Aspects of the Evolution of the Romanian Tourists' Preferences Concerning the Domestic Tourist Destinations

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Abstract

Tourist services represent a category of services in which the inseparability of production and consumption, the inability to be storable, the immateriality, and last but not least non-durability, induces in tourism management a number of peculiarities and difficulties. Under these circumstances the development of medium-term strategies involves long-term studies regarding on the one hand the developments and characteristics of the demand, and on the other hand the tourist potential analysis at regional and local level. Although in the past 20 years there has been tremendous growth of on-line booking made by household users, the tour operators agencies as well as those with sales activity continue to offer the specific services for a large number of tourists, that number, in the case of domestic tourism, increased by 1.6 times in case of the tour operators and by 4.44 times in case of the agencies with sales activity. At the same time, there have been changes in the preferences of tourists regarding their holiday destinations in Romania. Started on these considerations, paper based on a logistic model, examines the evolution of the probabilities and scores corresponding to the way the Romanian tourists spend their holidays on the types of tourism agencies, actions and tourist areas in Romania.

Keywords: *Romania, tourist areas, travel agency, logistic model, scores*

JEL Classification: C25, R11, Z32

Introduction

Due to the particularity of the relations between tourist demand and supply, it is quite difficult to analyse the flows of tourists as well as their use in substantiating the tourist services offer, largely due to the dynamics of the preferences [Gogonea et al., 2009] and the resources of the tourists, applied policies [Andrei et al., 2014] and the requirements on environmental protection [Davidescu et al., 2014]. In the study of these aspects were used mostly quantitative models based on linear regressions [Gogonea & Zaharia, 2013] or uni or multidimensional nonlinear regressions.

In addition to these approaches, an important role is played by the use of both binary and multivariate binary models. These models are increasingly applicable both in the study of economic phenomena and in a number of other areas. These include the study of policies of electronic commerce [Bernal García et al., 2006], determine the probability of bankruptcy enterprises [Spuchlakova & Kovacova, 2015] or predict the corporate bankruptcy probability in economic crises [Brindescu-Olariu & Golet, 2013], social groups investigation [McCartney & Glass, 2015], analysis of the relationship between traffic flow, speed and density in transport engineering [Wang et al., 2006] and so on.

Taking into account these considerations, the paper briefly analyses the evolution of tourists' preferences on the destination, both in time and on types of travel agencies using logistic regression models.

1. Methodology and data

For the study of the evolution of Romanian tourists' preferences for domestic destinations, the main methods used were binary and multinomial regression methods. For this purpose, 4515 records were generated containing tourists' preferences regarding the type of tourist agency, the destination and the year in which the stays were made.

The general form of the regression mode:

$$\ln(odds) = \ln(k) + \sum_{i=1}^{n} \ln(OR_i) = a + \sum_{i=1}^{n} B_i \cdot x_i \quad (1)$$

where: $odds = \dfrac{p}{1-p}$ represents the value of odds to realize the event whose likelihood ratio is p, $OR_k = \dfrac{odds_k}{odds_{baza}}$ is Odds Ratio, and n is number of factorial variables. In the first part of the analysis, two factorial variables were used: the type of travel agency and the year of the stay, and the dependent variable was the chosen destination.

After generating the models and validating their statistical significance, have been determined odds values to opt for a specified destination according to factorial variables:

$$odds_i = e^{\ln(k) + \sum_{i=1}^{n} \ln(OR_i)} = e^{a + \sum_{i=1}^{n} B_i \cdot x} \quad (2)$$

Upon validation of type models (1), was mainly used 95% Confidence level ($\alpha = 0.05$). In some situations, was also used 90% Confidence level ($\alpha = 0.1$).

The main source of data, from which the 4515 records were generated, was "*The number of Romanian tourists participating in domestic tourism activities organized by tourism agencies on tourist areas*" [NIS, 2018].

The values of variables used in the analysis as well as their meanings are presented in Table 1. Of these, for the Destination variable, the base value is SEA, for the Agency variable the base is TOA, and for the Year variable base is 2017.

Table 1.

Values and significances of variables included in the analysis

VARIABLES	VALUES	SIGNIFICANCES
Destination	CLT	Cultural tourism
	MNT	Mountain area
	RLG	Religious pilgrimage
	SEA	Seaside area
	SPA	Spa area
Agency	ASA	Agencies with sales area
	TOA	Agencies & tour operators
Year	2009-2017	Years of the period under review

The main objective of the paper is to highlight the evolution of tourists' preferences regarding one of the six destinations initially included in the analysis. For this purpose, data processing was performed using SPSS.

2. Results and discussions

The evolution of the total number of Romanian tourists who opted for travel agencies through travel agencies, for a stay in destinations from Romania in the period under review had a generally upward trend (Figure1). In absolute numbers, were recorded by the SEA (254,835 tourists), followed by MNT (56,565 tourists), RLG (27,497 tourists), and SPA (12,714 tourists). A significant exception is recorded by cultural tourism where the number of tourists registered in tourism agencies in 2017 was lower than the one registered in 2009.

Figure 1.

Evolution of tourists' number per destination in 2009 – 2017 period

(Source: Authors elaboration)
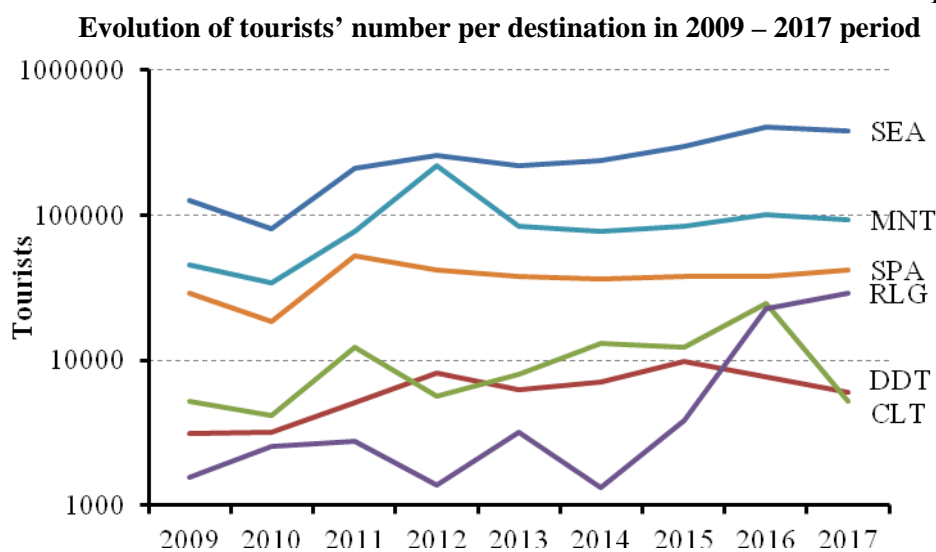
From the point of view of the average annual growth rates, RLG (44.19%) ranked first, followed by SEA (14.79%), MNT (9.18%), DDT (8.62%) and SPA (4.62%). Regarding the travel agencies, during the analysed period, tour operators were the first with a significant share, where in 2017 there were 540306 tourists more than in 2009, while in the tourism agencies with sales activity the number of registered tourists decreased.

In the period under review, seaside tourism detached leads in the tourists' preferences. Moreover, its evolution was linear, of the form:

$$SEA(t) = 68423 + 35599 \cdot t + \varepsilon \quad t = \overline{0,8}; \quad (3)$$

In regression model (1) t=0 corresponds to 2009 year. The regression model is statistically significant, both as a whole (R^2=0.85199, Significance_F=0.0003<α=0.05), and from the point of view of coefficients (t_statistic=3.896 for intercept and 6.347 for regressor, values much greater than t_critic). Taking into account these characteristics, in the logistic models tested SEA was chosen reference category and has been tested on the existence of logistic models (1) to analyse the evolution of the odds of choosing one or another tourist destination (Table 2).

Table 2.

Characteristics of multinomial model

	Destination[a]	B	Sig.	Exp(B)		Destination[a]	B	Sig.	Exp(B)
MNT	Intercept	-1.414	.000		**SPA**	Intercept	-2.253	.000	
	[Agency=ASA]	.031	.793	1.031		[Agency=ASA]	.369	.014	1.446
	[Agency=TOA]	0				[Agency=TOA]	0		
	[Year=2010]	.537	.023	1.710		[Year=2009]	.618	.021	1.855
	[Year=2011]	.415	.018	1.514		[Year=2010]	.630	.042	1.877
	[Year=2012]	1.249	.000	3.489		[Year=2011]	.800	.000	2.225
	[Year=2013]	.352	.052	1.422		[Year=2012]	.407	.081	1.502
	[Year=2017]	0		1		[Year=2017]	0		1
CLT	Intercept	-4.490	.000		**RLG**	Intercept	-2.518	.000	
	[Agency=ASA]	.927	.000	2.528		[Agency=ASA]	-.706	.100	.493
	[Agency=TOA]	0[b]				[Agency=TOA]	0		
	[Year=2010]	1.121	.100	3.067		[Year=2011]	-1.672	.006	.188
	[Year=2011]	1.451	.007	4.269		[Year=2012]	-3.016	.003	.049
	[Year=2014]	1.286	.016	3.618		[Year=2013]	-1.635	.008	.195
	[Year=2015]	.993	.066	2.700		[Year=2014]	-2.833	.006	.059
	[Year=2016]	1.408	.005	4.089		[Year=2015]	-1.965	.001	.140
	[Year=2017]	0		1		[Year=2017]	0		1

a.　The reference category is: SEA.
b.　This parameter is set to zero because it is redundant.
(Source: Authors elaboration using SPSS)

In Romania, although there are a number of significant natural resources, spa tourism is still poorly developed. Compared to seaside tourism, the highest value of odds for spa tourism, in case of tour operators was recorded in 2011:

$$odds_{SPA\_TOA\_2011} = e^{(-2.253+0.0+0.8)} = 0.234 \quad (4)$$

This means that tour operators agencies, the odds of picking the seaside tourism versus spa tourism was 4.28. In other years, the odds of choosing spa tourism recorded values between 0.197 in 2010 year and 0.105, in 2017 year.

In tourism agencies with sales activity, the odds of spa tourism compared to seaside tourism are higher than case of tour operators agencies. The highest value being recorded also in 2011:

$$odds_{SPA\_ASA\_2011} = e^{(-2.253+0.369+0.8)} = 0.338 \quad (5)$$

Other values of odds there have been between 0.285, in 2010 year, and 0.152, in 2017 year. At the level of the year 2011, odds to choose for seaside tourism compared to spa tourism through travel agencies with sales activity was 2.96.

On the other hand, in the period under review, the odds of choosing the spa tourism, both through tour operators and travel agencies with sale activity had a downward trend. This fact is evidenced by the values of OR (column Exp (B)) which are greater than 1 (value corresponding to the reference year, 2017). These values show an increase in the option for spa tourism in the period 2009 - 2011 followed by a decline until 2017.

Mountain tourism is an important option for travel agencies customers, being practically the second intensity of tourists' flows after seaside tourism. Due to the very large dispersions of the flows of tourists who opted for mountain tourism through sales agencies, the resulting models for this category are not statistically significant for either 95% or 90% confidence, which is evidenced by the value Sig = 0.793> α = 0.1 corresponding to the B coefficient, for Agency = ASA.

Regarding mountain tourism through operator tour agencies, the highest value of the odds was recorded in 2012:

$$odds_{MNt\_TOA\_2012} = e^{(-1.414+0.0+1.249)} = 0.849 \quad (6)$$

This value highlights the fact that in 2012, the odds of opting for seaside tourism in comparison with mountain tourism was 1,178. On the other hand, compared to the reference year (2017), the odds of opting for mountain tourism grew up in 2012, when was 3,489 times greater than in 2017. After the year 2012 the general trend was decreasing.

In the case of cultural tourism, the highest value of the odds towards the coastal tourism through operator tour agencies registered in 2011:

$$odds_{CLT\_TOA\_2011} = e^{(-4.490+1.451)} = 0.048 \quad (7)$$

Close values were recorded in the 2016 (0.046), and 2014 (0.034), the lowest value being recorded in 2017 (0.011). Considering that the difference is significant (of 4.36 times

lower), this can be considered an exception. Taking into account these developments, it is expected that in the next two years, the odds of choosing cultural tourism through tour operators' agencies will reach around 0.033.

In the case of travel agents with sales activity, the maximum value of odds was recorded also in the year 2011:

$$odds_{CLT\_ASA\_2011} = e^{(-4.490+0.927+1.451)} = 0.121 \quad (8)$$

It is worth noting that the values of odds of choosing cultural tourism versus seaside tourism are significantly higher in case of travel agents with sales activity toward agencies tour operator.

Comparing the evolutions of the Exp (B) values recorded in the analysed period compared to the base year, there is a dramatic reduction in the options of tourists who plan their stays through tourism agencies for cultural tourism.

The fourth tourist destination analysed is the religious pilgrimage. Although the odds are lower than in the case of cultural tourism, "Sig." Values highlight the existence of statistically significant models for most of the years included in the analysed period. In the case of religious tourism, the highest odds of both tour operators and travel agencies were recorded in 2017:

$$odds_{CLT\_TOA\_2017} = e^{(-2.518+0.0+0.0)} = 0.081 \quad (9)$$
$$odds_{CLT\_ASA\_2017} = e^{(-2.518-0.706+0.0)} = 0.040 \quad (10)$$

However, unlike the other tourist destinations analysed, in the case of religious tourism there is a significant increase in the options for this destination, as evidenced by the Exp (B) values that are significantly lower than 1.

Table 3.

Characteristics of binary logistic model and the results of using it

	B	Wald	df	Sig.	Exp(B)	log(odd)	odds_CLT	odds_RLG
Year		31.938	8	.000				
Year(1) 2009	2.674	7.652	1	.006	14.500	0.9163	2.5000	0.4000
Year(2) 2010	2.046	5.116	1	.024	7.733	0.2877	1.3333	0.7500
Year(3) 2011	3.144	15.182	1	.000	23.200	1.3863	4.0000	0.2500
Year(4) 2012	3.550	8.992	1	.003	34.800	1.7918	6.0000	0.1667
Year(5) 2013	2.451	8.179	1	.004	11.600	0.6931	2.0000	0.5000
Year(6) 2014	4.323	14.249	1	.000	75.400	2.5649	13.0000	0.0769
Year(7) 2015	3.144	15.182	1	.000	23.200	1.3863	4.0000	0.2500
Year(8) 2016	1.800	10.141	1	.001	6.052	0.0426	1.0435	0.9583
Constant	-1.758	13.178	1	.000	.172	-1.7579	0.1724	5.8000

The reference category is: RLG.
(Source: Authors elaboration using SPSS)

Starting from the fact that in 2017 there is a discontinuity in the evolutions of the travel agency customers' options, both regarding the religious and the cultural pilgrimage, the analysis has been expanded by the evaluation of a bivariate logistic regression model which highlights the possible links between the evolutions of the preferences tourists for the two tourist destinations.

A first conclusion of the obtained model, and whose characteristics are presented in Table 3, is that all B coefficients are statistically significant for 95% Confidence level ($\alpha = 0.05$) showing a significant functional relationship between the two variables.

A second conclusion is that the odds on tourists' preferences for one of the two destinations are in antiphase so the increase in one value leads to a decrease in the value of the other and vice versa, so if in 2009 the odds to opt for cultural tourism compared to religiously, in 2017 the situation is reversed, so the odds of opting for religious pilgrimage compared to the cultural pilgrimage is 5.8.

Conclusion

The options of the Romanian tourists regarding the domestic tourist destinations chosen by the travel agencies have highlighted both the tendencies of maintaining and changing the options. Thus, the tourists' preferences for seaside tourism are emphasized. These are maintained on a linear upward trend.

The second place, in the preferences of the travel agency's customers, is mountain tourism. Odds to choose mountain tourism towards seaside tourism is sub-unitary (0.894), so the odds to opt for seaside tourism compared to mountain tourism was 1.178. It is also underlined that after 2012, the general trend of the options for mountain tourism has been decreasing.

The choices of the travel agency's customers for spa tourism, despite the abundant natural resources, continue to be poorly developed. Thus, the odds for spa tourism, in the case of tour operators' agencies were between 0.234 and 0.105, respectively between 0.338 and 0.152 in tourism agencies with sales activity. This highlights the fact that for the choice of a spa stay are preferred travel agencies with sales activity.

The biggest changes in the options of travel agency's customers' regarding travel destination were recorded for cultural tourism and religious pilgrimage. Thus, if in 2009 the odds of choosing cultural tourism compared to the religious pilgrimage were 2.5, in 2016 the odds become approximately equal, and in 2017 it reaches only 0.1724, which corresponds to an odd of 5.8 to opt for a religious pilgrimage towards cultural tourism.

Finally, but not least, it should be noted that the analysis carried out referred only to the customers of the travel agencies and cannot be generalized to the entire tourist population, especially as a growing number of people reserve their own stays in different destinations using IT & C facilities.

References

Andrei, D. R., Gogonea, R-M., Zaharia, M., Andrei, J-V., (2014), *Is Romanian Rural Tourism Sustainable? Revealing Particularities*, Sustainability, 6, issue 12, p. 1-13.

Bernal García, J. J., Martínez M-D., Soledad M., Sánchez García, J. F., (2006), *Study of the potentiality of the electronic commerce in the Region of Murcia by means of a model of logistic regression*. Estudios de Economía Aplicada, 24, issue , p. 499-529.

Brindescu-Olariu, D., , Golet,I. (2013), *Prediction of Corporate Bankruptcy in Romania Through the use of Logistic Regression*, Annals of Faculty of Economics, 1, issue 1, p. 976-986.

Davidescu, A. M., Paul, A.M.V., Gogonea, R-M., Zaharia, M., (2015), *Evaluating Romanian Eco-Innovation Performances in European Context*, Sustainability, 7, issue 9, p. 1-35 .

Gogonea, R-M., Zaharia, M ., Dumitru, N-R. (2009). *Statistic and Econometric Analysis of the Motivational Factors on Turistc Behavour*, Annals of Faculty of Economics, 2, issue 1, p. 654-658.

Gogonea, R-M., Zaharia, M. (2013). *Statistical Analisys of Evolutions of Demand And Supply of Agro-Touristic Boarding Houses in 2000 - 2012 Period*, The USV Annals of Economics and Public Administration, 13, issue 2(18), p. 7-16.

McCartney, M., Glass, D. H., (2015), *The dynamics of coupled logistic social groups*, Physica A: Statistical Mechanics and its Applications, 427, issue C, p. 141-154.

NIS. (2018) *Numărul turiştilor români participanţi la acţiunile turistice interne organizate de agenţiile de turism, pe zone turistice,* available on-line at http://statistici.insse.ro/shop/index.jsp?page =tempo3&lang=ro&ind=TUR109B. Accesed on 26 June 2018

Spuchlakova, E., Kovacova, M., (2017), *Logistic Regression as a Tool for Determination of the Probability of Default for Enterprises*, Scientific Bulletin - Economic Sciences, 16, issue 2, p. 41-47.

Wang, H., Li, J., Chen, Q-Y., Ni, D., (2011), *Logistic modeling of the equilibrium speed-density relationship*, Transportation Research Part A: Policy and Practice, 45, issue 6, p. 554-566