanian+foreign tourists; S - town/village (county) area ( $S = 3,514 \text{ km}^2 = 3514 \text{ m}^2$ ) (Honțuș, 2005, 2012).

11. „Tourist function” indicator

$$F_{t_{i-0}} = \frac{N_{t_{i-0}}}{Population} \times 100$$

where:  $N_{t_{i-0}}$  - No beds; Pop - village population (Honțuș, 2005, 2012).

Analysis and interpretation of these indicators of tourist traffic which helps see the development of the tourism in the area and what steps towards growth, development and tourism development can be taken in this area.

## RESULTS AND DISCUSSIONS

The study on the evolution of the number of nights, the accommodation capacity, the average length of stay, occupancy of accommodation establishments and other specific indicators of tourist traffic, could analyze the evolution of tourist traffic in the Dâmbovița County and at the level of tourist accommodation establishments, namely “Valahia” Hotel in the town Moreni. To calculate indicators of tourism demand and the hotel “Valahia” is necessary to know the indicators of tourist traffic, and they are presented in Tab. 1.

Tab. 1.

Number of nights, number of tourists and average stay at Hotel Valahia

Indicators	2008	2009	2010	2011	2012
Number of nights	10.012	10.344	10.893	12.167	12.043
Number of Romanian tourists	7008	7447	8060	9246	8189
The number of foreigners tourists	2002	2068	2178	2433	2408
Total number of tourists	9010	9515	10238	11679	10597
Accommodation	48	48	48	48	48
Romanian average stay	1,42	1,39	1,35	1,31	1,47
Average stay of foreigners	5,00	5,00	5,02	5,05	5,03
Places accommodation village	48	48	48	48	48

Source - Data provided by hotel Valahia

*The average stay = no. of overnights / no. tourists*

Of tourism demand and supply indicators we analyze:

1). Index of global tourist demand change:

$$\Delta CG_{2008-2009} = (9515/9010) \times 100 = 105,60\%$$

$$\Delta CG_{2009-2010} = (10238/9515) \times 100 = 107,59\%$$

$$\Delta CG_{2010-2011} = (11679/10238) \times 100 = 114,07\%$$

$$\Delta CG_{2011-2012} = (10597/11679) \times 100 = 90,07\%$$

Global tourism demand in the period 2008-2011 has grown over 100% each year, reaching in 2011 an increase of 14%. In 2012 fell by almost 10% global tourism demand.

2). Index of global tourist demand distribution, between domestic and foreign demand:

$$\Delta CI_{2008} = (7008/9010) * 100 = 77,7\% \text{ (romanian)}$$

$$\Delta CE_{2008} = (2002/9010) * 100 = 22,2\% \text{ (foreign)}$$

$$\Delta CI_{2009} = (7447/9515) * 100 = 78,2\% \text{ (romanian)}$$

$$\Delta CE_{2009} = (2068/9515) * 100 = 21,73\% \text{ (foreign)}$$

$$\Delta CI_{2010} = (8060/10238) * 100 = 78,3\% \text{ (romanian)}$$

$$\Delta CE_{2010} = (2178/10238) * 100 = 21,2\% \text{ (foreign)}$$

$$\Delta CI_{2011} = (9246/11679) * 100 = 79,16\% \text{ (romanian)}$$

$$\Delta CE_{2011} = (2433/11679) * 100 = 20,8\% \text{ (foreign)}$$

$$\Delta CI_{2012} = (8189/10597) * 100 = 77,2\% \text{ (romanian)}$$

$$\Delta CE_{2012} = (2408/10597) * 100 = 22,7\% \text{ (foreign)}$$

Regarding the distribution of global tourism demand for both domestic tourists and those external to the calculations, we can see that the highest number of tourists who come to the Valahia hotel are Romanian, and the highest percentage was recorded in 2011 79.16%, while the number of foreign tourists is lower compared to domestic tourists, with an almost constant rate period, around 21%, with the highest rate in 2012 of 22.7 %.

3). Index of (domestic and foreign) demand variation in time:

$$ICE_{2008-2009} = (2068/2002) * 100 = 103,29\%; \text{ (foreign)}$$

$$ICI_{2008-2009} = (7447/7008) * 100 = 106,26\%; \text{ (romanian)}$$

$$ICE_{2009-2010} = (2172/2068) * 100 = 105,02\%; \text{ (foreign)}$$

$$ICI_{2009-2010} = (8060/7447) * 100 = 108,23\%; \text{ (romanian)}$$

$$ICE_{2010-2011} = (2433/2172) * 100 = 112,01\%; \text{ (foreign)}$$

$$ICI_{2010-2011} = (9246/8060) * 100 = 114,71\%; \text{ (romanian)}$$

$$ICE_{2011-2012} = (2408/2433) * 100 = 98,97\%; \text{ (foreign)}$$

$$ICI_{2011-2012} = (8189/9246) * 100 = 88,56\%; \text{ (romanian)}$$

From the above table it is noted that in the period 2008-2011 increased domestic tourism demand, the maximum rate of growth of 14.71% and in 2011-2012 decreased to 11.44%. External demand has also increased as a percentage of 12.01% in 2011 and in 2012 fell to 1.03%.

4). The average length of stay for each accommodation facility:

$$S_{H2008} = 10012/7008 = 1,42 \text{ (romanian)}$$

$$S_{H2008} = 10012/2002 = 5,00 \text{ (foreign)}$$

$$S_{H2009} = 10344/7447 = 1,39 \text{ (romanian)}$$

$$S_{H2009} = 10344/2068 = 5,00 \text{ (foreign)}$$

$$S_{H2010} = 10893/8060 = 1,35 \text{ (romanian)}$$

$$S_{H2010} = 10893/2178 = 5,02 \text{ (foreign)}$$

$$S_{H2011} = 12167/9246 = 1,31 \text{ (romanian)}$$

$$S_{H2011} = 12167/2433 = 5,05 \text{ (foreign)}$$

$$S_{H2012} = 12043/8189 = 1,47 \text{ (romanian)}$$

$$S_{H2012} = 12043/2408 = 5,03 \text{ (foreign)}$$

After calculations on the average stay of tourists both foreign and Romanian one can see that for Romanian tourists, an average stay is of about 1 day and a half, and for foreign tourists the stay is of an average of about 5 days.

5). The monthly concentration coefficient is calculated by dividing the number of tourists recorded during the highest-traffic month by the total number of tourists during a year  $A_t$

$$C_c = \frac{LM}{A_t}.$$

For this we consider the year 2012 the number of tourists every month.

Tab. 2.

Monthly concentration of tourists in hotel "Valahia"

Jan.	Feb.	Mart.	Apr.	Mai	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
534	556	590	745	878	862	934	1102	1115	1230	1098	953

$$C_{ian}=(534/10597)*100=5,03$$

$$C_{feb}=(556/10597)*100=5,24$$

$$C_{mar}=(590/10597)*100=5,56$$

$$C_{apr}=(745/10597)*100=7,03$$

$$C_{mai}=(878/10597)*100=8,28$$

$$C_{iun}=(862/10597)*100=8,13$$

$$C_{iul}=(934/10597)*100=8,81$$

$$C_{aug}=(1102/10597)*100=10,39$$

$$C_{sept}=(1115/10597)*100=10,52$$

$$C_{oct}=(1230/10597)*100=11,60$$

$$C_{noi}=(1098/10597)*100=10,36$$

$$C_{dec}=(953/10597)*100=8,99$$

Because the period from August to November, the number of tourists is the maximum monthly concentration quotient highest value recorded in October.

6). Indicator of total accommodation capacity evolution between „0” and „i”

$$\Delta LC_{2008-2012}=(48/48)*100=100\%$$

The indicator for total development capacity at "Valahia" Hotel does not change because the number of available rooms in this hotel has not changed during the analysis, remaining of 48 rooms.

7). Index of customer evolution between „0” and „i”:

$$\Delta T_{2008-2009}=(7447/7008)*100=106,26\% \text{ (romanian)}$$

$$\Delta T_{2008-2009}=(2068/2002)*100=103,29\% \text{ (foreign)}$$

$$\Delta T_{2009-2010}=(8060/7447)*100=108,23\% \text{ (romanian)}$$

$$\Delta T_{2009-2010}=(2178/2068)*100=105,31\% \text{ (foreign)}$$

$$\Delta T_{2010-2011}=(9246/8060)*100=114,71\% \text{ (romanian)}$$

$$\Delta T_{2010-2011}=(2433/2178)*100=111,70\% \text{ (foreign)}$$

$$\Delta T_{2011-2012}=(8189/9246)*100=88,56\% \text{ (romanian)}$$

$$\Delta T_{2011-2012}=(2408/2433)*100=98,97\% \text{ (foreign)}$$

The evolution in customers at Hotel Valahia experienced year on year growth in 2008-2010, both for the Romanian and foreign tourists. From an increase of 6.26% in 2008 to customers in our country has reached a growth of 14.7% in 2011, and for foreign clienții an increase of 3.3% in 2008 to reach a increase of 11.7% in 2010. In the period 2011-2012, so

no. domestic tourists and foreign ones had a downward trend, reaching a decrease of 1.5% in 2012 and foreign clientele has decreased by 1.03% in 2012.

8). Index of overnight stay evolution:

$$\Delta N_{2008-2009} = (10344/10012) * 100 = 103,31\%$$

$$\Delta N_{2009-2010} = (10893/10344) * 100 = 105,30\%$$

$$\Delta N_{2010-2011} = (12167/10893) * 100 = 111,69\%$$

$$\Delta N_{2011-2012} = (12043/12167) * 100 = 98,98\%$$

The evolution of hotel nights spent in the Valahia had an upward trend during the period 2008-2011, from 3.31% in 2008 it reached 11.7% in 2011, then in 2012 the number of overnight stays of tourists both Romanian and foreign, reaching 1.02%.

9). Hotel occupancy indicator:

$$G_{2008} = [10012 / (48 * 365)] * 100 = 57,14\%$$

$$G_{2009} = [10344 / (48 * 365)] * 100 = 59,04\%$$

$$G_{2010} = [10893 / (48 * 365)] * 100 = 62,17\%$$

$$G_{2011} = [12167 / (48 * 365)] * 100 = 69,44\%$$

$$G_{2012} = [12043 / (48 * 365)] * 100 = 68,73\%$$

Valahia Hotel occupancy in the period 2008-2011 had an increasing trend, from 57% in 2008 reaching a rate of almost 70% in 2011, after which the following year, 2012 the occupancy at the hotel had a small decrease, reaching a rate of 68.7%.

10). Tourist traffic density

a. Tourist density indicator in relation to population density:

Tab. 3.

Data on total population and tourists arrive

Years	2008	2009	2010	2011	2012
Population village	21.178	20.930	20.558	20.446	18.023
Total Tourists arrivals	9010	9515	10238	11679	10597

Source - Data derived from processing and Inse

$$D_{2008} = (9010/21178) = 0,42$$

$$D_{2009} = (9515/20930) = 0,45$$

$$D_{2010} = (10238/20558) = 0,49$$

$$D_{2011} = (11679/20446) = 0,57$$

$$D_{2012} = (10597/18023) = 0,58$$

There is a decline in population throughout the 2008-2012 reporting period, and the number of tourists was increasing. The tourist traffic density in relation to its population had an increasing trend, from a 0.42 tourists/population share in 2008 reached a rate of 0.58 tourists/population in 2012, an increase of 0.16 tourists/population.

b. Tourist density indicator in relation to area

$$S = 3,514 \text{ km}^2 = 3514 \text{ m}^2,$$

$$D_{2008} = (9010/3514) = 2.56$$

$$D_{2009} = (9515/3514) = 2.70$$

$$D_{2010} = (10238/3514) = 2.91$$

$$D_{2011} = (11679/3514) = 3.32$$

$$D_{2012} = (10597/3514) = 3.01$$

If tourist traffic density compared to the area of the town, given that the total number of tourists had both increases and decreases in the period 2008-2011 tourism increased density by 0.76 in 2011 compared to 2008 and 2012 decreased by 0.30 over the previous year.

11). „Tourist function” indicator

$$F_{2008}=(48/21178)*100=0,22\%$$

$$F_{2009}=(48/20930)*100=0,22\%$$

$$F_{2010}=(48/20558)*100=0,23\%$$

$$F_{2011}=(48/20446)*100=0,23\%$$

$$F_{2012}=(48/18023)*100=0,26\%$$

The tourism fared almost constant since the number of accommodation in the hotel has not changed, also the local population was not largely fluctuant. The tourism in the period had an average of 0.23%, with little growth in 2012 of 0.03% compared to previous years.

## CONCLUSION

Although Dâmbovița County is one of the counties with small area with an industry which is highly developed, it is still a tourist area of great interest because of the many vestiges of the past history and monuments of art of considerable value.

A sustainable tourism development in the area involves the pursuit of achieving a comprehensive policy for the preservation and sustainable development of tourism in Dâmbovița to improve quality of life, strengthen the economy and local communities and conservation of natural and cultural heritage values.

Regarding Hotel Valahia, one can see that global tourism demand in the period 2008-2011 has grown over 100% each year between 5% in 2008 and 14% in 2011, which was the year with the greatest increase in global travel demand, and in 2012 fell by 24% over the previous year reaching 90%. This is due to high quality tourist demand services offered by the accommodation facilities.

After calculations on the average stay of tourists both foreign and Romanian one can see that for Romanian tourists, the average stay is of about 1 day and a half, and for foreign tourists the stay is of an average of about 5 days.

Monthly concentration of tourists in Hotel Valahia has higher percentages in October with a percentage of 11.60%, 10.52% in September, August of 10,39% and November of 10,36% in other months of the year calculating the percentage is lower, because the lower number of tourists. This increase in certain months of the year is due to tourists wanting to visit the sights of both the local and surrounding area to attend some fairs held during those periods, to know the different habits of the area.

Customer evolution and the hotel occupancy has increased slightly each year and the number of nights reach a maximum in 2011.

The analysis of interest in relation to the population density of the town finds that it is growing up in 2012 as opposed to population declines by 2012. Taking the size of town tourism density increases until 2011, then dropped slightly.

From the above analysis one can see that the hotel Valahia is preferred among both foreign and Romanian tourists due to existing parks and landscaping in the area, the many sights and some specific fairs. Also it is chosen by tourists and business people because the hotel is situated at the crossroads DJ 710A and D. J. 720 high economic and tourist interest road.

## REFERENCES

1. Crețu, R.C. (2005). Agro Resources, University Publishing House, Bucharest.
2. Honțuș, A.C. (2005). Geography of the Romanian tourism and agritourism, Ceres Publishing House, Bucharest.
3. Honțuș, A.C. (2009). Geography of the Romanian tourism and agritourism, Ceres Publishing House, Bucharest.
4. Honțuș, A.C. (2005). Spatial and agrotouristic territory, Ceres Publishing House, Bucharest.
5. Honțuș, A.C. (2012). Tourist traffic analysis in House “Sunshine” from the Breaza Prahova, Iași, "Ion Ionescu de la Brad" Publishing House. Scientific Papers Agronomy. 55.
6. Moreni Hall.
7. Dâmbovița County Council.
8. Law approving the National Spatial Plan, Official.
9. [www.insse.ro](http://www.insse.ro)