

ANALYSIS OF FACTORS INFLUENCING TRAVEL CONSUMER SATISFACTION AS REVEALED BY ONLINE COMMUNICATION PLATFORMS

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Abstract

The objective of the present empirical study is to determine the factors influencing the tourism consumer satisfaction, as it results from the evaluations posted on virtual platforms. The communication platform chosen as study is the Romanian website Amfostacolo.ro. In this case, the travel consumer satisfaction is expressed by the score of the ratings posted on the virtual platform Amfostacolo.ro and the decision to recommend or not the unit / destination. Considering the peculiarities of the communication platform studied, the elements influencing the score indicating satisfaction there can be identified as components of tourism supply and the characteristics of the reviewer. Data processing has been carried out with ordinary least squares (OLS), structural equation modeling (confirmatory factor analysis, path analysis), cluster analysis and polytomous logistic regression.

The results broadly confirm the hypotheses, namely that: the type of stay and the age of the reviewer influence the satisfaction of the consumer more than the destination and number of stars of the accommodation, the age group of the reviewer influences the destination yet it is uncertain about the influence of the variables related to the holiday (the type of stay and the number of stars of the accommodation), the meal service influences more than other attributes the consumer satisfaction and the recommendation of the reviewer is influenced by the characteristics related to his person and the holiday consumed.

Key words: e-WOM; tourism; evaluation; satisfaction; amfostacolo.ro

JEL Classification: D12, Z33, C52, C50, L86

I. INTRODUCTION

Web 2.0 applications encourage online interaction for users and the way in which travelers create and exchange views on travel. Romanian operators and small tourism tend to understand the role that environment plays in promoting their online business (Moisescu, Gica, 2015). These applications have helped develop verbal marketing on the Internet, also known as e-WOM.

In the travel industry, online reviews can be considered electronic versions of traditional word-of-mouth (WOM) (Filieri, McLeary, 2013). The communication portals encourage the posting of reviews / comments about accommodation, meal services, destinations and other related products. Online reviews posted by customers have become a major source of information on the quality of products for both consumers and marketers (Hu, Liu and Zhang, 2008). In the hospitality industry, the key to determine customer satisfaction is the identification of attributes that influence the consumer's needs and expectations (Yang Cheng and Sung, 2011). Several studies have measured the factors affecting the choice of a hotel and Ye et al. (2014) mention among factors: cleanliness, convenient location, value for money, friendly staff.

Here we must mention the types of confusions that are made when studying the satisfaction attributes:

1. confusion between the factors influencing the choice of an accommodation / destination and the information sources (Jones, Chen, 2011). They are often listed together for evaluation (location, price, recommendation from friends);
2. confusion between the factors influencing the choice of an unit/ destination before consumption (e.g. location, price, WiFi etc.) and the factors influencing the satisfaction and which can be evaluated only after consumption (e.g. cleanliness, staff behavior, quality of sleep);
3. treating together different categories such as a service with its attributes thereof or other services (e.g. accommodation, quality of sleep, meals, staff behavior).

Various studies have used online reviews as a way of exploring the perceptions and consumer satisfaction. For example, in the case of restaurants, the analysis of online commentaries has revealed the factors influencing the consumer perceptions (Pantelidis, 2010) as: food, service, ambience, price, design etc. Often, the satisfaction is assessed in terms of "value for money" because hotels with different levels of classification (stars)

offer various quality standards and the performance of the offer depends on the hotel classification (Liu and Liu, 1993). Various studies carried out have generated a list of attributes of quality (Ye et al., 2014) that booking and comment websites use. For there is a direct link between satisfaction and service quality, the efforts go toward a full and fair assessment of service quality. The web sites choose to ask the consumers for an overall assessment (correspondent of satisfaction) and then for a detailed assessment of either the services / offer (Amfostacolo.ro) or of the attributes of the service/ (Tripadvisor.com, Booking.com, Expedia.ie etc.). Obtaining the global assessment score as an average of the component assessment cancels the overall assessment indicator (Amfostacolo.ro).

Online travel agencies (Tripadvisor.com, Booking.com, Expedia.ie etc.) encourage the posting of reviews and ratings that are used for classifications and hierarchies of units / destinations based on different attributes of different measurement scales. For example, Booking.com (<http://www.booking.com/reviews/>) with a scale of 10 levels evaluates: cleanliness, location, staff, free WiFi, comfort, value for money. TripAdvisor.com (<https://www.tripadvisor.com/UserReviewEdit>) with a 5-step scale evaluates: cleanliness, services, value. Also on a scale of 5 steps, Expedia.ie (<https://www.expedia.ie/>) assesses: room cleanliness, services and staff, the comfort of rooms, the state of the hotel. The Romanian site Amfostacolo.ro does not assess the performance of the quality attributes but the performance by category of services as a whole, namely: services, accommodation, cuisine and meals, the natural environment, entertainment / leisure. The rating scale is 1-100%.

Studies have shown that the attributes of quality rating services differ in importance and even in content depending on the type of holiday (business or leisure) (Ye et al., 2014 Clow, Garretson and Kurtz, 1994; Knutson, 1988). Also, the stars of the hotel affect the way in which the quality and value received are perceived relative to the price associated (Ye et al., 2014).

II. RESEARCH METHODOLOGY AND RESULTS

The objective of this study is to determine the factors influencing the tourism consumer satisfaction, satisfaction expressed by the score of ratings posted on the Amfostacolo.ro virtual platform. Considering the peculiarities of the communication platform studied, the elements influencing the score indicating satisfaction can be identified as components of tourism offer and the characteristics of the reviewer.

We wanted to investigate, firstly, the extent to which certain identifiable characteristics of the reviewer (age, type of stay and destination chosen) exercise a certain influence on overall score and on the decision to recommend the unit / destination, these being the only elements reflecting the satisfaction on the Amfostacolo.ro site (together with the recommendation). The overall assessment is obtained on the site studied as a weighted mean of the evaluation of the components of the offer as a whole and not as detailed attributes. Since the reviewers have chosen, in some cases, not to rate all the components of the offer (Ban, Bădulescu, 2015), we conclude that certain components have been assigned less importance than others in the process of evaluation. Therefore, secondly, we aimed to determine the hierarchy that the offer components have in the evaluation, considering their choice by the reviewer.

The research base was the travel comments website Am Fost Acolo/ I Was There (Amfostacolo.ro), which is a Romanian site, born in 1998, site where you can gather and where you can post holiday impressions, you can watch pictures, you can see and compare deals and can make bookings (Ban et al., 2015; Ban and Bădulescu, 2015).

The website includes sites and accommodation facilities in over 60 destinations worldwide, with related evaluations and network moderators of the destination. The Amfostacolo.ro website uses several indicators to evaluate the satisfaction, catching also the evaluation part beyond the 5 quality features used, that is:

- 5 features which are subject to scores from 1 to 10 (1-100%);
- the degree of satisfaction in percentages, given by the average of characteristics;
- the recommendation made by a reviewer (Yes or Not);
- the appreciation points of the usefulness of the comment, awarded by the site visitors.

According to MiniGuide guide of AmFostAcolo.ro (<http://amfostacolo.ro/help9.php?id=38>), the organization system designed and implemented by AmFostAcolo is based on two fundamental concepts:

1. Sharing information (impressions, advice, recommendations) into two distinct categories:

"accommodation" impressions - recommendations impressions about hotels, villas, guesthouses etc. and "travel" impressions - contain useful information, advice, recommendations about places worth (or not worth!) visiting (restaurant, towns, museums, belvedere places, beaches, mountains, national or local parks etc.).

2. The second important criterion is the geographical organization. All the "records" relating to a specific geographical area are "gathered into a "mini-library" bearing the sticker corresponding to the name of that area. The destinations include regions and the regions include sections.

The program calculates, based on the scores and recommendations of each review, two very important synthetic indicators for each hotel / villa / lodge:

- the average of scores awarded;
- the average degree of recommendation (yes or no).

If the reviewer makes does not award any mark to a criterion, this criterion will automatically receive "-1" from the site administrators, and this criterion will be removed from average calculation. Based on the above two

indicators, the programme offers rankings of the most recommendable accommodation units, for each section, region or country. The site uses the GAP system (Gratitude – Appreciation Points) (http://amfostacolo.ro/pma_explic.php). Each information, text or photo uploaded on the site and in general every action useful to visitors brings a number of GAP. The management team evaluates the review and decides whether it is "accepted in the contest" (in this case it receives the GAP 1000 standard score, considered as "the vote of the site") or not. Each review admitted to the competition can get, in addition to the standard score, votes from the other users - APPRECIATIONS/ BONUSES [with values of +450/ +900 GAP]. The impressions that are not admitted to the competition can only receive symbolic votes worth of +1 GAP ("dislike") or -1 GAP ("dislike"). Furthermore, points are awarded for the number of votes received, for photographs, photograph comments, replies to the posts etc.

The research hypotheses formulated are the following:

H1: The type of stay and the age of the reviewer influence the consumer satisfaction (as measured by the score) more than the destination and the number of stars of the accommodation.

H2: The age group of the reviewer influences the holiday-related variables (type of stay, destination and number of stars of the accommodation).

H3: The table service mostly influences the consumer satisfaction.

H4: The recommendation of the reviewer is influenced by the characteristics related to his person and the consumed holidays.

Data were gathered from the site on 04.30.2015 (posted at the time) and entered into an excel document, from where we selected the desired information as specified in the Table 1. We have analysed a total of 23975 observations in relations to 13 variables. All the posts of both categories: accommodation and travel have been analysed.

Table 1. Alphabetic list of variables and attributes from Amfostacolo.ro

Variables	Label	Type	Classes for Char
Author Group Age	Years	Char	<20 years, 20-30 years, 30-40 years, 40-50 years , 50-60 years, >60 year
Score	Aggregate score	Num	
Rate Kitchen Menu	Score for food	Num	
Rate Surround environment	Score for landscape	Num	
Rate Accomodation	Score for accommodation	Num	
Rate Relaxing fun	Score for fun and relaxation	Num	
Rate Services	Score for services	Num	
Stars	Stars	Num	
Recommendation	Subsequent recommendation	Num	-1. 0. 1
Satisfaction	Satisfaction	Num	
Destination	Destination	Num	Romania, Abroad
Stay	Type of stay	Char	Family, Single, Other
Review	Type of review	Char	Travel, Accommodation

H1: The type of stay and the age of the reviewer influence the consumer more than the destination and the number of stars of the accommodation

To verify the first hypothesis, we have rated the variables according to frequency and weight (Table 2).

Table 2. Descriptive statistics data taken from Amfostacolo.ro

Destination	Frequency	Percent
0 (Romania)	9523	39.72
1(Abroad)	14452	60.28

Author Group Age	Frequency	Percent
20-30 years	4896	20.42
30-40 years	11949	49.84
40-50 years	5515	23.00
50-60 years	1044	4.35
<20 years	401	1.67
> 60 years	170	0.71

Stay	Frequency	Percent
Family	21131	88.14
Single	450	1.88
other	2394	9.99

Stars	Frequency	Percent
0	821	3.42
1	309	1.29
2	1744	7.27
3	9035	37.69
4	8035	33.51
5	4031	16.81

We used the method of Ordinary Least Squares (OLS) or Linear Least Squares, a method estimating the unknown parameters in a linear regression model.

When OLS regression has been employed, we see that all estimated coefficients are statistically significant and positive (Table 3). Satisfaction is thereby positively associated with destination (Romania or abroad), type of stay, class age of the reviewer and star classification of the resort.

The results show a greater connection between the type of stay and the overall satisfaction, and between the age and the overall satisfaction than between the destination and the overall satisfaction, and the number of stars and the overall satisfaction, respectively (Table 3). H1 hypothesis is validated.

Table 3. Identified factors affecting satisfaction

Path			Estimate	Standard Error	t Value
Satisfaction	<---	Destination	0.01066	0.0001580	67.46593
Satisfaction	<---	Stay	0.53872	0.0003569	1509
Satisfaction	<---	Age group	0.53949	0.0003786	1425
Satisfaction	<---	Stars	0.01951	0.00182	10.69484

H2: The age group of the reviewer influences the holiday-related variables (type of stay, destination and number of stars of the accommodation)

The analysis of the correlation between the exogenous variables has emphasised the existing connection.(Table 4)

Table 4. Analysis of the correlation between exogenous variables

Var1	Var2	Estimate	Standard Error	t Value
Destination	Stars	0.26012	0.00602	43.19778
Stars	Stay	-0.01921	0.00427	-4.50316
Destination	Stay	0.06862	0.00573	11.97943
Stars	Age group	-0.02029	0.00427	-4.74998
Destination	Age group	0.06860	0.00574	11.95986
Age group	Stay	0.50236	9.56473E-7	525219

Obviously, there is strong pair wise association among independent variables. We note negative values when verifying the correlation between the number of stars and the type of stay and that between the number of stars and the age group. For this reason, we have verified the existence and the type of correlation by clustering method (Table 5). The inconclusive results obtained (Table 5) lead to validating the null hypothesis and the failure to produce a correlation between the age group and the number of stars of the unit and between the number of stars and the type of stay. Therefore, the age group influences the type of stay, in a lesser extent the destination is inconclusive in the case of the number of stars of the unit. H2 hypothesis is partially validated.

Table 5. Verifying the correlation by cluster analysis

Cluster ID	Variable	Value 1	Value 2	Value 3	Value 4	Value 5	Value 6
1	Stars	0 %73.68	1 %26.32				
1	Type of review	Travel %80.00	de accomm. %20.00				
1	Age	20-30 years %15.79	30-40 years %45.26	40-50 years %27.37	50-60 years %7.37	<20 years %1.05	> 60 years %3.16
1	Type of stay	Single %33.68	Family %40.00	other %16.84	single %6.32	team-building %3.16	
1	Destination	0 %26.32	1 %73.68				
2	Stars	2 %16.68	3 %83.32				
2	Type of review	accomm. %100.0					
2	Age	20-30 years %21.96	30-40 years %46.07	40-50 years %24.54	50-60 years %4.95	<20 years %1.18	> 60 years %1.29
2	Type of stay	single %34.98	Family %48.22	other %11.95	single %2.48	team-building %2.37	
2	Destination	0 %61.14	1 %38.86				
3	Stars	4 %67.52	5 %32.48				
3	Type of review	travel %0.41	de accomm. %99.59				
3	Age	20-30 years %18.65	30-40 years %52.36	40-50 years %22.44	50-60 years %4.41	<20 years %1.74	>60 years %0.41
3	Type of stay	Single %33.09	Family %57.58	any %0.10	other %6.66	single %1.43	Team-building %1.13
3	Destination	0 %21.21	1 %78.79				

The analysis of the results shows that there is a positive correlation between: the destination and the number of stars of the unit, between the destination and the type of stay, between the destination and the age

groups and between the age group and the type of stay. Negative correlation, that is a reverse link, has been recorded between: the number of stars of the unit and the type of stay and the number of stars and the age group.

H3: The table service mostly influences the consumer satisfaction

Since the site’s rules allow the calculation of the overall score (the mean of the five characteristics) and without the score given to certain features, we wanted to check the influence the characteristics have in the global score.

We have used the structural equation modeling which is a set of mathematical models, computer algorithms and statistical methods (SEM). SEM includes confirmatory factor analysis, path analysis, partial least squares path analysis, LISREL and latent growth modelling.

Structural equations have been employed in a confirmatory analysis for assessing the scale used to measure the latent variable ‘Score’. Indicator variables considered are (i) score for food, (ii) for landscape, (iii) for accommodation, (iv) for fun and (v) for services.

Table 6. Standardized Results for PATH List

Path		Estimate	Standard Error	t Value	
score	--->	Rate Services	0.93513	0.00126	743.10869
score	--->	Rate Accommodations	0.85521	0.00201	425.61351
score	--->	Rate Kitchen Menu	0.87438	0.00182	481.42528
score	--->	Rate Surround environment	0.61663	0.00422	146.23976
score	--->	Rate Relaxing fun	0.83364	0.00223	373.97675

We see that all the coefficients are statistically significant (Table 6). In addition, the estimates which correspond to factor loadings are above the 0.6 threshold. Model fit is excellent with SRMSR 0.022, GFI 0.97, AGFI 0.91 and Bentler Comparative Fit Index 0.98. (Table 7)

The results have showed that all the characteristics influence the final score (known subject) but there is a hierarchy of influences, as follows: service score, kitchen score, accommodation score, entertainment score and the score for the natural surroundings.

Table 7. Model fit

Modelling Info	N Observations	23975
	N Variables	5
	N Moments	15
	Pr > Chi-Square	<.0001
	Standardized RMSR (SRMSR)	0.0222
	Goodness of Fit Index (GFI)	0.9761
Parsimony Index	Adjusted GFI (AGFI)	0.9103
Incremental Index	Bentler Comparative Fit Index	0.9839

As other empirical studies have shown, the table services had a major influence on consumer satisfaction, ranking second in our study. Sparks et al. (2003) showed that food and drink can be important factors in choosing a destination, contributing to the overall satisfaction, an opinion supported by Khoo-Lattimore and Ekiz (2014). In third place are the accommodation services, considered the key of the hospitality industry (Kandampully, 2002; Kotler, Bowen and Makens, 2010).

H3 hypothesis is not confirmed, the table services not having the highest influence on the consumer satisfaction.

H4: The recommendation of the reviewer is influenced by the characteristics related to his person and the consumed holidays

The tests for assessing model fit through explanatory capability??? are also supportive of the model as shown by the likelihood ratio test and the score test (P<0.0001).

We have employed here a polytomous logistic regression. The target variable is Recommendation, a variable with three classes (-1 = 'negative recommendation', 0='neutral recommendation' and 1='positive recommendation'.

Table 8. Analysis of Maximum Likelihood Estimates

Parameter		Estimate	Standard Error	Pr > ChiSq
score		4.5351	0.0707	<.0001
destination	0	0.2151	0.0685	0.0017
stay	Family	0.00833	0.1145	0.9420
stay	Single	0.2931	0.2609	0.2612
review	Travel	0.6199	0.2600	0.0171
group age	20-30 years	-0.0605	0.5490	0.9123
group age	30-40 years	-0.1810	0.5460	0.7403
group age	40-50 years	-0.1602	0.5481	0.7701
group age	50-60 years	0.0126	0.5681	0.9823
group age	<20 years	0.1123	0.6115	0.8542

We control for type of type of stay, type of review, destination and age. We see that the estimates corresponding to stay and age are not statistically significant (Table 8).

As anticipated the aggregate score does impact the recommendation and the estimate is positive and statistically significant. Type of review (travel or accommodation) also influences the recommendation (Table 9).

Table 9. Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
Factor 1	93.236	81.177	107.087
destination 0 versus 1	1.240	1.084	1.418
Review (Stay versus Accommodation)	1.859	1.117	3.094

The above table (Table 9) presents the odds ratio estimates. The value listed for "destination" (1.240) shows the extent to which the odds for a positive recommendation are higher for those choosing a destination in Romania as compared for those choosing a destination abroad. Obviously, decision to make a positive recommendation given a certain level of services is more likely in Romania then abroad since in the latter case there are other factors (costs, duration of the voyage) which might negatively influence a subsequent recommendation.

H4 hypothesis is partially verified. The recommendation of the tourist does not depend either on his age nor the type of stay, yet it depends on the destination and the review (journey or accommodation).

III. CONCLUSION AND IMPLICATIONS

In theoretical terms, this study complements the existing knowledge regarding the influence of various factors in assessing satisfaction.

The empirical study seeks to expand the understanding of how different variables (destination, type of stay, number of stars of the unit or the age group of the reviewer) influence the overall score of online rating of travel services (a substitute for satisfaction in this study). The results show a greater connection between the type of stay and the overall satisfaction, respectively between the age and the overall satisfaction than between the destination and the overall satisfaction, respectively the number of stars and the overall satisfaction. The analysis of the results shows that there is a positive correlation between: the destination and the number of stars of the unit, between the destination and the type of stay, between the destination and the age group and between the age group and the type of stay.

Also, for the consistent sample considered (23,975 ratings), it has been determined how services affect the overall score (satisfaction). The offer components that mostly influence the overall score (in this case those that are most valued) are: services, food, accommodation, relaxation and environment.

The tourist's recommendation does not depend on his age and any type of stay but it depends on destination and review (travel or accommodation). This finding has direct practical implications because it shows that the consumer recommendation is related to the destination consumed, that is an appreciated destination will be recommended to other consumers. Also, relating the recommendation to the type of review shows a possible link between the length of stay in a place and the willingness to recommend the place.

Furthermore, this study has practical implications for tourism managers, who will know how to better accentuate certain characteristics of their offer (such as table services).

The limitations of this study are given by the analysis of only one comment website (Amfostacolo.ro) and which addresses exclusively the Romanians traveling in Romania or abroad.

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