Measuring the Degree of Tourists' Satisfaction with the Use of Log-Linear Analysis: The Case of North Greece.

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Abstract

The present article attempts to examine the use of log-linear equations in the analysis of tourists' degree of satisfaction with the tourism product offering. Through the current research application, the need for the adoption of such models becomes evident. Strategic marketing problems and problems concerning other tourist management issues could be approached through the use of log-linear analysis.
Key Words: Log-linear analysis, satisfaction degree, tourist destinations

Περίληψη

Το παρόν άρθρο αποτελεί μια προσπάθεια ανάδειξης της χρήσης λογαριθμικού τύπου εξισώσεων στην περίπτωση ανάλυσης του Βαθμού ικανοποίησης των τουριστών. Μέσα από την παρούσα ερευνητική εφαρμογή αναδεικνύεται η αναγκαιότητα υιοθέτησης παρόμοιων υποδειγμάτων για την στρατηγική προσέγγιση προβλημάτων που αφορούν στο Μάρκετινγκ και ευρύτερα διοικητικά θέματα της ζήτησης τουριστικών προορισμών.

Λέξεις κλειδιά: Λογαριθμικές γραμμικές αναλύσεις (log-linear analysis), Βαθμός ικανοποίησης, Διοίκηση και Μάρκετινγκ τουριστικών προορισμών

Introduction

Customer satisfaction is a crucial factor for creating long-term relationships among tourist companies and customers (Day, Schocker and Srivastrava, 1979, p.8 -19; Swarbrooke and Horner, 2001, p.297-314).). If tourists are not fully satisfied by the quality of the services and products provided, it is highly unlike that they visit the same destination again. This reaction is normal if one considers the lack of refunding opportunity for the tourist's potential dissatisfaction.

McNeal argues that the term "consumer satisfaction" is used in order to describe "the fulfillment of a motivating state, the meeting of an expectation, through the purchase of a product or service" (McNeal 1977, pp.231-40). According to Zeithaml and Bitner (1996, p.123-24): "satisfaction, is more inclusive: it is influenced by perceptions of service quality, product quality, and price as well as situational factors and personal factors". Other researchers believe that the dissatisfaction from a service

or product provided in the past could negatively influence the future repurchase behavior (Kabak and Siomkos 1990, Schnaars 1998, pp.201-204).

Dunn Ross and Iso-Ahola (1991, p.232) detected 23 variables measuring customers' satisfaction which were grouped in 6 factors by using a sample of tourists who visited the State of Washington. The factors were: knowledge, escape, tour pace, social interaction, social security and practical aspects. Respectively, Lounsbury and Hoopes (1985) found that the most important factor for achieving tourists' satisfaction is "relaxation and leisure".

The association between satisfaction and the total product offered by a tourist destination presents great interest and has been analyzed in numerous research studies. The visitors' satisfaction depends on certain characteristics of the tourist product offered, such as transportation, accommodation, gastronomy, attractiveness and cost of the service (Pizam, Neumann and Reichel 1978, pp.314-22). Other research studies have focused on the assessment of the tourist product offered based on the degree of satisfaction (Kozak and Rimmington 2000, Tribe and Snaith 1998, Bramwell 1998, Weber 1997, Qu and Li 1997, Danaher and Arweiler 1996, Pizam and Milman 1993, Chon and Olsen 1991).

Generally, the research studies mentioned above approach the satisfaction degree through two points of view. The first one describes the association between the satisfaction degree and visitors' expectations. The second one focuses on the association between the satisfaction degree and the current or previous visitors' experience (Teare 1994, p.28-31).

The most common primary data collection technique for the satisfaction degree analysis is the questionnaire. According to Hague (1993), in a questionnaire, the total satisfaction degree is usually evaluated by a 5-point Likert scale where: 1=Very satisfied, 2=Quite satisfied, 3=Neither satisfied nor dissatisfied, 4=Not very satisfied and 5=Not at all satisfied or with 1=Totally satisfied, 2=Mostly satisfied, 3=Somewhat satisfied, 4 = somewhat dissatisfied and 5=Very dissatisfied (Swarbrooke and Horner, 2001, p.300). These categories could be recoded into two categories, e.g., "satisfied" and "not or less satisfied visitors".

Logit Models and Logit Analysis

Logit models are commonly used in a marketing context. The use of new techniques based on log-linear models have been recently developed since many problems use hypotheses and mathematical models which presupposed the existence of linear relations among the investigated variables (Magidson 1994, p.79).

The logit models are similar to regression models when the dependent variable has two categories and comprises a special form of the general log-linear model (Magidson, 1994, p.81-83, 92). While log-linear models describe the relations among all the variables, logit models describe the degree of effect or influence that the independent variable has on the dependent (Agresti, 1984, p. 4). The use of logit models offers the opportunity to investigate the form of effect of a group of ordinal variables on a dependent ordinal variable. For model fitting, the maximum likelihood ration- chi- square is used.

Methodology

The literature review presented above, taken into consideration for the fulfillment of the research objectives. Precisely, the methodology followed includes:

a. The conduction of fundamental research. The research goals are analyzed as well as the way of conduction and the construction of the logit model with the relevant statistical results.
b. Discussion of the results with emphasis in useful administrative implementation of destination marketing management.

In the present study it is hypothesized that a destination either satisfies or dissatisfies a visitor based on the total set of products and services offered. The factors of the tourist product and service demand for the Northern Greece destination (see Table 1) potentially influence the level of satisfaction for different groups of visitors and, as a result, influence their intention to visit again the destination some time in the future (Kotler, Haider, Rein 1993, p. 202; Moutinho, 1986).

Results

The objective of the analysis is to investigate the relationship between the level of satisfaction (i.e., satisfaction or dissatisfaction) and the factors influencing the tourist product offered. The dependent variable (e.g., the degree of satisfaction) is a binary

variable. Moreover, from the total sample of 5358 English and German tourists, 33 questionnaires were excluded from the analysis as inappropriate for further analysis. Therefore, the total analysis sample includes 5325 respondents, in total.

For the purpose of the present analysis, this has been recoded into 3 categories. The values 1,2 and 3 were recoded into 0 and as a result the percentage of respondents that represent the dissatisfaction is the 11,5% (597 respondents: 395 Germans + 202 English) and the percentage of respondents that expressed satisfaction is 88,5% (4603 respondents: 2431 Germans + 2172 English).

According to Sommer's correlation test of ordinal variables, the most important variables (above + or – 0.100) that are correlated to the dependent variable are 21. These variables together with the dependent variable are 22 altogether. Eighteen variables concern the supply factors and 3 others concern the demographic and psychological/ behavioral variables (ethnicity and motivations) (see table 1).

Table 1: The most important variables according to Sommer's D correlation test that were used for the creation of the Logit statistical models.

Variable	**Variable Coding**
1. Religion – pilgrimages	V11
2. Qualitative services offered	V14
3. Ethnicity	V82
4. Assessment of the landscape	V45
5. Assessment of the climate and the weather	V46
6. Assessment of the place design	V47
7. Assessment of silence in the residential area	V48
8. Assessment of transportation infrastructure	V49
9. Assessment of the residential opportunities	V50
10. Assessment of services in and out of the residential area	V51
11. Assessment of food quality	V52
12. Assessment of politeness and hospitality	V53
13. Assessment of cultural offer and sights	V54
14. Assessment of information in the local tourist office	V55
15. Assessment of the prices and services level	V56
16. Assessment of opportunities for sports and hobby activities	V57
17. Assessment of quality of the sport centers	V58
18. Assessment of walking paths and sight seeing	V59
19. Assessment of entertainment opportunities	V60

20. Assessment of the shops' time program	V62
21. Assessment of the environmental cleanness	V66
22. Degree of visitor's satisfaction	V74

For the pre-testing phase of the study, tourists in the departure waiting area of "Macedonia" airport were approached randomly and asked about their visit in Northern Greece. The personal interviews were conducted in English and German. The 11 questions of the draft questionnaire were appropriately placed in order to provide useful information for further analysis (i.e., interests, motives of arrival, previous arrivals, duration of stay, places visited, satisfaction and factors of influence, way the trip was organized).

The questionnaire included open and closed-ended questions aiming at detecting the most important variables, connected to the positive and negative elements of the existing infrastructure in the destination of Northern Greece. In the Airport, 100 in-depth interviews were carried out with passengers who were about to leave Greece. The interviews followed the questionnaire's structure. The results of the analyses constituted the base for conducting the full-scale quantitative research.

To that end, a questionnaire was constructed which was addressed to tourists, who were about to depart from "Macedonia" Airport by charter flights.

For the construction of an attractive and easily accepted by the tourists questionnaire, a questionnaire that had been used in the past for similar researches was preferred (e.g. Gastebefragung Osterreich 1984 and 1988, EOT researches 30.7-5.8.84 and 20.-26.10.84 and 24.-30.1.85). The questionnaire had to be easily completed and in the same time to fulfill the research's goal for the collection of all the essential data.

The form of questionnaire that was constructed similarly in English and German was designed in such way so as to fulfill all the research objectives. The two nationalities (English and German) were selected because those were the basic categories of foreign tourists in the Airport of "Macedonia". Every year English and German tourists exceed totally the 60% of the tourist leaving the Airport with Charter flights.

Moreover, a great emphasis was given in the coding of the questions for the entry and analysis process to become easier using the statistical package. The final version of the questionnaire included 83 variables and was tested successfully in 30 tourists (pilot test).

In the Airport "Macedonia" Germans and English were approached. Those tourists had plenty of time to complete the German and English version of the questionnaire respectively, as they had approximately 1-2hours spear time before their departure. The mean time of the questionnaire's completion was 10 minutes. The long waiting conditions were suitable for persuading the tourist to dedicate 10 minutes for completing the questionnaire. A pen was given to each tourist before his entrance to the departure room. Questionnaires collected were n1 = 2929 for the Germans and n2 = 2429 for the British.

For the testing of the appropriateness of the above variables as long as it concerns the conduction of conclusions, logit models were created. These models examined the degree of influence of independent grouped variables on the dependent variable (or variable of criterion or variable of correspondence).

More specifically, the satisfaction degree that English and German tourists expressed in a 5-degree-scale constitutes for the present study after the dichotomous coding (0= dissatisfied tourist and 1 = satisfied tourist) the ideal dependent variable for the logit models that were constructed in a later stage.

The variable groups

The 21 descriptive variables were selected after the Sommer's d correlation test for classified variables and were separated in groups. This separation aimed at the facilitation of conducting conclusions and managerial implications.

The nationalities of foreign tourists (variable: V82) constituted an important variable group for the visitors' behavioral description and satisfaction degree. The motivations of arrival (code: V11, V14) constituted the second group of variables for the conduction of conclusions on the relevant motivations that influence the satisfaction degree. In the third group of variables of assessment of the infrastructure, and the provided services, products and natural resources in Northern Greece were included. Variables were separated in subgroups based on the control criterion.

The control criterion refers to the ability of the responsible tourist institution (e.g. EOT, Committees, Local Unions of Hotel owners, etc) to intervene immediately in the following processes: (a) evaluation of the totally provided tourist product and service, (b) tourist organization and administration and (c) planning of marketing activities.

Thus, the variables of this category were separated finally into two subgroups: variables that are controlled by the responsible institution and variables that are controlled indirectly (with collaboration of other institutions) or are not controlled (e.g. weather conditions, hospitality, etc).
For each subgroup the variables belong in to it are respectively:

Controlled variables: v45, v47, v50-v52, v54 - v60
Relatively controlled or not controlled: v48, v49, v62, v66 & v46, v55.

The descriptive statistics (frequencies) demonstrated that the frequencies of visiting North Greece and the intention of visiting again this part of Greece are quite low (see figure 1 and 2). 81,4% of Germans and 82,1% of British visit North Greece for the first time, while 80% of the Germans and British do not plan or maybe they will come again within the next 2 or 3years.

Figure 1: Previous Visits of German and British Tourists

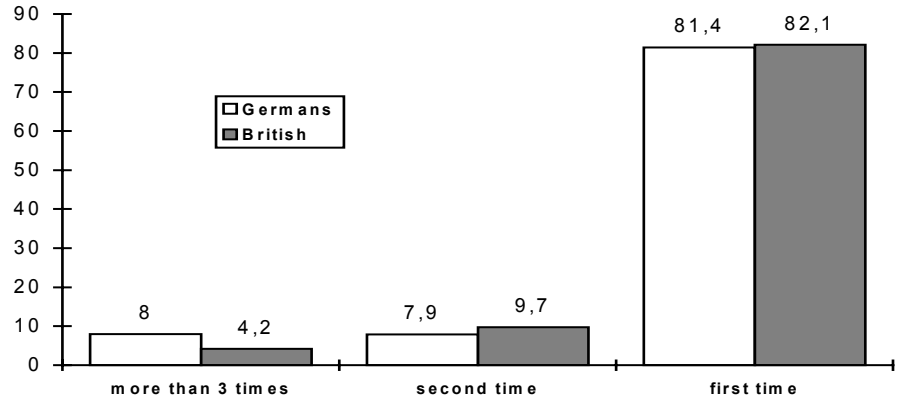
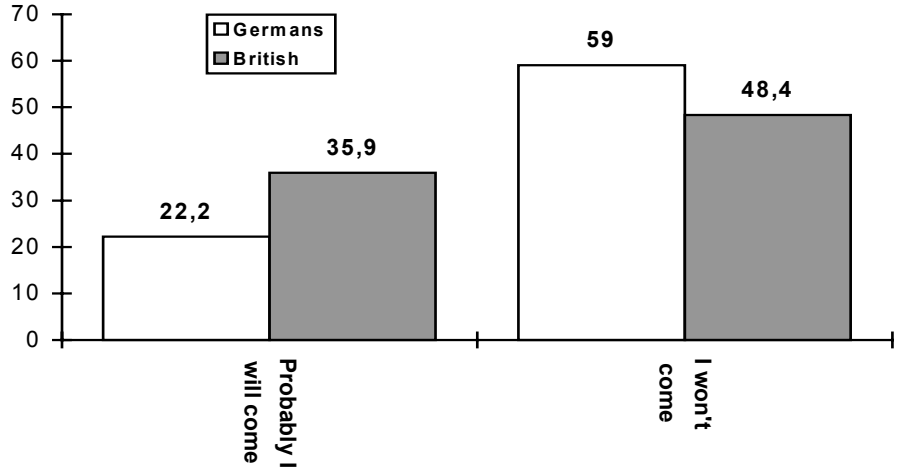


Figure 2: Intention of Visiting again North Greece
within the next 2-3 years



These findings could be considered as important criteria for investigating the quality of the tourist product and service offered.
For further analysis, it is assumed that German and British tourist totally constitute the market segment on which this paper wishes to focus.

The Investigated Model

The general logit models could be calculated in the present study for the desired investigated model based on the visitors' satisfaction. Using many terms in a model, although it gives the opportunity of good fitting control, it diminishes its degree of freedom. The use of such models with many terms should be adopted only when these models are statistically significant in the good fitting control. The general rule is that the appropriate models should be as simple as possible and in the same time should demonstrate good fitting as far as the investigated data concerns (Agresti, 1990, p. 98-100, 215; Norusis, 1992, p.145-214).

For the better understanding of the construction and operation of the logit models, a model of the visitors' satisfaction degree (V74) and the assessment of the infrastructure e.g. the landscape of the destination (V45) is given as an example. The tourists (observations) are grouped into two categories: the first category includes those who are satisfied or very satisfied (value 1), the second category includes those

who are less satisfied or dissatisfied (value 2). The percentages that are presented in table 1 (rows) show a variance between the observations. Tourists that have positively assessed the landscape seem to be more satisfied with their visit in North Greece comparing to those who expressed a less positive assessment for the landscape or declared that are not interested in the landscape as a factor for assessing the current infrastructure.

The test for independence between the variables: Satisfaction degree and assessment of the landscape could have been achieved by testing the adaptation of a loglinear model for the observations presented in the table. If the two variables are independent, a model that does not encompass interaction should be preferred. This is based on the fact that an unsaturated model is considered in the case of independence as sufficient. Moreover, in the loglinear models the examination of variables is not based on the dependent- independent relationship but on all the potential dependencies. As a result, V74 and V45 are used based on the cross-tabulation of the variables' values, on the expected counts that should be included in each observation cell, but they are examined single as to all their possible dependences.

In the case where a variable is a dichotomous dependent variable comparing to other independent variables, then logit models are implied. In this case, the nature of the investigated problem requires the use of similar models, as the objective of the analysis is the detection of effects that the independent variable has on the dependent, the visitors' satisfaction degree: (V74 with categories 0 and 1). In the case of logit models the coding values of the dependent variable (namely 0 and 1) do not constitute values of calculation in the application of model. This means that the logit models are based on the calculation of logit odds rather than on coded/ structured values of variables. These odds are expressed as the ratio of the frequencies of existence of an event to the frequency of its no-existence.

Table 1:
V45: Assessment of offered services (infrastructure, services) by V74 : Satisfaction degree for the destination

	V74		
Numbers in cells : Observations/ raw percentages,	*LOW SATISFIED/ DISSATISFIED*	*SATISFIED AND VERY SATISFIED*	Total Rows

total percentages			
V45	0,00	1,00	
Ignore environment – landscape 0,00	4 36,4 0 ,1	7 63,6 0 ,1	11 0,2
VERY GOOD 1,00	112 5,0 2,3	2134 95,0 43,7	2246 46,0
GOOD 2,00	225 11,7 4,6	1695 88,3 34,7	1920 39,3
BAD 3,00	148 29,2 3,0	359 70,8 7,4	507 10,4
VERY BAD 4,00	64 32,2 1,3	135 67,8 2,8	199 4,1
Column	553	4330	4883
Total	11,3	88,7	100,0
Missing observations: 442			

As Table 1 shows, the observed frequency of a of a visitor who has expressed his full satisfaction by the landscape to be relatively satisfied or dissatisfied from his visit to North Greece is 112, while the observed frequency of those who were satisfied of completely satisfied is 2134.

The estimated differences for a tourist to be very satisfied from the landscape and very satisfied from his visit in Northern Greece is: 2134 / 112 = 19.05357143.

This means that the very satisfied visitors from the landscape tend to declare that they are: “satisfied and very satisfied” from the their visits in Northern Greece. The odds for a visitor who has a negative opinion about the landscape (coded value: 3) to be “satisfied and very satisfied from their visit” is: 359/ 148 = 2,4256.

In addition, this means that visitors who assessed the landscape as bad also tend to be “satisfied and very satisfied” rather than “relatively satisfied or dissatisfied” from their visit in Northern Greece, but had a lower degree of satisfaction comparing to those who expressed their very positive opinion about the landscape. These odds could be also expressed as a ratio of two probabilities, e.g. the odds of being “very satisfied” from visiting the landscape in North Greece and the odds of being “relatively or very satisfied” from visiting Northern Greece.

The investigated logit model could be arisen from the log-linear model. In the saturated log-linear model, the logarithm of the number of very satisfied visitors who assessed the landscape as very good could be expressed as following:

$$\ln(F_{11}) = \mu + \lambda_{(\text{very satisfied from the visit})} + \lambda_{(\text{very satisfied from the landscape})} + \lambda_{(\text{very satisfied from the visit * very satisfied from the landscape})} \quad (2)$$

Similarly, the logarithm of the number of dissatisfied tourists that assessed the landscape as very good could be expressed as following:

$$\ln(F_{12}) = \mu + \lambda_{(\text{..dissatisfied from the visit})} + \lambda_{(\text{very satisfied from the landscape})} + \lambda_{(\text{..dissatisfied from the visit * very satisfied from the landscape})} \quad (3)$$

The logarithm of the ratio of the two frequencies is called logit. The logarithm of the ratio is expressed as following:

$$\ln(F_{11}/F_{12}) = \ln(F_{11}) - \ln(F_{12}) \quad (4)$$

The logit for the visitors who assessed the landscape as very good could be estimated as following:

$$\ln(F_{11}/F_{12}) = (\mu - \mu) + (\lambda_{(\text{..very satisfied})} - \lambda_{(\text{dissatisfied})}) + (\lambda_{(\text{very satisfied from the landscape})} - \lambda_{(\text{very satisfied from the landscape})}) + [(\lambda_{(\text{very satisfied from the visit * very satisfied from the landscape})} - \lambda_{(\text{..dissatisfied from the visit * very satisfied from the landscape})}] \quad (5)$$

The equation (5) become more simplified as μ and λ (very satisfied from the landscape) could be ignored as they have contrary values.

As in the above equation all the λ category parameters have to be equal to zero (in order to have the total natural logarithm of all the observations equal), the categories of the dichotomous variable (dependent V74) will have equal λ and will differentiate only as far as the values concern. As a result:

$$\lambda^{\text{very satisfied from the visit}} = -\lambda^{\text{disatisfied from the visit}}$$

Thus:

$$\lambda^{\substack{[(\text{very satisfied from the visit})* \\ (\text{very satisfied from the landscape})]}} = -\lambda^{\substack{[(\text{..dissatisfied from the visit})* \\ \text{very satisfied from the landscape})]}}$$

Equation (5) takes the following expression:

$$\ln\left(F_{11}/F_{12}\right) = 2 * \left(\lambda^{(\ldots\text{very satisfied})} + \lambda^{\substack{[(\text{very satisfied from the visit})* \\ (\text{very form the landscape})]}}\right)$$

From the above analysis, it is obvious that the logit constitutes an expression of the same parameters lambda (λ) that are used in the general log lineal models. The logit model in its final version is equal to the observed values and the expected values and the residuals, which are all zero. In the logit model the variable assessment of the satisfaction from the landscape is not included as all its categories in the above model are not included. The expected values of the cells in the case of logit models are expressed in log odds and not in simple predicted frequency counts. Thus, the log odds for "those who assessed the landscape as very good" is:

$$\ln\left(F_{11}/F_{12}\right) = 2 * \left(\lambda^{(\text{..very satisfied})} + \lambda^{\substack{(\text{very satisfied from the visit})* \\ (\text{very satisfied form the landscape})]}}\right) =$$

$= 2 * (0{,}7159 + 0{,}7581) = 2* (1{,}474) = 2, 948.$

The predicted odds could be found as followed:

$$F_{11}/F_{12} = e^{-2,\,948} = 19, 07.$$

As the above model is a saturated model, the predicted odds are equal to the observed odds or to the ratio of “satisfied” and “very satisfied” visitors from Northern Greece to the “not so satisfied” and “dissatisfied” for their visit, in other words:

(2134/ 112) - 19,06.

The appropriateness control of a saturated logit model includes the interaction terms of the dependent variable with all its possible combinations among the independent variables. Alternative models could be produced by extracting terms from the saturated model. Those models are called unsaturated models.

Moreover, the results of the Goodness-of-Fit test statistics are presented. The independence test according to the X2 distribution is broadly used. If foreign visitors in Northern Greece follow the two criteria of ranking satisfaction from their visit (first ranking criterion) and assessment of the landscape (second ranking criterion), then for the significance level e.g. 5% , it has to be checked whether the satisfaction degree of the visitor is independent in relation to the assessment degree of the landscape. From the X^2 distribution table for $\alpha = 0,05$ (5%) and df = 4, we have: $X^2\alpha = 9, 49$ because $X^2 = 344, 1942 > X^2\alpha = 9, 49,$ the null hypothesis is rejected and that the landscape influences the satisfaction degree positively or negatively is accepted.

Results after the creation of logit models $\ln (F11/ F12) = 2 \times \lambda^{11}$.

The independence of two or more variables could be tested through the process of independence control. Thus, in this article, every time the model fits well, the variables are independent (the null hypothesis is accepted – the two variables are independent for example because the visitor’s satisfaction degree is included in the same distribution in all categories, e.g., assessment of the landscape). When the model is inappropriate, the alternative hypothesis was accepted. In this way, the independence between the satisfaction degree (V74) and the independent variable was tested. In addition, as mentioned above, the log odds aided in assessing the dependence degree.

In table 2, the total results from the application of the independence test of the visitors’ satisfaction degree with the independent investigating variables. Moreover, the most important results, which stem from the independence test of the logit models

and adjusted residuals, are mentioned. Adjusted residuals = Standard residuals / Estimated standard error.

Independence test's results

In table 2:

a. First column: The variables of the unsaturated logit models which are included in the models, in other words the satisfaction degree: V74 (dependent variable) and the independent influencing variables.

a. Second column: Cells which include:

b. – X2 control value

- value in parenthesis = degrees of freedom
- value in brackets = significance level

For the analysis, the criterion for significance level was 10% or a = 0.10. The asterisks show in which cells the significance level which was selected is satisfied and the alternative hypothesis is also accepted through the X^2 test (the variables are dependent).

Table 2: Appropriateness of the logit models.

Variables of the unsaturated logit models: *ln (F11/F12)=2 x λ*	X^2 test, degrees of freedom (v) and significance level (α)
V74 to V46	X^2=344,194 , v=4 and α=0.000*
V74 to V47	X^2=333,423 , v=4 and α=0.000*
V74 to V48	X^2=214,092 , v=4 and α=0.000*
V74 to V49	X^2=179,223 , v=4 and α=0.000*
V74 to V50	X^2=357,898 , v=4 and α=0.000*
V74 to V51	X^2=335,046 , v=4 and α=0.000*
V74 to V52	X^2=472,436 , v=4 and α=0.000*
V74 to V53	X^2=588,296 , v=4 and α=0.000*
V74 to V54	X^2=237,642 , v=4 and α=0.000*
V74 to V55	X^2=208,720 , v=4 and α=0.000*
V74 to V56	X^2=231,175 , v=4 and α=0.000*
V74 to V57	X^2=141,984 , v=4 and α=1.E-29
V74 to V58	X^2=91,159 , v=4 and α=7.E-19
V74 to V59	X^2=131,928 , v=4 and α=2.E-27
V74 to V60	X^2=303,319 , v=4 and α=0.000*
V74 to V62	X^2=101,024 , v=4 and α=6.E-21
V74 to V66	X^2=110,952 , v=4 and α=5.E-23
V74 to V82	X^2=44,251 , v=2 and α=2.E-10
V74 to V11	X^2=0,000 , v=1 and α=1.000
V74 to V14	X^2=3,966 , v=1 and α=0.046*

Notes:

- For the variables from V46 to V60, V62, V66 with v=4, the coefficient $X^2_{0,10}$ *Pearson* was equal to 7.78.
- * = Acceptance of the alternative hypothesis or depedence of the variables in the significance level of 0,10. As a results, the indepedency model does not fit well.
- For the variables with v=1 frequency correction was implied according to Yates coefficient. The $X^2_{0,10}$ of *Pearson* for the variables *V1*1 and *V*14 was equal to 2,71.
- For the variable V82 with v=2 , $X^2_{0,10}$ *Pearson* coefficient was equal to 4.61

Managerial Implications

Logit models could offer useful information for market segments forecast as they uncover trends (the probability some visitors to be satisfied according to log odds). Statistical data could be used for the support of strategic analyses through longitudinal observations of data which are collected by similar consumer groups with the same statistical techniques (Malhotra and Birks 2003, p. 117-118).

Models could also support, through the assessment of the visitors' satisfaction degree, the analysis of the current situation with useful data which concern the attractiveness degree of the natural and cultural resources as well as the services and the infrastructure that each destination offers. Those data which are directed to the attractiveness that demand implies, could enrich the strategic marketing mix design process. Managers could choose the proper products, services and sightseeing which directly affect the tourists' satisfaction degree. Moreover, managers could reveal through the hierarchical categorization of the factors, the weaknesses the tourist destination presents and to focus on the recognition of the cause (e.g. cross- tabulation of comments and complaints that are presented during the interviews) and the strategic design process of confronting the possible problems to be followed (e.g ipodixis for the improvement of services offered in the residences, in professional confederations). The process, after the problem recognition, could be faced by using improvement of offered services techniques, such as contact point analysis (Gronroos, 1984, pp. 36-41). The bargain power of the destination's administration is reinforced as during the attraction of middle partners- customers, the destination could offer useful data for the influencing factors of the visitors' satisfaction degree relatively to the totally offered tourist product for each region. The pricing policy could be designed according to the influencing factors of the visitors' satisfaction degree (e.g cheaper drinks at the hotels) or to be differentiated (e.g. Demarketing- the efforts to be focused on the reduction of the Demand of the market segment which is price sensitive). Finally, the logit models could support promotion strategies especially

promotions that are connected to statistical analysis data (e.g. print and electronic promotion, comment on the totally offered tourist product and especially variables that positively influence the visitors' satisfaction degree.

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