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**CZASOPISMO NAUKOWE INSTYTUTU EKONOMICZNEGO
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IM. STANISŁAWA STASZICA W PILE**

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Państwowej Wyższej Szkoły Zawodowej im. Stanisława Staszica
w Pile**

Nr 4 (2017)

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Andreea CIPRIANA MUNTEAN*
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Considerations regarding relationship between tourists satisfaction and destination loyalty

Introduction

Motto: “Orice moment în viața universului e ecuațiunea momentului următor. Orice moment prezent e ecuațiunea momentului trecut” [Each moment in the life of the universe is the equation of the next moment. Each present moment is the equation of the past moment] (Mihai Eminescu, About harmony, 1868, p. 82).

In tourism literature, the topic of number of visits/repeat visits has an important place. In her article entitled, ‘*A dynamic analysis of repeat visitors*’, Assistant Professor Ana Isabel Serpa Arruda Moniz, outlined: “Repeat visits are a major issue in tourist destination management, since they represent client destination loyalty” (2012, p. 505).

Dunn Ross and Iso-Ahola have identified “motivation and satisfaction are central concepts in attempts to understand tourism behaviour” (1991, p. 227).

In general, most research articles stipulate that the number of visits is affected directly by tourist satisfaction, since a pleased tourist is more likely to return to a specific destination or to advocate it to others (Kozak and Rimmington, 2000; Kozak, 2001).

This study examines the impact of tourist satisfaction, socio-demographic and economic determinants on visits to Alba County areas. The regression model consists of 33 initial predictors, included the intercept, and the authors apply different estimation techniques to data on 365 Romanian and foreign tourists between 2013 and 2015.

Consequently, the main objective of this study is to analyse the average number of visits of tourists to Alba County. Our review is *partially* (i.e. from a destination attribute importance and performance or demographic profile of

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the tourists' variables type point of view; age, gender, education level, marital status) comparable to the studies of:

1. Meng et al. (2008), who examined the relationship between destination attribute importance and performance, travel motivation, and satisfaction;
2. Moniz (2012), who studied the underlying reasons behind repeat visits to the Azores Islands (i.e. from variable characteristics point of view; age, gender, education level, marital status, accommodation);
3. Alegre and Cladera (2006), who analysed the effect that repeat visitation rates have on the purpose to revisit mature sun and sand holiday destinations and on tourists' level of satisfaction (i.e. from variable characteristics point of view; age, gender, quality of accommodation, Satisfaction with hospitality);
4. Moniz (2012), who investigated the fundamental motives behind repeat visits to the Azores Islands.

The purpose of this study is to understand what causes the variation in the number of Visits for Alba County tourists using an unstructured/undated workfile structure and an ANCOVA regression approach. We suggest a model that integrates number of days, number of days (i.e. both variables in interaction with dummy variable tourist age up to 25, between 46 and 55, and over 65 years old) and the average expenditure of tourists as quantitative predictors. Also, several tourists' satisfaction qualitative variables such as criteria which, generally, lead to the selection of a hotel/hostel; arrangement and atmosphere of hotel/hostel rooms, quality of service, and culinary offering respectively. The last category of independent variables used in the model refers to demographic variables, described in detail in the Research Design and Methodology section.

Literature review

In tourism literature, the topic of number of visits/repeat visits has an important place. Repeat tourists are normally those who are pleased with the journey's end (Kozak, 2001; Moniz, 2012), are indifferent to price (Alegre and Juaneda, 2006), already know and like the destination and who have a positive experience of the destination (Hong et al. 2009).

Over the last quarter of a century, substantial research has dealt with the theme of repeat visits (Ross and Iso-Ahola, 1991; Oppermann, 1997, 1998; Kozak and Rimmington, 2000; Kozak, 2001; Caneen, 2003; Greiner and Rolfe, 2004; Ledesma et al. 2005; Alegre and Cladera, 2006; Um et al. 2006; Correia et al. 2008; Hong et al. 2009; Assaf et al. 2013; Randriamboarison et al. 2013; Correia et al. 2015).

From our review of the literature, it is clear that most articles point out that repeat visitation is described positively by tourist satisfaction. Also, in this manner, there is a strong relationship between destination image, service quality, tourist motivation, tourist satisfaction, and destination loyalty (Crompton and Ankomah, 1993; Weaver et al. 1994, 2007; Zeithaml et al. 1996; Petrick, 2004; Chen and Tsay, 2007; Chi and Qu, 2008; Oliveira and Pereira, 2008; Campo-Martinez and Garau-Vadell, 2010; Neuts et al. 2013; Romao et al. 2015; Bo et al. 2016; Patuelli and Nijkamp, 2016).

Consequently, it can be concluded that independent variables like expenditure, tourist satisfaction, service quality, number of days and socio-demographic variables, respectively, can influence the number of visits, and also, these covariates in all the regressions considerably better fit the data.

Research Design and Methodology

All the data specific to predictand and predictors (i.e. number of visits, expenditure, number of days, number of persons, tourist satisfaction, service quality and socio-demographic variables, respectively), was collected from a market research contract in the tourism sector in Alba County, (i.e. Contract no. 4579/162/19.03.2014).

The total number of tourists who were subject to our research and who responded to questionnaires came to 365. It should be noted that respondents are tourists from Romania (i.e. Alba County and other counties) and from other countries.

The period submitted for analysis is 2013–2015

As far as the independent variable: EXPENSES is concerned, we should mention that, we used this variable separately and in interaction with the dummy variable: *_25Age*. Also, there were tourists reporting expenses between 10 and 9,000 lei (i.e. approximatively 2 up to 2,000 euros), while the average of the entire sample was about 768 lei (i.e. 170 euros). After the tabulation of this variable (see Appendix A), when 365 observations are analysed, over 95% were included in categories up to 3,000 Lei, with almost 5% between 3,000 Lei and 9,000 Lei. Finally, following the data processing, it has been discovered that there are some high-value observations, which could influence both the variables' statistical significance in the regression model we wanted to elaborate, and the coefficient of multiple determinations for multiple regressions. To conclude, we used a logarithmic transformation of the covariate (i.e. LOG (EXPENSES)), and it has been found that the regression model has improved.

As far as the exogenous variable in the regression model are concerned, we shall discuss the following aspects. We have selected three quantitative variables:

- 1) The first LOG(EXPENSES) outlined in previous paragraph, variable used in interaction with the other three dichotomous variables: *_25 Age*, *over_65 Age* and *No_recommendation* – tourist response for hotel/hostel recommendation appreciation (i.e. $No_Rec * LOG(EXPENSES)$);
- 2) The second number of persons/tourists, which was used in interaction with the *_25Age* dummy and also, *suffer* a logarithmic change (i.e. $_{25}Age * LOG(NO_PERS)$);
- 3) and the third number of days (i.e. NOD), which was used in interaction with the *_25 age* dummy and also, *suffer* a logarithmic transformation (i.e. $_{25}Age * LOG(NOD)$).

Also, we have selected 14 qualitative interaction variables as follows:

- 1) tourists under 25 years in interaction with the tourist response for restaurant culinary quality offer assessment (i.e. $_{25}Age * Culinary_quality_1$), in our case *Culinary_quality_1* represents a *very unfavourable* quality offer assessment, where 1 denotes very unfavourable and 5 very favourable;
- 2) tourists under 25 years in interaction with the tourist reply for variables that highlight tourists' point of view on the statement "*Staff amiability can make this hotel/hostel to become one of the preferred places for tourists*" assessment (i.e. $_{25}Age * Strongly_Disagree_2$), in our situation *Strongly_Disagree_2* represents a very unfavourable appreciation for staff amiability, where -2 denotes very unfavourable and +2, *Strongly Agree_2*, is very favourable;
- 3) tourists under 25 years in interaction with tourists with PhDs (i.e. $_{25}Age * PhD6$), in our case *PhD6* represent the *last level of education* (first level Middle School/MID_S1, Vocational School/VOC_S2, High School/H_S3, Bachelor's Degree/BD4, Master's Degree/MD5, Doctorate Degree/PhD6);
- 4) tourists under 25 years in interaction with culinary novelty (i.e. $_{25}Age * Culinary_novelty5$), in our model *Culinary_novelty5* represents a *very favourable* quality offer assessment for culinary offer, where 1 denotes very unfavourable and 5 very favourable;
- 5) tourists between 45 and 55 years in interaction with room ambience (i.e. $_{45_55}Age * Ambiance0$), in our regression *Ambiance0* represents a *Neither agree, nor disagree* assessment for pleasant and family atmosphere hotel/hostel room criteria, where -2 denotes *Totally Disagree* and +2, *Strongly Agree2*, a very favourable pleasant and family atmosphere;
- 6) tourists between 45 and 55 years in interaction with room facilities (i.e. $_{45_55}Age * Room_facilities_1$), in our case *Room_facilities_1*

- represents a *Disagree* assessment for the *tastefully decorated* hotel/ hostel room criteria, where -2 denote Totally Disagree and +2, Strongly Agree2, i.e. *tastefully decorated*;
- 7) tourists between 45 and 55 years in interaction with tourist response for restaurant culinary quality offer assessment (i.e. *_45_55Age*Culinary_quality1*), in our case *Culinary_quality_1* represents a *very unfavourable* quality offer assessment, where 1 denotes very unfavourable and 5 is very favourable;
 - 8) tourists between 45 and 55 years in interaction with the tourist response for restaurant traditional culinary quality offer assessment (i.e. *_45_55Age*Traditional_culinary_offer_1*), in our case *Traditional_culinary_offer1* represents *very unfavourable traditional culinary quality offer assessment*, where 1 denotes very unfavourable and 5 is very favourable;
 - 9) tourists between 45 and 55 in interaction with the tourist response for *restaurant quality service* assessment (i.e. *_45_55Age*Dissatisfied*), in our model *Dissatisfied* represents *unfavourable restaurant quality service assessment*, where 1 denotes very dissatisfied and 5 is very satisfied;
 - 10) tourists between 45 and 55 years in interaction with the tourist reply for variables that highlight tourists' point of view on the statement "*Staff amiability can make this hotel/hostel to become one of the preferred places for tourists*" assessment (i.e. *_45_55Age*NoANoDSA0*), in our situation *NoANoDSA0* represents *Neither agree, nor disagree* appreciation for Staff Amiability, where -2 denotes Totally Disagree and +2, Strongly Agree2 is a very favourable staff amiability assessment;
 - 11) tourists over 65 years in interaction with the tourist reply for variables that highlight tourists' *criteria underlying the choice of a hotel/ hostel* (i.e. *_65Age*Tariff*), the other response options were location, range of tourism services, service quality, variety of restaurant menu, additional services;
 - 12) tourists over 65 years in interaction with tourist with a *level of education Middle School* (i.e. *_65Age* MID_S1*);
 - 13) tourist over 65 years in interaction with tourist with a *level of education High School* (i.e. *_65Age* H_S3*);
 - 14) tourists over 65 years old in interaction with the tourist response for restaurant quality service assessment (i.e. *_65Age* NoANoDRQS0*), in our model *NoANoDRQS0* represent *Neither agree, nor disagree* assessment for restaurant quality service.

Similarly, we selected 12 dummy variables as follows: tourists under 25 years (i.e. *_25Age*); tourists between 45 and 55 years (i.e. *_45_55Age*); tourists over 65 years (i.e. *_65Age*); pleasant and family atmosphere hotel/hostel

room criteria – *Agree pleasant and family atmosphere* (i.e. *Ambiance1*); special room facilities criteria, *Disagree* assessment (i.e. *SpecialRoomFacilities_01*) for *special hotel/hostel room facilities*, where -2 denotes Totally Disagree and +2, Strongly Agree2 is special room facilities; very favourable quality offer assessment for culinary offer (i.e. *Culinary_novelty5*); tourist response for hotel/hostel quality service assessment regarding the hotel/hostel selection criteria (i.e. *Important4*), in our model *Important4* represents *important hotel/hostel quality service*, where 1 denotes very unimportant and 5 is very important; level of tariff (i.e. *Tariff*); *unfavourable restaurant quality service assessment* (i.e. *Dissatisfied*); hotel/hostel quality service assessment (i.e. *NonImportant2*); tourist response for hotel/hostel recommendation appreciation (i.e. *No_Rec*) and level of education Master's Degree, respectively (i.e. *MD5*).

In terms of the qualitative variables, to conclude we mentioned that data were classified into two categories, as follows: the first type represents an interaction between tourist age and motivational and satisfaction criteria, and the second type are dichotomous variables that pointed out motivational satisfaction and demographic issues.

Regarding the tabulation of the *NO_VISITS* and *NO_DAYS* control variables (see Appendix B), it has been detected that most of the tourists had preferred to visit Alba County four times (i.e. 166 tourists, 45.48%) and five times (i.e. 71 tourists, 19.12%); to stay three days (i.e. 107 tourists, 29.32 %), one day (i.e. 81 tourists, 22.19 %) and two days (i.e. 70 tourists, 19.18%), respectively.

In our scientific approach, we want to establish the average number of visits to Alba County for the period of time 2013–2015, and how this responds to the independent variables highlighted above. The options we have chosen in the equation estimation (i.e. Coefficient covariance matrix and Weights) directed us, in the end, to introduce interactions or separate variables in the regression model. Thus, the specific function is:

$$\text{NO_VISITS} = F (_25 \text{ Age}, 46_65 \text{ Age}, _65_Age, \text{Room facilities_01}, \text{Ambience0}, \text{Ambience1}, \text{Culinary quality1}, \text{Room Comfort_01}, \text{Strongly Disagree_2}, \text{PhD6}, \text{Expenses}, \text{Middle_School1}, \text{Important4}, \text{High School3}, \text{Level of Tariff}, \text{Master Degree5}, \text{Dissatisfied_2}, \text{No_agree_no_disagree0}, \text{Restaurant quality service assessment3}, \text{Number of Days}, \text{Number of persons}, \text{Non Important2}, \text{Culinary novelty5}, \text{No Recommendation}, \text{Traditional culinary offer1}) (1.0)$$

In order to compare the average values of the expenditure, a framework of the regression analysis has been used. We have also tried to use the ANCOVA model which provides a method of statistically controlling the effect of the covariate. To complete the analysis, the following model was considered:

$$\begin{aligned}
 \text{Log}(Z) = & \beta_1 + \beta_2 \log(\text{EXPENSES}) + \beta_3_{_25\text{Age}} * \text{Log}(\text{NO_PERS}) + \beta_4_{_25\text{Age}} * \text{Log}(\text{EXPENSES}) + \\
 & + \beta_5_{_65\text{Age}} * \text{Log}(\text{EXPENSES}) + \beta_6_{\text{No_Rec}} * \text{Log}(\text{EXPENSES}) + \beta_7_{_25\text{Age}} * \text{Log}(\text{NOD}) + \\
 & + \beta_8_{_25\text{Age}} * \text{Culinary_quality1} + \beta_9_{_25\text{Age}} * \text{Strongly_Disagree_2} + \beta_{10}_{_25\text{Age}} * \text{PhD6} + \\
 & + \beta_{11}_{_25\text{Age}} * \text{Culinary_novelty5} + \beta_{12}_{_46_55\text{Age}} * \text{Ambiance0} + \beta_{13}_{_46_55\text{Age}} * \text{Room_facilities_1} + \\
 & + \beta_{14}_{_46_55\text{Age}} * \text{Culinary_quality1} + \beta_{15}_{_46_55\text{Age}} * \text{Traditional_culinary_offer_1} + \\
 & + \beta_{16}_{_46_55\text{Age}} * \text{Dissatisfied} + \beta_{17}_{_46_55\text{Age}} * \text{NoANoDSA0} + \beta_{18}_{_65\text{Age}} * \text{Tariff} + \\
 & + \beta_{19}_{_65\text{Age}} * \text{MID_S1} + \beta_{20}_{_65\text{Age}} * \text{H_S3} + \beta_{21}_{_65\text{Age}} * \text{NoANoDRQS0} + \beta_{22}_{_25\text{Age}} + \\
 & + \beta_{23}_{_46_55\text{Age}} + \beta_{24}_{_65\text{Age}} + \beta_{25} \text{Ambiance1} + \beta_{26} \text{SpecialRoomFacilities_01} + \\
 & + \beta_{27} \text{Culinary_novelty5} + \beta_{28} \text{Important4} + \beta_{29} \text{Tariff} + \beta_{30} \text{Dissatisfied} + \\
 & + \beta_{31} \text{NonImportant2} + \beta_{32} \text{No_Rec} + \beta_{33} \text{MD5} + u \quad (1.1)
 \end{aligned}$$

Where:

Log (Z) – (average) number of visits;

u – error term.

Data were introduced in an unbalanced, undated worksheet and afterward processed by means of the Eviews 7.2. Therefore, according to the application software, into Equation Estimation, Least Squares Options, we had the possibility to specify two additional settings for the estimation:

- a) *Coefficient covariance matrix* (i.e. Estimation default, White and Heteroskedasticity and Autocorrelation Consistent-HAC Newey-West) – for this option we selected “White” (i.e. d.f. adjustment);
- b) *Weights* – There are three basic weight options in our software package, which we may specify: *Type*, *Weight series* and *Scaling*. For *Type* we selected *Inverse standard deviation*, for *Weight series* we entered Log(EXPENSES) in the Weight series field, and for *Scaling* we chose *None* mode.

Long and Ervin (1998) emphasised that tests based on a Heteroscedasticity Consistent Covariance Matrix (i.e. HCCM) are consistent, and in the specific literature one can notice that there are three supplementary versions of the HCCM as follows:

- a) HC1 (Hinkley, 1977) resulted from a calculation of the degree of HC0 freedom correction (White, 1980);
- b) HC2 (MacKinnon and White, 1985) explained taking into account that the covariance matrix will be a less biased estimator, and
- c) HC3 presupposed by MacKinnon and White (1985). In this paper, we used the HC1 estimator and the standard errors for the WLS estimator.

It is well acknowledged that the EViews offers built-in tools for estimating the coefficient covariance under the assumption that the residuals are conditionally heteroskedastic. In this case, the coefficient covariance estimator is named a Heteroskedasticity Consistent Covariance (White).

Regarding HC1, we considered Long and Ervin's formula (1998), based on Lemma 2 – *Consistency of variance estimate* by Hinkley¹ (1977), and the degree-of-freedom White heteroskedasticity consistent covariance matrix estimator. Finally, we outlined the following estimator:

$$HCl = \left(\frac{n}{n-k} \right) \left(\sum_t X_t' X_t \right)^{-1} \left(\sum_t X_t' \text{diag}(u_t^2) X_t \right) \left(\sum_t X_t' X_t \right)^{-1} \quad (1.2)$$

Where:

u_t^2 – the estimated residuals,
 n – the number of observations (i.e. in our case 365),
 k – the number of regressors (i.e 33), and
 $\frac{n}{n-k}$ – is degree-of-freedom correction

In our WLS, the estimator (1.3) and the default estimated coefficient covariance matrix (1.4) may be written as follows (Eviews, 2010):

$$\hat{\beta}_{WLS} = (X'DX)^{-1} X'Dz \quad (1.3)$$

$$\hat{\Sigma}_{WLS} = \left(\frac{1}{n-k} \right) (z - X\hat{\beta}_{WLS})' D (z - X\hat{\beta}_{WLS}) (X'DX)^{-1} \quad (1.4)$$

Where:

D – a diagonal matrix containing the scaled w along the diagonal
 z and X – matrices associated with z_t and x_t

Performing tabulation of expenses series, we noted:

- a) near outliers stands at around 3,000 lei and far outliers over 3,000 lei;
- b) over 95% of the categories/tourists are spending up to 3,001 lei estimated expenses (i.e. Appendix A).

Consequently, in the estimation equation process, the logarithm of the controlled variable and independent variables respectively was carried out (i.e. EXPENSES, NO_PERS and NO_DAYS,).

In order to “improve” the covariates probability, in the equation estimation (1.1), coefficient covariance matrix, we have chosen the White cross-section standard errors and covariance option (d.f. corrected).

Results and discussion

1. Using the data from the unbalanced undated worksheet and the regression (1.1), we acquired the following results:

¹ David V. Hinkley (1977) *Jackknifing in Unbalanced Situations*, Technometrics, Vol. 19, No. 3 (Aug.), pp. 285–292.

Table 1.

Explanatory variables	Coefficient	Standard Error	t-Statistic	
Intercept	1.8488	0.1388	13.3210	*
LOG(EXPENSES)	-0.0959	0.0234	-4.0920	*
_25Age*LOG(NO_PERS)	0.1610	0.0505	3.1867	**
_25Age*LOG(EXPENSES)	0.1547	0.0538	2.8779	**
65Age*LOG(EXPENSES)	0.2607	0.0550	4.7432	**
No_Rec*LOG(EXPENSES)	0.7333	0.1482	4.9479	*
_25Age*LOG(NOD)	0.2058	0.0620	3.3163	**
_25Age*Culinary_quality1	-1.0219	0.0963	-10.6104	*
_25Age*Strongly_Disagree_2	0.5890	0.0866	6.8058	*
_25Age*PhD6	-0.8063	0.1210	-6.6652	*
_25Age*Culinary_novelty5	0.2440	0.1130	2.1598	**
_46_55Age*Ambiance0	-0.8239	0.1587	-5.1905	*
_46_55Age*Room_facilities_1	-0.8228	0.1365	-6.0267	*
_46_55Age* Culinary_quality1	0.1914	0.0842	2.2736	**
_46_55Age*Traditional_culinary1	0.4432	0.1435	3.0877	**
_46_55Age*Dissatisfied	0.3738	0.1632	2.2906	**
_46_55Age*NoANoDSA0	-0.2842	0.0904	-3.1456	**
_65Age*Tariff	-1.2596	0.1163	-10.8300	*
_65Age*MID_S1	-0.9917	0.0996	-9.9612	*
65*H_S3	-0.5992	0.2691	-2.2268	**
65*NoANoDRQS0	0.9785	0.2758	3.5484	*
_25Age	-1.4479	0.3029	-4.7810	*
_46_55Age	-0.3009	0.1513	-1.9891	**
_65Age	-1.4914	0.3086	-4.8319	*
Ambiance1	-0.1601	0.0529	-3.0257	**
SpecialRoomFacilities_01	0.3143	0.1318	2.3844	**
Culinary_novelty5	-0.1243	0.0587	-2.1165	**
Important4	-0.1278	0.0486	-2.6275	**
Tariff	-0.1215	0.0737	-1.6495	***
Dissatisfied	0.1574	0.0543	2.8983	**
Nonimportant2	-0.3265	0.1077	-3.0322	**
No_Rec	-4.5391	0.6217	-7.3012	*
MD5	0.0795	0.0420	1.8940	***

Weighted Statistics: R2 0.4034, Adjusted R-squared 0.3459, F-statistic 7.016, Prob (F-statistic) 0.0000

Unweighted Statistics: R2 0.3353, Adjusted R-squared 0.2712

Note: * denotes that the *p* value is extremely small, ** values being lower than the 0.005 level, *** lower than the 0.010 level. Source: authors' own processing data in Eviews 7.2

As these regression results show, the estimated coefficients in (1.2) are highly statistically significant for LOG(EXPENSES), No_Rec*LOG(EXPENSES), _25Age*Culinary_quality1, _25Age*Strongly_Disagree_2, _25Age*PhD6, _46_55Age*Ambiance0, _46_55Age*Room_facilities_1, _65Age*Tariff, _65Age*MID_S1, _65_*NoANoDRQS0, _25Age, _65Age, No_Rec, respectively, as the p value is very low. The “slope” for the rest of the stimulus is statistically significant at about 5 percent, with two concessions, one is the “slope” for Tariff and the other one MD5 (i.e. significant at level 10).

The coefficient of determination R^2 shows that the sample regression line does not fit the data, as its value is 0.4034. The p value of F-statistic is less than the significance level of 5%, so we reject the null hypothesis that all the slope coefficients are equal to zero.

Also, the interpretation of 1.2 is that the elasticity of *Number of visits* with respect to *Expenses* is about -0.01, suggesting that if the level of expenses goes up by 10 percent, on average, the number of visits goes down by about 1 percent. Thus, the number of visits is quite responsive to changes in level of expenses. Likewise, the interpretation of 1.2 is that the elasticity of number of visits with respect to number of tourists under 25 years who travel in groups (i.e. in interaction) is about 0.16, suggesting that if the total number of tourists goes up by 10 percent, on average, the number of visits goes up by about 2 percent. Therefore, the number of visits is reasonably responsive to changes in number of tourist under 25 years.

The elasticity of the number of visits with respect to expenses, in interaction with tourists under 25 years is about 0.15, suggesting that if the level of expenses goes up by 10 percent, on average, the number of visits goes up by about 2 percent. Thus, the number of visits is fairly responsive to changes in the level of expenses of younger tourists, who intend to travel in groups. The elasticity of the number of visits with respect to expenses, in interaction with tourists over 65 years old is about 0.26, suggesting that if the level of expenses goes up by 10 percent, on average, the number of visits goes up by about 3 percent. Hence, the number of visits is quite responsive to changes in the level of expenditure by older tourists, who tend to travel more compared to younger tourists.

It can be observed that the elasticity of the number of visits with respect to expenses, in interaction with tourists who do not intend to recommend the hotel/hostel is about 0.73, suggesting that if the level of expenses goes up by 10 percent, on average, the number of visits goes up by about 7 percent. This result for this category of tourists is, perhaps, reflected by the attempts to find hotels/hostels that meet their needs.

Also, the elasticity of the number of visits with respect to number of days, in interaction with tourists under 25 years is about 0.21, suggesting that if the level of expenses goes up by 10 percent, on average, the number of visits

goes up by about 2 percent. Thus, the number of visits is rather responsive to changes in the number of days specifically for younger tourists, who tend to travel in groups.

In terms of the dichotomous variables related to culinary quality, room facilities, restaurant and hotel/hostel service quality one can notice that the coefficients registered different values. We continue to highlight the first two positive and negative values as follows:

1. The elasticity of number of visits with respect to *No recommendation* assessment is about -4.54, suggesting that if the number of tourists with no recommendation goes up by 1 percent, on average, the number of visits goes down by about 5%, which represents the most negative influence on the dependent variable;
2. The elasticity of number of visits with respect to *tourists over 65 years old* is about -1.49, suggesting that if the number of tourists over 65 years old goes up by 1 percent, on average, the number of visits goes down by about 2%, which can be explained, perhaps, by the fact that senior tourists in Romania have a moderately low income level;
3. with regard to the dichotomous variable related to tourists under 25 years old in interaction with the tourist reply for variables that highlight tourists' point of view on staff amiability (i.e. *_25Age* Strongly_Disagree_2*), one can notice that the elasticity of number of visits with respect to *_25Age* Strongly_Disagree_2* is about 0.6, suggesting that if the number of tourists under 25 years old goes up by 1 percent, on average, the number of visits goes up by about 1%, which can be described, feasibly, by the fact that young tourists, who travel in groups, are not affected by the staff amiability related to hotel/hostel assessment;
4. looking at the dichotomous variable related to tourists over 65 years old in interaction with the tourist response for restaurant quality service assessment (i.e. *_65Age* NoANoDRQS0*), it can be observed that the elasticity of the number of visits with respect to *_65Age* NoANoDRQS0* is about 0.98, suggesting that if the number of tourists over 65 years old goes up by 1 percent, on average, the number of visits goes up by about 1%, which can be explained by the fact that senior tourists are satisfied with hotel/hostel restaurant services.

Study Limitations

In this article, we reviewed repeat visits, the factors affecting a tourist's intention to return and tourism destination loyalty literature, and we established a regression model with some specific predictors. Our study here, however, has its limitations, which has determined the approach for further research in this field, for example, the investigation about the influence of the

perceived value (Bradley & Sparks, 2012) and the service quality (Um et al., 2006) upon tourist satisfaction. Likewise, we propose to use these potential regressors to enable some forecasts and predictions to be made.

The article admits the following limitations:

- a) To improve the coefficient of determination we may use other exogenous variables, such as *Satisfaction Dimensions of a Sightseeing Tour factors*. For instance, in this manner, Ross and Iso-Ahola categorised satisfaction factors for tourist groups visiting Washington DC in six different types: knowledge, escape, tour pace, social interaction, social security and practical aspect (1991, p. 232);
- b) Oppermann (1999) recommends a theoretical typology of destination loyalty as a function of multiple visits (i.e. “somewhat loyal”, “loyal” and “very loyal”). In this way, we may use some exogenous to improve the coefficient of determination;
- c) The study had an unbalanced, undated workfile which determined a “limited view” of the regressand’s dynamic and an estimation for the next periods. Indeed, it is well known that a longitudinal research in tourism expenditure would provide better image, “thus offering a unique perspective on how the behaviour and its influences evolve over time” (Cohen, et al., 2014, p. 898);
- d) The relatively small sample, probably, influenced the unweighted statistics (i.e. included observations, p. 365);
- e) It is well known that the difference between R-squared and Adjusted R-squared is always smaller. In our research, we tried to estimate too many coefficients from a relatively small sample. As a consequence, we registered a model with quite a high difference between R-squared and Adjusted R-squared (more than 5 units, $R^2=0.40$ and Adjusted $R^2=0.35$)

Conclusions

Loyal tourists are generally those who are pleased with the destination (Kozak, 2001), know and like the destination and who have a positive image of the destination (Milman and Pizam, 1995; Hong et al. 2009).

The number of visits is reasonably responsive to changes in the number of tourists under 25 years, who travel in groups. Although, the number of visits is quite responsive to changes in the level of expenses of older tourists, who who tend to travel much more compared to younger tourists.

Tourists who gave no recommendation for hotel/hostel registered the most negative impact over the regressand.

When considering the tourists’ ages, one can see that young tourists, who travel in groups, are not affected by staff amiability related to hotel/hostel assessment. Senior tourists are also satisfied with hotel/hostel restaurant services.

An interesting aspect is that the regressors, which constitute a small part of all responses, have a major effect on coefficients.

In the case of *weighted statistics* and *unweighted statistics*, the R^2 coefficient of determination shows that the sample regression line does not fit the data. Therefore, in our future research, it is necessary to identify one or more independent variables that can improve the coefficient of determination.

To conclude, even if we managed to describe the relationship between tourist satisfaction and destination loyalty of tourists visiting Alba County, it is essential to identify other procedures and regression models to highlight a better measure of the number of visits.

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Appendix A

Table of EXPENSES and NUMBER OF PERSONS/TOURISTS

Sample: 1 to 365		<i>Expenses</i>			<i>Number of persons/tourists</i>				
Included observations: 365, Number of categories: 49					Included observations: 365, Number of categories: 26				
Value	Count	Percent	Cumulative Count	Cumulative Percent	Value	Count	Percent	Cumulative Count	Cumulative Percent
10	2	0.55	2	0.55	1	14	3.84	14	3.84
25	1	0.27	3	0.82	2	87	23.84	101	27.67
30	2	0.55	5	1.37	3	31	8.49	132	36.16
40	1	0.27	6	1.64	4	74	20.27	206	56.44
50	9	2.47	15	4.11	5	22	6.03	228	62.47
60	4	1.1	19	5.21	6	43	11.78	271	74.25
70	1	0.27	20	5.48	7	8	2.19	279	76.44
100	38	10.41	58	15.89	8	21	5.75	300	82.19
120	1	0.27	59	16.16	9	4	1.1	304	83.29
130	2	0.55	61	16.71	10	16	4.38	320	87.67
135	2	0.55	63	17.26	11	3	0.82	323	88.49
150	13	3.56	76	20.82	12	9	2.47	332	90.96
160	2	0.55	78	21.37	13	1	0.27	333	91.23
180	2	0.55	80	21.92	14	1	0.27	334	91.51
200	34	9.32	114	31.23	15	2	0.55	336	92.05
225	1	0.27	115	31.51	18	4	1.1	340	93.15
240	1	0.27	116	31.78	20	9	2.47	349	95.62
250	9	2.47	125	34.25	24	2	0.55	351	96.16
300	27	7.4	152	41.64	25	1	0.27	352	96.44
330	1	0.27	153	41.92	26	1	0.27	353	96.71
340	1	0.27	154	42.19	28	1	0.27	354	96.99
350	3	0.82	157	43.01	30	3	0.82	357	97.81
400	23	6.3	180	49.32	35	2	0.55	359	98.36
450	18	4.93	198	54.25	36	1	0.27	360	98.63

Sample: 1 to 365		Expenses			Number of persons/tourists				
Included observations: 365, Number of categories: 49					Included observations: 365, Number of categories: 26				
Value	Count	Percent	Cumulative Count	Cumulative Percent	Value	Count	Percent	Cumulative Count	Cumulative Percent
500	47	12.88	245	67.12	45	3	0.82	363	99.45
600	14	3.84	259	70.96	50	2	0.55	365	100
700	5	1.37	264	72.33	Total	365	100	365	100
800	3	0.82	267	73.15					
850	1	0.27	268	73.42					
900	5	1.37	273	74.79					
1000	30	8.22	303	83.01					
1200	5	1.37	308	84.38					
1300	1	0.27	309	84.66					
1350	1	0.27	310	84.93					
1500	10	2.74	320	87.67					
1800	1	0.27	321	87.95					
2000	14	3.84	335	91.78					
2400	1	0.27	336	92.05					
2500	10	2.74	346	94.79					
2800	1	0.27	347	95.07					
3000	2	0.55	349	95.62					
3200	1	0.27	350	95.89					
3400	1	0.27	351	96.16					
3500	4	1.1	355	97.26					
4000	2	0.55	357	97.81					
4500	4	1.1	361	98.9					
5000	2	0.55	363	99.45					
7200	1	0.27	364	99.73					
9000	1	0.27	365	100					
Total	365	100	365	100					

Source: authors' own processing data with EViews7.2.

Appendix B

Table of Number of Visits and Days

Tabulation of NO_VISITS					Tabulation of NO_DAYS				
Sample: 1 to 365					Sample: 1 to 365				
Included observations: 365					Included observations: 365				
Number of categories: 5					Number of categories: 18				
Value	Count	Percent	Cumulative Count	Cumulative Percent	Value	Count	Percent	Cumulative Count	Cumulative Percent
1	40	10.96	40	10.96	1	81	22.19	81	22.19
2	52	14.25	92	25.21	2	70	19.18	151	41.37
3	36	9.86	128	35.07	3	107	29.32	258	70.68
4	166	45.48	294	80.55	4	32	8.77	290	79.45
5	71	19.45	365	100	5	24	6.58	314	86.03
Total	365	100	365	100	6	6	1.64	320	87.67
					7	29	7.95	349	95.62
					8	2	0.55	351	96.16
					9	2	0.55	353	96.71
					10	3	0.82	356	97.53
					11	1	0.27	357	97.81
					12	1	0.27	358	98.08
					13	1	0.27	359	98.36
					14	1	0.27	360	98.63
					15	2	0.55	362	99.18
					21	1	0.27	363	99.45
					30	1	0.27	364	99.73
					80	1	0.27	365	100
					Total	365	100	365	100

Source: authors' own processing data with EViews7.2.

Appendix C

Wald Test

Test Statistic	Value	df	Probability
t-statistic	-10.1479	332	0.0000
F-statistic	102.9799	(1, 332)	0.0000
Chi-square	102.9799	1	0.0000

Null Hypothesis: $C(1)+C(2)+C(3)+C(4)+C(5)+C(6)+C(7)+C(8)+C(9)+C(10)+C(11)+C(12)+C(13)+C(14)+C(15)+C(16)+C(17)+C(18)+C(19)+C(20)+C(21)+C(22)+C(23)+C(24)+C(25)+C(26)+C(27)+C(28)+C(29)+C(30)+C(31)+C(32)+C(33)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
$C(1) + C(2) + C(3) + C(4) + C(5) + C(6) + C(7) + C(8) + C(9) + C(10) + C(11) + C(12) + C(13) + C(14) + C(15) + C(16) + C(17) + C(18) + C(19) + C(20) + C(21) + C(22) + C(23) + C(24) + C(25) + C(26) + C(27) + C(28) + C(29) + C(30) + C(31) + C(32) + C(33)$	-8.609318	0.848384

Source: authors' own processing data with EViews7.2

Appendix D

Tabulation of single variables					Tabulation of variables used in interaction				
Sample: 1 365									
Included observations: 365									
Number of categories for each tabulation: 2									
Tabulation of Culinary_novelty5					Tabulation of Strongly_Disagree_2				
			Cumulative	Cumulative				Cumulative	Cumulative
Value	Count	Percent	Count	Percent	Value	Count	Percent	Count	Percent
0	262	71.78	262	71.78	0	361	98.9	361	98.9
1	103	28.22	365	100	1	4	1.1	365	100
Total	365	100	365	100	Total	365	100	365	100
Tabulation of Ambiance1					Tabulation of PhD6				
			Cumulative	Cumulative				Cumulative	Cumulative
Value	Count	Percent	Count	Percent	Value	Count	Percent	Count	Percent
0	246	67.4	246	67.4	0	346	94.79	346	94.79
1	119	32.6	365	100	1	19	5.21	365	100
Total	365	100	365	100	Total	365	100	365	100
Tabulation of SpecialRoomFacilities_01					Tabulation of NoANoDSA0				
			Cumulative	Cumulative				Cumulative	Cumulative
Value	Count	Percent	Count	Percent	Value	Count	Percent	Count	Percent
0	354	96.99	354	96.99	0	317	86.85	317	86.85
1	11	3.01	365	100	1	48	13.15	365	100
Total	365	100	365	100	Total	365	100	365	100
Tabulation of Important4					Tabulation of MID_S1				
			Cumulative	Cumulative				Cumulative	Cumulative
Value	Count	Percent	Count	Percent	Value	Count	Percent	Count	Percent
0	246	67.4	246	67.4	0	357	97.81	357	97.81
1	119	32.6	365	100	1	8	2.19	365	100
Total	365	100	365	100	Total	365	100	365	100
Tabulation of Tariff					Tabulation of H_S3				
			Cumulative	Cumulative				Cumulative	Cumulative
Value	Count	Percent	Count	Percent	Value	Count	Percent	Count	Percent
0	312	85.48	312	85.48	0	283	77.53	283	77.53
1	53	14.52	365	100	1	82	22.47	365	100
Total	365	100	365	100	Total	365	100	365	100
Tabulation of Dissatisfied					Tabulation of NoANoDRQS0				
			Cumulative	Cumulative				Cumulative	Cumulative
Value	Count	Percent	Count	Percent	Value	Count	Percent	Count	Percent
0	196	53.7	196	53.7	0	336	92.05	336	92.05
1	169	46.3	365	100	1	29	7.95	365	100
Total	365	100	365	100	Total	365	100	365	100
Tabulation of Nonimportant2					Tabulation of Traditional_culinary1				
			Cumulative	Cumulative				Cumulative	Cumulative
Value	Count	Percent	Count	Percent	Value	Count	Percent	Count	Percent
0	362	99.18	362	99.18	0	354	96.99	354	96.99
1	3	0.82	365	100	1	11	3.01	365	100
Total	365	100	365	100	Total	365	100	365	100
Tabulation of No_Rec					Tabulation of Room_facilities_1				
			Cumulative	Cumulative				Cumulative	Cumulative
Value	Count	Percent	Count	Percent	Value	Count	Percent	Count	Percent
0	357	97.81	357	97.81	0	357	97.81	357	97.81
1	8	2.19	365	100	1	8	2.19	365	100
Total	365	100	365	100	Total	365	100	365	100

Tabulation of MD5					Tabulation of Ambiance0				
Value	Count	Percent	Cumulative Count	Cumulative Percent	Value	Count	Percent	Cumulative Count	Cumulative Percent
0	278	76.16	278	76.16	0	338	92.6	338	92.6
1	87	23.84	365	100	1	27	7.4	365	100
Total	365	100	365	100	Total	365	100	365	100

Tabulation of _25Age					Tabulation of Culinary_quality1				
Value	Count	Percent	Cumulative Count	Cumulative Percent	Value	Count	Percent	Cumulative Count	Cumulative Percent
0	279	76.44	279	76.44	0	363	99.45	363	99.45
1	86	23.56	365	100	1	2	0.55	365	100
Total	365	100	365	100	Total	365	100	365	100

Tabulation of _46_55Age				
Value	Count	Percent	Cumulative Count	Cumulative Percent
0	321	87.95	321	87.95
1	44	12.05	365	100
Total	365	100	365	100

Tabulation of _65Age				
Value	Count	Percent	Cumulative Count	Cumulative Percent
0	351	96.16	351	96.16
1	14	3.84	365	100
Total	365	100	365	100

Source: authors' own processing data with EViews7.2.

Związek między satysfakcją turystów i lojalnością wobec kierunku podróży

Streszczenie

Niniejsze badanie analizuje związek między satysfakcją turystów a ich lojalnością wobec kierunku podróży w okręgu Alba. Badania opierają się na danych zebranych w ramach umowy o badaniach rynku w sektorze turystyki w okręgu Alba. Analiza obejmuje lata 2013–2015 i 365 turystów. Badania pokazały, że 18 predyktorów (tj. prawie 55% wszystkich predyktorów) wpłynęło na spadek, a 15 niezależnych zmiennych wpłynęło na wzrost liczby odwiedzin turystów. Jeśli chodzi o zmienne dychotomiczne związane z satysfakcją turystów, dziesięć zmiennych egzogennych wywołało pozytywną reakcję w liczbie odwiedzin, a dziesięć z nich negatywną. Elastyczność liczby wizyt w odniesieniu do $\text{Log}(\text{wydatki})$ wynosi około -0,0959, co sugeruje, że jeśli poziom wydatków wzrośnie średnio o 10 procent, liczba odwiedzin turystów zmniejszy się o około 1 procent. Tak więc liczba wizyt jest bardzo wrażliwa na zmiany zarówno zmiennych związanych z satysfakcją turystyczną, jak i wydatkami turystów indywidualnych.

Słowa kluczowe: satysfakcja turystów, liczba odwiedzin, kwatery, restauracje, model log-log, ANCOVA

Considerations regarding relationship between tourists satisfaction and destination loyalty

Abstract

This study analyse the relationship between tourists satisfaction with destination loyalty in Alba County. The research is based on data collected from a market research contract in the tourism sector in Alba County and the period submitted for analysis is 2013 – 2015, when there have been identified 365 tourists. Regarding the methodology, one can notice that into Equation Estimation, Least Squares Options, we selected "White" for *Coefficient covariance matrix*. Also, we pointed out *Standard deviation for Type weights options*, and for *Weighted series* we selected Log(Expenditure). According to log-log regression model estimation output, 18 predictors determined a decrease (i.e. almost 55% from total predictors) and 15 independent variables determined an increase in the tourists' number of visits. In terms of the dichotomous variables related to tourist satisfaction, it was highlighted that ten of exogenous cause a positive reaction in Number of Visits and ten of them a negative one. The elasticity of Number of Visits with respect to Log(Expenditure) is about -0.0959, suggesting that if the level of expenditure goes up by 10 percent, on average, the tourists' number of visits goes down by about 1 percent. Thus, Number of Visits is very responsive to changes both variables related to tourist satisfaction and in personal tourist's expenditure.

Key words: tourist's satisfaction, number of visits, accommodation units, restaurants, log-log model, ANCOVA

JEL: Z31, Z32, Z33

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