Online Guest Ratings of Hotels in Tirana

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Abstract -- During the travel and tourism decision making process, the online reviews are used as an important source of information by hotel guests. The aim of this study was to analyze the online ratings of hotels in Tirana. The average overall online rating for hotels was 8.82. Results of chi square test indicated that hotel category was related to the overall online rating. The logistic model results indicated that hotel's size negatively impact the overall online rating, whereas the hotel's category positively impact the overall online rating of the hotels in Tirana. These findings are useful for hotel guests, potential customers and hotels' managers.
Keywords: online ratings, Booking.com, hotel sector, chi-square test, logistic model, Albania

I. Introduction

Advancement in information and communication technology has influenced the tourism and hospitality industry. A number of websites such as Booking.com, Tripadvisor, Expedia, Hotels.com, etc, enable users to exchange information, opinions or recommendations about certain destinations, hotels and other tourist services ([1], [2]). These websites give reviews about the accommodation establishments and produce an online rating for each property based on the individual user reviews. According to [3], the influence of these online review platforms has a great contribution to the tourism and hospitality industry in general. The hotels have been using their own review platform to help their guests and potential customers to interact with each other [4].

Given the growing easiness of access to the Internet and the ability to produce online content, consumers now rely on online reviews generated by other users to form an opinion about tourist destinations and hotels ([1], [5]). Today, hotel customers also make purchase decision based on peers' opinions, online ratings or third party feedback posted online [6].

As research shows that evaluations posted on the web and social media sites are important to consumer decisions [7], business units must pay attention to those opinions, especially hotel units as many potential guests read online opinions before making their booking decisions.

Booking.com is the world leader of online hotel bookings. The Booking.com offer over 1.4 million properties, cover more than 121,000 destinations in 228 countries. Every day more than 1.5 million room nights are reserved on the Booking.com platform [8].

The Travel and Tourism Economic Impact 2017 report for Albania [9] indicated that the direct contribution of Travel & Tourism to GDP in 2016 was ALL127.7bn or 8.4% of GDP and it is forecast to rise by 5.2% to ALL134.3bn in 2017. The total contribution of Travel & Tourism to GDP was ALL393.0bn in 2016 or 26.0% of GDP, and is expected to grow by 5.3% to ALL413.8bn or 26.4% of GDP in 2017.

This study aims to analyze the online ratings of 94 hotels in Tirana using data from Booking.com. The logistic regression model was used to identify the factors such as size, category of the hotels, the number of online reviews and year that hotel was welcomed by Booking.com that influence the overall online rating of hotels in Tirana.

II. Literature review

Travel websites are playing an increasing role in the tourism and hospitality sector, facilitating dynamic and effective interactions between hotels and their customers. In recent years, a growing number of opinion platforms which offer consumer online reviews or product ratings have been created. The online reviewers are used by customers as an important source in travel and tourism decision making process [1]. Consumers tend to rely on other customers' reviews when making decision about hotel selection [5]. According to [10], potential customers tend to trust online comments by other customers more than recommendations of official destination marketing or hotel websites.

The study of [11] suggests that user-generated reviews are believed to be more credible than information provided by suppliers of products and services. Also, authors found that with the increase of quality and quantity of online reviews, the buying intentions increase. The results of the study of [12] indicated that positive online user recommendations influence positively and significantly the performance of tourism enterprises.

The study of [13] compared the TripAdvisor scores and traditional customer satisfaction through travel intermediaries. The authors found out that online reviews play a more significant role in explaining hotel performance metrics than traditional feedback.

In their study, [14] analysed the online ratings of 110 hotels using the data of Booking.com and TripAdvisor. The results indicated that the online ratings of hotels in Booking.com and TripAdvisor were found to be highly correlated; the hotel's size and category negatively influenced the online rating, while the number of online reviewers had a positive influence on online rating.

In the study of [15], was examined the online ratings of hotels operating in Albania. It was found that hotel's size and region negatively impacted the overall online rating of the hotels, whereas the hotel's category and the number of online reviews positively impact the overall online rating.

II. Research Methodology

The target population of this study consisted of hotels operating in Tirana. The data from Booking.com were collected from 29 November to 1 December 2017 for 94 hotels with more than 30 online reviews. Information about online revierwers' score for cleanliness, comfort, location, facilities, staff, value for money, Free Wi-Fi, and overall online rating; information about the category of the hotel (star number), size of the hotel (number of rooms), the number of online reviews, type of guests and year since the Booking.com has wellcomed the hotel were gathered.

To analyze the relationships between hotel size, category, number of the reviews and the overall online rating of hotels in Tirana, firstly was used the chi-square test of independence and then, to assess the simultaneous influence of all independent variables on the overall online rating of hotels, binary logistic regression analysis was used.

The chi-square test of independence was used to test the independence of the two categorical variables (that is, there is no relationship between them). The null hypothesis is rejected at the level of significance 5%, if p-value is less than 5%.

Logistic regression is recommended over linear regression when modelling binary responses and allows the researcher to estimate probabilities of the response occurring [16]. The logistic regression equation takes the following form

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + ... + \beta_k x_k$$

where p is the estimated probability that a hotel to have an overall online rating ranging from 9.1 to 10; β_0, β_1, β_2, ..., β_k are coefficients of the model and x_1, x_2, ..., x_k are independent or explanatory variables of the model.

The estimated probability of the response occurring (p) divided by the probability of the response not occurring (1-p) is called the odds ratio (OR). Maximum likelihood method is used to estimate the odds ratios of the model. Values of odds ratios higher than 1 indicate positive association between the variables, odds ratios lower than 1 indicate negative association, whereas odds ratios equal to 1 indicate no association between each independent variable and the dependent variable of the model.

STATA software was used to analyze the data.

III. Results and discussion

About 39% of the hotels had 11 to 20 rooms, and 49% of them were 4 or 5-star hotels. Also 39.4% of the hotels had from 31 to 100 online reviews and 41.5% of the hotels have been welcomed by Booking.com in years 2011-2012 (Table 1, in Appendix).

Among online reviewers of hotels in Tirana, about 62% of them have scored from 9 to 10 and 30% have scored from 7 to 9. About 31% of online reviewers were couples, 24% were solo travelers and 19.5% business travelers (fig.1).
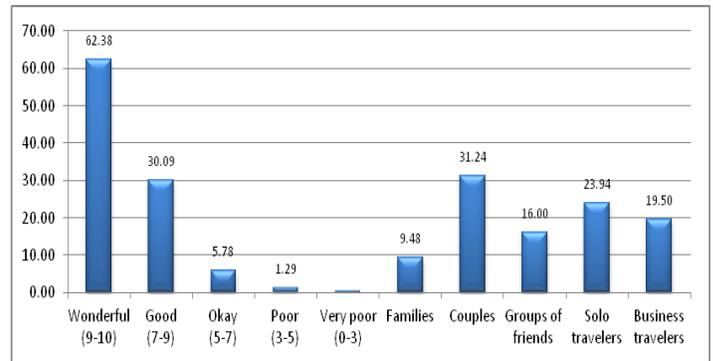

Fig. 1: Percentage of online reviewers according to their score and type

The Booking.com estimates the online ratings of hotels using seven dimensions of performance: cleanliness, comfort, location, facilities, staff, value for money and free Wi-Fi. The online scoring of Booking.com allows customers to award quantitative scores ranging from 0 to 10. The average overall online rating for hotels in Tirana was 8.82 with a standard deviation of 0.53.

The staff had the highest score for 34 hotels (36.2%) in the sample, and for 25 hotels (26.6%) the location had the highest score. For 33 hotels (35.1%), the second highest reviewers score was the staff and for 27 hotels (28.7%) was the cleanliness. For 23 hotels (24.5%), the third highest score was the cleanliness and for 17 hotels (18%) was the value for money (fig. 2).
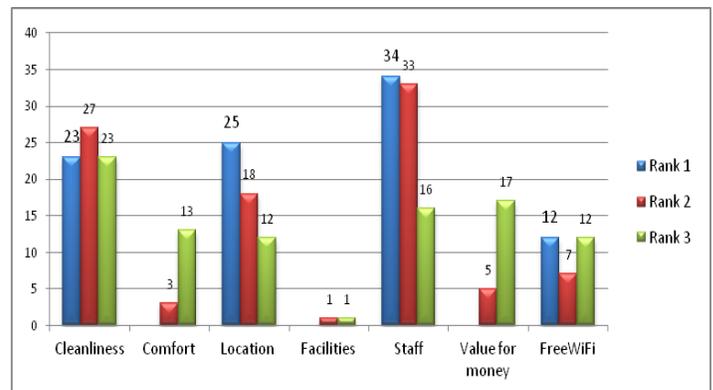

Fig 2: Number of hotels according to the scores of online reviewers

The correlation matrix in table 1 indicated that the overall online rating was positively and significantly correlated with all the dimensions of hotel performance at 5% level.

Table 1: The correlation matrix between the dimensions of performance

	1	2	3	4	5	6	7	8
1.Overall	1.0							
2.Cleanliness	0.9	1.0						
3. Comfort	0.9	0.9	1.0					
4. Location	0.5	0.4	0.3	1.0				
5. Facilities	0.9	0.9	0.9	0.3	1.0			
6. Staff	0.8	0.8	0.7	0.4	0.7	1.0		
7. Value for money	0.8	0.8	0.8	0.3	0.8	0.8	1.0	
8. Free Wi-Fi	0.7	0.6	0.6	0.4	0.6	0.6	0.6	1.0

Note: all coefficients were statistically significant at 5% level.

The results of the chi-square test of independence in table 2 indicated no significant relations between hotel size, number of online reviews and the overall online rating (9.1 or more). The hotel category was significantly related to the overall online rating at 5% level, whereas the year that the hotel was welcomed by Booking.com was statistically related to the overall online rating at 10% level.

Table 2: Chi-square test results (overall online rating)

Variable	Chi-square value (df)
Size	0.573 (1)
Category	5.163[*](1)
Online Reviews	0.534 (2)
Year in Booking.com	3.520[+](1)

Note: * $p < 0.05$, [+] $p < 0.10$.

The results of logistic regression analysis

To estimate a binary logistic regression model, a dependent variable with binary response was used. A hotel was considered with top performance and coded by 1 if its overall online reviewers score was from 9.1 to 10. The results of the binary logistic regression model indicated that the model was statistically significant, LR chi-square (5) = 17.72, $p < 0.01$ (table 3). The value of Pseudo-R^2 was 14% and the percentage of cases correctly classified was 70.21%. The correlation matrix for the variables of the model is shown in table 2, in Appendix.

The results of logistic regression model indicated that the overall online rating was negatively influenced by the hotel's size at 10% level, that is, the hotels with 21 rooms or more were less likely to score from 9.1 to 10 by online reviewers. In their study, [14] found that the hotel size had a negative and no significant influence on online rating, whereas in the study of [15] was found negative and significant influence of the hotel size on overall online rating.

The overall online rating was positively influenced by the hotel category at 1% level; this means that 4 or 5-star hotels were more likely to have an overall online rating from 9.1 to 10. In the study of [14] was found negative and no significant impact of hotel category on online rating, whereas the results of [15] indicated positive and significant impact.

Table 3: Results of binary logistic regression model

Variable	Overall online rating	
	Coefficient	OR
Size		
20 rooms or less		1.000
21 rooms or more	-0.995[+]	0.370[+]
Category		
4 or 5 star	1.965[**]	7.134[**]
3 or 2 star or unrated		1.000
Number of online reviews		
30 to 100		1.000
101 to 200	1.123[+]	3.074[+]
201 or more	0.713	2.041
Year hotel was welcomed by Booking.com		
2011-2013	-1.330[*]	0.264[*]
2014-2017		1.000
Constant	-0.876[+]	0.416[+]
LR chi-square (df)	17.72(5)[**]	
% correctly classified	70.21%	
Pseudo-R^2	13.97%	

Note: + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

The number of online reviews positively influenced the overall online rating at 10% level, indicating that hotels with more than 100 online reviews were more likely to have an overall online rating higher than 9. This finding was consistent with the findings of [14] and [15].

The overall online rating of hotels in Tirana was negatively influenced by the year that hotel was welcomed by Booking.com at 5% level, that is, the hotels welcomed by Booking.com in years 2011-2013 were less likely to score from 9.1 to 10 by online reviewers.

IV. Conclusions

Online reviews and online ratings have a growing importance for business units, and their impact on the consumer decision-making process is increasing. The goal of this research was to analyze the online ratings of 94 hotels in Tirana.

The results of descriptive analysis indicated that about 49% of the hotels are 4 or 5-star hotels, and the average overall online rating for hotels was 8.82 with a standard deviation of 0.53. About 62% of online reviewers have scored 9 to 10, indicating that 62% of online reviewers awarded scores that reflect very good experiences during their hotel stays in Tirana. The staff had the highest score for 36.2% of the hotels in the sample, followed by location for 26.6% of hotels and cleanliness for 24.5% of hotels.

The results of chi-square test of independence indicated that the category of hotel was statistically and significantly related to the overall online rating at 5% level.

The results of logistic model indicated that hotel's size and year that hotel was welcomed by Booking.com negatively influenced the overall online rating of the hotels in Tirana, whereas the hotel's category and number of online reviews positively influenced the overall online rating. More clearly, hotels with 20 rooms or less, 4 or 5-star hotels, hotels with more

than 100 online reviews and hotels welcomed by Booking.com in years 2014-2017 were more likely to score ranging from 9.1 to 10 by online reviewers.

The findings of this study can be used by potential customers, hotel guests, and by hotels' managers to make decisions regarding their marketing budget allocation and to increase the online ratings of their hotel.

The managers should pay attention to the online reviews of the hotels' guests and also they must encourage their guests to write reviews about their hotel stay.

In the future research, the comparison of online ratings of hotels in Tirana generated from Booking.com and TripAdvisor can be conducted.

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Appendix

Table 1. Descriptive statistics

Variable	Frequency	Percentage
Size (number of rooms)		
≤ 10	26	27.66
11 – 20	37	39.36
21 – 30	15	15.96
> 30	16	17.02
Category (star number)		
5	4	4.26
4	42	44.68
3	38	40.43
2	4	4.26
Unrated	6	6.38
Number of online reviews		
31-100	37	39.36
101-200	24	25.53
> 200	33	35.11
Starting Year in Booking.com		
2011-2012	39	41.49
2013-2014	27	28.72
2015-2017	28	29.79
Total	94	100

Table 2. Correlation matrix between variables of the model

	1	2	3	4	5
1.Overall	1.00				
2.Size	-0.02*	1.00			
3.Category	0.23*	0.40*	1.00		
4. Reviews	0.12*	0.29*	0.04*	1.00	
5.Year in Booking.com	-0.19*	0.11*	0.26*	-0.07	1.00

Note: $* p < 0.05$