AN ANALYSIS OF BELGRADE HOTEL GUESTS’ INCLINATION FOR POSTING REVIEWS ON THE TRIPADVISOR

Saša MAŠIĆ, Slavoljub VIĆIĆ

Abstract: The research required for the purposes of this study was carried out using a sample of Belgrade hotels. The aim of the study was to analyze the tendency of Belgrade hotel guests to post hotel reviews on the TripAdvisor portal during the study period between 2005 and 2014 in order to determine whether there were any significant changes in this tendency during the observed period. Another aim was to determine whether there were any significant differences between hotel guests of different hotel categories. The results obtained for this period point to a significant increase in the frequency of review posting by the guests of Belgrade hotels on the TripAdvisor portal. This increase can only partly be attributed to the increased number of active Internet users. Other reasons are related to the increasing popularity of such portals and changes in consumer behavior. Based on the conducted Kruskal-Wallis test as well as a series of Mann-Whitney tests, it can be concluded that there are statistically significant differences between guests of different-category hotels for the observed feature. Thus, the guests of lower category hotels show significantly lower tendency to publish hotel reviews than the guests of middle or high category hotels.

Keywords: Electronic Word-of-Mouth (eWOM); online hotel reviews; TripAdvisor

Introduction

EWOM (electronic word of mouth) portals are highly interactive web portals that allow their users to exchange their experiences regarding the consumption of different products and/or services (Hennig-Thurau and Walsh 2003; Goldsmith and Horowitz 2006; Litvin et al. 2008; Bronner and De Hoog 2010; Purnawirawan et al. 2012). This exchange of experience can be achieved through different types of Internet portals. Therefore, Yan et al. (2016) distinguish between the exchange of experience that is carried out through various social media platforms and those that take place on commercial sites that allow their customers to evaluate the purchased products/services. Blal and Sturman (2014) single out specialized consumer review sites as the ones having the greatest influence on the hospitality market. One of the best-known consumer review sites in the field of tourism and hospitality is certainly the TripAdvisor.com portal (Baka 2016; Zhang and Vasquez 2014; Casaloa et al. 2015; Xiang and Gretzel 2010). According to data obtained from the TripAdvisor site (https://tripadvisor.mediaroom.com/us-about-us), it contains
as many as 600 million reviews that assess the quality of services provided by
as many as 7.5 million different types of lodging facilities, restaurants, airline
companies, etc.

Portals such as TripAdvisor offer consumers insight into the experience
of previous users of hotel services, which in turn significantly affect their
perception and expectations in terms of the hotel product (Sparks and Browning
2011). As the services provided by hotels are largely intangible (Litvin et al.
2008) and consumers cannot perceive their quality before consuming them, the
impact of eWOM on consumer behavior is stronger in the case of hotel
products. Vermeulen and Seegers (2009) state that this impact is not so
dramatic in the case of hotels operating within the largest hotel corporations or
the best-known hotel brands in the world. This is expected because consumers
are aware that corporate hotel chains have a range of service standards and all
hotels operating as part of the particular hotel brand are obliged to comply with
the standards. Therefore, in the case of branded hotels, they rely less on the
opinions and experiences of other consumers.

Bui et al. (2014) state that 57% of the total value of hotel sales is
generated through various Internet distribution channels. Similar results are
presented by the TravelClick portal. According to data provided by this portal
for the North American market in 2013, about 61% of all hotel service bookings
were made via online channels. If a hotel service is to be booked via different
online distribution channels, we must expect that consumers will try to be
informed about the product using the online environment. Thus, Toh et al.
(2011) state that about 80% of consumers use the Internet to collect information
about certain hotel products and in turn most of them book hotel services
through various online sales channels.

A number of portals that allow electronic word-of-mouth
communication (eWOM) between the users of hotel services ask users to
provide proof that they have actually consumed the services of a particular hotel
before they are given the opportunity to publish their reviews. In this sense,
Booking.com, for instance, requests that before leaving a review, a consumer
makes a booking for a hotel service through this portal and provides a
confirmation of the stay. On the other hand, there are portals that do not requi-
re any proof that the user has really consumed the hotel service as a precondition
for publishing hotel reviews. The TripAdvisor portal is one of them.

Given the significance of these portals in the modern market and their
impact on the hotel business performance (e.g. Ye et al. 2009; Vermeulen and
Seegers 2009; Ogut and Tas 2012; Kim et al. 2015), hotel managers can be
tempted to post positive reviews for their own hotels and/or negative reviews
for the rival hotels. Such inauthentic reviews are known as fake reviews (Jindal
and Liu 2008). According to Ayeh et al. (2013), who studied the extent of this
practice, TripAdvisor contains some 27,000 reviews that can be regarded as
defamatory. Malbon (2013) and Lappas (2016) state that the TripAdvisor portal has been fined by several regulators for misleading consumers by using slogans that suggested full authenticity of reviews, without having established an effective system of review verification. On the other hand, on the TripAdvisor portal (https://www.tripadvisor.com/vpages/review_mod_fraud_detect.html) you can find the information that they have an advanced fraud detection system. They further claim to have a team of moderators who examine questionable reviews.

The aim of this paper was to study the way Belgrade hotels are presented on the TripAdvisor portal and the willingness of Belgrade hotel guests to post hotel reviews over the study period of 10 years. The results of the survey should answer the question of whether there was an increase in the tendency of consumers to post online hotel reviews during the study period and whether there were any significant changes in this tendency during the study period. This study is partly related to previously conducted studies (Mašić 2016; Mašić 2015a) and upgrades them through a quantitative analysis of the frequency of online review posting during the observed period and determining the statistical significance of the differences in this frequency between the guests of different hotel categories. Mašić (2015a) tried to quantify the tendency of guests to post comments by relating the number of reviews posted for the studied hotels with the total number of tourists in Belgrade. This approach provided certain indications of the frequency of review posting, but it had its limitations since it didn’t take into account that there were tourists who didn’t stay in Belgrade hotels. Some of them used the services of other types of lodging facilities. This paper overcomes the aforementioned limitation because it uses only the statistical data on the number of guests staying in Belgrade hotels of different categories.

Research methodology

The research required for the purposes of this study was carried out in October 2015. The preliminary step was to list the categorized hotels in Belgrade for each year of the study period between 2005 and 2014. The lists were downloaded from the web portal of the Ministry of Trade, Tourism, and Telecommunications of the Republic of Serbia. The next step was to find reviews for each of the hotels on the TripAdvisor portal and to classify them according to the time of posting for the period between 2005 and 2014. Data on the total number of hotel guests who visited Belgrade during each of the study years was taken from the official Statistical Yearbook of Belgrade.

The obtained data were used to determine the frequency of review posting as the ratio that shows the number of posted reviews for every 1,000 guests who stayed at Belgrade hotels.
Frequency of review posting = \( \frac{\text{Number of registered reviews in the study period}}{\text{Number of hotel guests in the study period}} \times 1000 \)

The frequency of posting reviews within various hotel categories was calculated in the same way, but only for the period between 2010 and 2014. The study period was shortened because the official statistical publications do not provide data on the number of registered hotel guests by different hotel categories before 2010.

The result of Shapiro-Wilk-test (p < 0.05) which was conducted on a series of obtained parameter values leads to the conclusion that we can reject the zero hypothesis that the observed variables of the analyzed sample have a normal distribution and consequently use non-parametric tests to detect significant differences between the values of the parameter set to measure the frequency of review posting by the guests of different category hotels. Kruskal-Wallis H Test was used to test the statistical significance of these differences, and the Mann-Whitney U test series was used to determine the origin of the differences.

**Results and discussion**

The results of the conducted research show that there were 6,164 reviews of Belgrade hotels posted on the TripAdvisor portal in the study period.

<table>
<thead>
<tr>
<th>Year</th>
<th>The number of reviewed hotels</th>
<th>The number of reviews</th>
<th>The average number of reviews per hotel</th>
<th>The average rating of Belgrade hotels</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>10</td>
<td>21</td>
<td>2.10</td>
<td>3.29</td>
</tr>
<tr>
<td>2006</td>
<td>15</td>
<td>42</td>
<td>2.80</td>
<td>3.24</td>
</tr>
<tr>
<td>2007</td>
<td>16</td>
<td>73</td>
<td>4.56</td>
<td>3.34</td>
</tr>
<tr>
<td>2008</td>
<td>25</td>
<td>105</td>
<td>4.20</td>
<td>3.27</td>
</tr>
<tr>
<td>2009</td>
<td>29</td>
<td>155</td>
<td>5.34</td>
<td>3.76</td>
</tr>
<tr>
<td>2010</td>
<td>38</td>
<td>372</td>
<td>9.79</td>
<td>3.98</td>
</tr>
<tr>
<td>2011</td>
<td>44</td>
<td>638</td>
<td>14.50</td>
<td>3.95</td>
</tr>
<tr>
<td>2012</td>
<td>50</td>
<td>1,012</td>
<td>20.24</td>
<td>4.06</td>
</tr>
<tr>
<td>2013</td>
<td>56</td>
<td>1,434</td>
<td>25.61</td>
<td>4.10</td>
</tr>
<tr>
<td>2014</td>
<td>72</td>
<td>2,312</td>
<td>32.11</td>
<td>4.26</td>
</tr>
</tbody>
</table>

Source: Authors` research and Mašić (2016)
It is apparent that the average rating of Belgrade hotels on the TripAdvisor portal significantly increased during the study period. From the starting value of 3.29 (on a five-degree scale), it increased to 4.26 (Mašić 2016). The question is whether the quality of Belgrade hotel services during the study period improved to such extent or the increasing popularity of this portal changed the profile of the average TripAdvisor user changing thus the criteria for evaluating hotel services or there are some other reasons which caused this increase in the average rating score.

Reviews on the TripAdvisor portal and other hotel rating portals can be an important source of information for the hotel management. Besides the internal system of the service quality evaluation which may or may not exist, these reviews point to the segments of hotel products the quality of which needs to be improved. According to Cunningham et al. the resulting sensitivity of the hotel management is known as the `TripAdvisor effect` Mašić (2016).

Hoteliers have become increasingly aware of the effects that the TripAdvisor portal has on the consumer behavior and consequently on the sale value of hotel services and on the hotel business performance. Therefore, this awareness can generate a greater number of flattering fake reviews which would increase the average hotel rating on this portal.

Based on the data presented in Table 1, it can be concluded that the study period recorded a constant increase in the number of Belgrade hotels rated on the TripAdvisor as well as the total number of reviews of the quality of services provided by these hotels and the average number of reviews by the presented hotel. A fairly uneven distribution of hotel reviews during the study period can be easily observed. The number of reviews in 2014 was even more than 110 times higher compared to 2005 and more than 6 times compared to the number of reviews posted in 2010. This data would be enough to conclude that the frequency of hotel review posting on the TripAdvisor portal significantly increased during the study period. However, the analysis should include the number of guests who stayed at Belgrade hotels during the study period. It can be expected that an increasing number of hotel guests in Belgrade entails an increase in the number of hotel reviews posted on the TripAdvisor portal. Therefore, it is important to exclude the influence of the number of hotel guests on the number of posted hotel reviews, which is achieved by making a ratio of the number of posted reviews to the number of the registered hotel guests (Table 2).

Table 2. Frequency of posting reviews of Belgrade hotels on the TripAdvisor portal

<table>
<thead>
<tr>
<th>Year</th>
<th>The number of reviews</th>
<th>The number of hotel guests</th>
<th>Frequency of review posting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Based on the data presented in Table 2, it can be concluded that the frequency of posting reviews of Belgrade hotels increased by about 76 times in the study period. Considering the method that was used to construct the studied parameter, it can be concluded that the significant increase in the number of posted reviews did not result from the increase in the number of hotel guests but from the change in their behavior after consuming hotel services. This result is in line with the results of previously conducted studies based on a sample of Belgrade hotels (Mašić 2016; Mašić 2015a; Mašić 2015b).

Considering that the hotel review publishing on the TripAdvisor portal implies the use of the Internet, one can hypothesize that the increase in the percentage of individuals using the Internet resulted in an increase in the number of users of the TripAdvisor portal and consequently in an increase in the number of reviews of Belgrade hotels. Therefore, the values of the established parameter of the frequency of hotel review posting were related to the percentage of individuals using the Internet in the world (Table 3).

Table 3. The relationship between the review posting frequency and the Internet penetration rate

<table>
<thead>
<tr>
<th>Year</th>
<th>Parameter of review posting frequency</th>
<th>Percentage of Individuals using the Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>0.05</td>
<td>15.79</td>
</tr>
<tr>
<td>2006</td>
<td>0.09</td>
<td>17.58</td>
</tr>
<tr>
<td>2007</td>
<td>0.15</td>
<td>20.52</td>
</tr>
<tr>
<td>2008</td>
<td>0.24</td>
<td>23.07</td>
</tr>
<tr>
<td>2009</td>
<td>0.38</td>
<td>25.49</td>
</tr>
<tr>
<td>2010</td>
<td>0.84</td>
<td>28.85</td>
</tr>
<tr>
<td>2011</td>
<td>1.34</td>
<td>31.28</td>
</tr>
<tr>
<td>2012</td>
<td>2.02</td>
<td>34.34</td>
</tr>
<tr>
<td>2013</td>
<td>2.64</td>
<td>36.89</td>
</tr>
</tbody>
</table>
The value of Spearman's rank-order correlation coefficient between the parameter of the review posting frequency and the percentage of the population using the Internet was determined. The obtained result $r_s = 1$, $p<0.05$ indicates a perfect linear relationship between the percentage of world population using the Internet and the established parameter of the review posting frequency. It is clear that the growing number of Internet users has affected the number of posted hotel reviews. However, if we compare the growth rates of the established coefficient on the one hand and the percentage of individuals using the Internet on the other hand, we can notice a significant disproportion. The percentage of individuals using the Internet increased by 2.5 times in the study period, while the tendency to post hotel reviews increased by as much as 76 times. Thus, the growing number of reviews was brought about not only by the increase in the number of active Internet users but also by the increasing popularity of the TripAdvisor portal itself, which resulted in the change of consumer behavior in the post-consumption phase. Radojević et al. (2017) state that hotel reviews are influenced by a range of different factors from the quality of the hotel product, through personal preferences of consumers, to the purpose of travel and the attributes of a destination.

Taking into account the differences in the quality of hotel products between hotels of different categories and the differences in the preferences of their guests, we further determined whether there were significant differences between them regarding their tendency to post hotel reviews. To achieve this, we grouped all Belgrade hotels by their category and determined the total number of reviews within different categories for the period between 2010 and 2014, and correlated it with the number of hotel guests within each category in order to determine the values of the review posting frequency parameter in the previously explained fashion. The results are presented in Table 4.

Table 4. Values of the parameter of the hotel review posting frequency - by categories

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>5*</td>
<td>0.46</td>
<td>0.65</td>
<td>2.09</td>
<td>4.11</td>
<td>6.44</td>
</tr>
<tr>
<td>4*</td>
<td>1.76</td>
<td>2.52</td>
<td>3.04</td>
<td>3.00</td>
<td>4.47</td>
</tr>
<tr>
<td>3*</td>
<td>0.56</td>
<td>1.13</td>
<td>1.33</td>
<td>2.17</td>
<td>3.09</td>
</tr>
<tr>
<td>2*</td>
<td>0.19</td>
<td>0.30</td>
<td>0.26</td>
<td>0.46</td>
<td>0.75</td>
</tr>
<tr>
<td>1*</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Source: Authors’ research

The value of the examined parameter could not be determined for the group of the lowest-class hotel service consumers because the available
statistical reports did not contain data on the number of hotel guests for that category.

Before any further analysis is conducted, it is necessary to determine whether there are statistically significant differences in the presented parameter of the frequency of hotel review posting between the guests of hotels belonging to different categories. In order to achieve this, a Kruskal-Wallis test was conducted. Its results at \( p < 0.05 \) indicate that there are statistically significant differences between the observed features. However, based on the results of the Kruskal-Wallis test, we cannot determine the origin of the differences. In other words, the results of the Kruskal-Wallis test point to the statistically significant differences in the frequency of publishing reviews on the TripAdvisor portal between guests of different-category hotels, but we cannot determine the nature of these differences. Therefore a series of Mann-Whitney tests was used for between-group comparisons in order to determine the consumer groups that show the differences. The results of Mann-Whitney tests are presented in Table 5.

Table 5. Results of Mann-Whitney tests

<table>
<thead>
<tr>
<th>Category</th>
<th>4*</th>
<th>3*</th>
<th>2*</th>
</tr>
</thead>
<tbody>
<tr>
<td>5*</td>
<td>U=10, ( p=0.602 )</td>
<td>U=10, ( p=0.754 )</td>
<td>U=3, ( p&lt;0.05 )</td>
</tr>
<tr>
<td>4*</td>
<td>---</td>
<td>U=5, ( p=0.117 )</td>
<td>U=0, ( p&lt;0.05 )</td>
</tr>
<tr>
<td>3*</td>
<td>---</td>
<td>---</td>
<td>U=1, ( p&lt;0.05 )</td>
</tr>
<tr>
<td>2*</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

Source: Authors` research

According to the presented results, there are 5-star, 4-star and 3-star hotels on the one hand whose guests do not show statistically significant differences regarding their inclinations to post hotel reviews. On the other hand, there are statistically significant differences between the guests of each of these three categories of hotels and the 2-star hotel guests. Looking at the data in Table 4, it can be easily observed that the 2-star hotel guests have a considerably lower inclination to post reviews on the TripAdvisor portal than the guests of all the other studied categories. Since literature sources often determine the potential to enhance their own self-worth (Hennig-Thurau et al. 2004; Yoo and Gretzel 2008; Angelis et al. 2011) and status seeking (Lampel and Bhalla 2007) as the motives for publishing an online product/service review, it is clear why this group of hotel guests has the smallest number of reviews.
Conclusions

The results of the research carried out for the purposes of this paper show that in the period between 2005 and 2014 the frequency of posting reviews about the quality of services in Belgrade hotels on the TripAdvisor portal significantly increased, which is in line with the results of previously conducted research (Mašić 2016; Mašić 2015a; Mašić 2015b). Although the increased frequency of review posting by the guests of Belgrade hotels coincided with the rapid increase in the number of Internet users in the world, it could not be attributed only to that factor, as the registered increase in the frequency of review posting significantly exceeded the increase in the number of Internet users in the world. Obviously, the hotel guests’ behaviour in the post-consumption phase also changed and a growing number of them acquired the habit of posting reviews on different portals.

The results of this study indicate that there are statistically significant differences between the guests of Belgrade hotels belonging to different categories in their tendency to post hotel reviews. This result is generally consistent with the results of previously conducted research (Mašić 2016) which covered only the year of 2014. According to the results of this research, the guests of higher category hotels are more inclined to post hotel reviews. In the case of this study, the results of the conducted Kruskal-Wallis test and a series of Mann-Whitney tests using 5-year data series confirm the statistical significance of the differences by identifying two groups of hotels – 5-star, 4-star and 3-star hotels on the one hand and the the lower category hotels on the other hand. Within the first group of hotels, it is not possible to prove statistically significant differences between 5-star, 4-star and 3-star hotels, while it exists between the two groups of hotels, i.e. the tendency to post reviews is lower in the group of lower category hotels (2-star hotels) compared to the same parameter in the group of higher category hotels.

In the same period, the value of the average rating of Belgrade hotels on this portal was growing. This tendency is consistent with the results of the research conducted by Feng et al. (2012), which used a sample of 4,000 hotels from 21 world metropolitan. They found that each year had a more significant increase in the number of positive reviews compared to the number of negative ones, which in turn caused an increase in the average hotel rating on TripAdvisor. This increase in the average rating is certainly not only due to the improved quality of hotel services, but also due to the changes in the profile of an average TripAdvisor user (Mašić 2016) and possibly under the influence of affirmative fake reviews.

References


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