THE RELIABILITY OF DATA FROM GUEST REVIEWS ON TRIPADVISOR AS A CONTEMPORARY SOCIAL MEDIA PLATFORM

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KEYWORDS: Guest reviews, Social media Platform, Reliability of reviews
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Abstract
The rise of social media created different platforms that allow hotel guests to write reviews about their hotel experience and quality. This study investigates the reliability of guest feedback on TripAdvisor that has over 11 million members and over 30 million reviews. The reliability of data from guest reviews on TripAdvisor was explored through a sample that included 11 destinations and 330 hotel guest reviews. Four theoretical arguments that challenge the reliability of TripAdvisor have been used to structure and triangulate the findings. Major findings indicated that although it is possible to post false reviews on TripAdvisor it does not happen on a scale that allows manipulation of hotel rankings. Although reviewers do not always agree, the context in the majority of the reviews allows for readers to identify the quality of a hotel. It was concluded that TripAdvisor provides a reliable and rich source of information for hotel guests and other online users.

1. INTRODUCTION
Hotel rating is a concept that has received very little academic attention over time, whereas its practical systems have frequently been subject to differences of opinion as to what it is the guests want or need and how this can objectively be measured (Lopez and Serano, 2004; World Tourism Organisation, 2004). From the early stages of rating, then commonly referred to as classification, it has been non-guests that determine the quality of a property.

With the rise of social media, different platforms have been created that allow hotel guests to write reviews about their hotel experience and quantify their satisfaction at the same time. Through such a platform, it is guest feedback that dictates the rating of a hotel. As service quality theory dictates that quality is the outcome of the guest perception of a delivered service, this could be argued to be the most accurate way to provide potential guests with a realistic expectation. The question can however be posed whether a platform such as TripAdvisor provides reliable data to allow guests to form accurate expectations of the hotel?

This study will focus on TripAdvisor, which is the world’s largest platform for consumer travel feedback (TripAdvisor, 2009). This paper will firstly present TripAdvisor as a platform
for guest feedback. A description of the organisation TripAdvisor, the traveller services it offers, and the process, by which ratings, reviews, and rankings on TripAdvisor are established, will first be provided. Then the findings regarding the reliability of TripAdvisor will be presented by showing the TripAdvisor screening algorithm. Thereafter the number of ratings and reviews, the standard deviation of the ratings, the consistency of the reviews, the context of the reviews, the credibility of writing styles in reviews, and the types of hotels found in the sample will be discussed. These discussions explain the reliability of TripAdvisor as a platform to provide accurate data to potential guests.

2. PROBLEM INVESTIGATED

Although rating of hotels is a rather young concept, its practice has grown rapidly. From the initial purpose of informing guests on basic facilities that can be expected, the objective of hotel rating has developed into one that focuses on a tourism destination as a whole. Tourism lodging has a major impact on the tourist experience resulting in government involvement in hotel rating in more than half of all countries worldwide. Initially the focus of rating systems was limited to minimum criteria that were objective in assessment: room size, facilities, and availability of services. Later hotel rating systems show an increase in focus on the more subjective areas of the guest experience, such as cleanliness, state of maintenance, and staff competencies. Contemporary systems have moved even a step further and focus on service quality as it would be experienced by the guest.

This focus on service quality as it would be experienced by the guest seems to overcome the limitations of earlier hotel rating systems that only measured a minor part of the guest experience. As one of the main objectives of hotel rating systems is to provide an accurate view of what the prospective guest can expect, this is a positive development. Many contemporary systems seek to measure the service quality criteria by means of ‘mystery shopping’ where a hotel inspector visits the hotel, where he pretends to be a guest and rates the guest experience. At the same time, some systems have started to use real guest feedback for their rating decisions.

Applying service quality theory to the concept of hotel rating, one can argue that the most accurate representation of the guest experience can only be supplied by real guests having real experiences. With the rise of social media, different platforms have been created that allow hotel guests to write reviews about their hotel experience and quantify their satisfaction at the same time. Through such a platform, it is guest feedback that dictates the rating of a
hotel. As service quality theory dictates that quality is the outcome of the guest perception of a delivered service, this could be argued to be the most accurate way to provide potential guests with a realistic expectation.

The four areas of criticism on why TripAdvisor may not provide reliable data are:

a) TripAdvisor allows anonymous reviews allowing hotels and restaurants to manipulate the ratings system (see for instance ABC News, 2009; Economist.com, 2009; Elliott, 2009; Frommer, 2009; O’Neill, 2009).

b) TripAdvisor declined to publish a review (Jeff, 2008a) and sensors feedback from hoteliers (McReady, 2010);

c) TripAdvisor suffers from a conflict of interest as it is owned by Expedia and is dependent on referral and advertising income (Jeff, 2008b, Jeff, 2009); and

d) Consumers are not objective in their assessment of quality (Hewitt, 2008; Weyel, 2008).

This research therefore seeks to investigate whether these criticism are true by presenting findings of the quality of data that may be expected from guest reviews on contemporary social media platforms such as TripAdvisor.

3. **RESEARCH OBJECTIVES**

This main objective of this study is to investigate the information (guest reviews) found on TripAdvisor to establish whether it is reliable or not.

Secondary objectives to this study are to describe the services TripAdvisor provides to guests, and how it allows guests to post reviews with ratings on the website for other guests to read. Another secondary objective is to explain the process by which ratings, reviews and rankings on TripAdvisor are established and how the TripAdvisor screening algorithm works.

In order to determine the reliability of TripAdvisor, the following research questions provide the information to answer the research problem:

- How does TripAdvisor allow guests to review hotels?
- How reliable are the guest reviews and ratings on TripAdvisor in providing an accurate picture of guest experiences in a hotel?
4. LITERATURE REVIEW

TripAdvisor had over 11 million members and more than 30 million reviews in December 2009. TripAdvisor Media Network is part of the Expedia Group, a public company traded at the NASDAQ stock exchange. TripAdvisor was founded in February 2000 by Steve Kaufer and operates sites in the U.S., the U.K., France, Ireland, Germany, Italy, Spain, India, Japan, Portugal, Brazil, Sweden, The Netherlands and China. Despite the relatively large amounts of site visitors and reviews posted on the website, the organisation is relatively small with an estimated number of staff of just over 300 in December 2009. (Larpent, 2009b)

4.1 The Organisation TripAdvisor

Although guests may access the website hosted in their own language, guest reviews appear to be collected to and distributed from a central database as they can be found in different languages and are the same on the different sites. This was verified with a cross check between www.TripAdvisor.com and http://nl.TripAdvisor.com in September 2009. The credo up to November 2009 was ‘Get the truth, then go’, after which it was changed to ‘World’s most trusted travel advice’ (TripAdvisor, 2009). A possible reason for this change could be the criticism on the reliability of ratings and the objectivity of TripAdvisor (Elliott 2009; Frommer, 2009; Jeff, 2008a; O’Neill 2009).

TripAdvisor generates income through advertising and referrals. TripAdvisor’s main source of income is referrals to online travel agents that pay per click (PPC) for referrals. When a visitor of the website clicks to get actual rates, or to get more information on the facilities of the properties (hotel, guest house, etc.), user is referred to one of the online travel agents that TripAdvisor has agreements with, such as: Expedia.com, Bookings.com, Hotels.com, Splendia.com, EasyToBook.com, and Fastbooking.com, Marriott.com and Intercontinental.com (TripAdvisor, 2009). A second source of income is through banners that are posted on the TripAdvisor website. These banners may refer to hotel brands, destinations, or other travel related content. A third source of income that was launched in November 2009 is ‘business listings’ where hotels can have a direct link from their mentioning on TripAdvisor to the website of the hotel (TripAdvisor, 2009). This is expected to create additional revenues from hotels that are currently not distributing their rooms through Online Travel Agents or Global Distribution Systems.
4.2 Traveller services offered on TripAdvisor

TripAdvisor claims it seeks to provide: “recommendations for hotels, resorts, inns, vacations, travel packages, vacation packages, travel guides and lots more” (TripAdvisor, 2009). The website provides information on flights, hotels, and restaurants and additionally provides travel tips and free travel guides. Further, the website allows visitors to create a unique profile where information can be stored and exchanged with other guests. Once a profile has been created, guests can write reviews, rate hotels and restaurants, create a travel map of destinations visited, built ‘trips’ that store information on destinations, hotels and restaurants, and communicate with other guests.

TripAdvisor displays a range of hotels that appears to be more comprehensive than statistics made available by tourism boards or organizations that seek to provide travel statistics on a commercial basis. The number of hotels in Amsterdam, for instance, according to the City of Amsterdam (2008) was 357 whereas on the first of November 2009 TripAdvisor presents 360 hotels, 151 B&B’s / Inns, 67 Special Lodging properties, and 203 vacation rentals. This availability is most likely due to the fact that TripAdvisor allows guests to suggest hotels to be added to its database.

When searching for a hotel, TripAdvisor offers a comprehensive filter that allows guests to narrow their search down to:

a) A geographical area using Google maps or a specific neighbourhood;

b) A price range;

c) Hotel Class, derived from a conventional rating system (one to five stars);

d) Amenities that are available (for instance, ‘free high speed internet’);

e) Hotel Brand; and

f) Recommendations to different target groups (TripAdvisor, 2009).

4.3 The process of registration, reviews and ratings, and rankings

Guests need to be registered with TripAdvisor to be allowed to write reviews and give ratings to a hotel when the hotel is registered in the TripAdvisor database. A traveller needs to provide a username, email address, and the town residing in to create a profile (location),
though other information, such as name, age, and gender is optional. The registration process is verified by email.

When a hotel is not yet listed on TripAdvisor, the traveller may recommend the hotel for inclusion using a form on the website. After a verification process, TripAdvisor invites the traveller with an email message to recommend a hotel for inclusion.

When rating a hotel, the traveller is first asked to rate his or her overall experience in the hotel on a five point scale by which the score represents from five to one: ‘Excellent’, ‘Good’, ‘Average’, ‘Poor’, or ‘Terrible’.

Then, the reviewer is asked to provide a similar assessment for a number of specific criteria. These criteria however appear to be altered regularly. In March 2010 the criteria used as fixed categories to fill out by guests are: ‘Value’, ‘Rooms’, ‘Location’, ‘Cleanliness’, ‘Service’, and ‘Sleep Quality’. ‘Sleep quality’ appears as a new criteria in reviews from February 2010. Fixed criteria used earlier include ‘Check in / Front Desk’, and ‘Business service (e.g., internet access)’.

The final quantitative assessment that is required from the traveller is a yes / no answer to the question: ‘Would you recommend this hotel to a friend?’

In terms of qualitative input, the traveller is asked to provide a title that summarizes the review, as well as a full review of at least 50 characters about the hotel stay.

In addition to an assessment of the hotel, the traveller is asked about the demographics of the trip: the purpose of the trip: business or leisure, and who the reviewer travelled with: colleagues, friends, family, or solo. Also the traveller is asked about the purpose of his or her trip, being offered 17 options in early 2010.

4.4 The TripAdvisor Algorithm for screening reviews and determining a popularity index

The process of posting a review is moderated, in order to guarantee high reliability. For example, when a review is frequently posted within 12 hours, it may be ‘flagged’ after which a moderator from TripAdvisor will need to go through the review manually which may take up to two weeks. A message may be flagged due to insulting language or criteria that may indicate fraud. TripAdvisor uses an electronic algorithm for this screening. This algorithm is
not disclosed, but appears to screen the text of the review as well as the IP address of the computer from which the review was posted.

When a message is approved by TripAdvisor, it will appear on the website with the username and location of the traveller that has posted the review as well as the date the review was made. The review additionally provides a direct link to the profile of the traveller that posted the review.

TripAdvisor’s ranking of hotels is categorized by destination and is referred to as TripAdvisor’s ‘popularity index’. The TripAdvisor website explains the popularity index as follows:

“The TripAdvisor Popularity Index incorporates Traveller Ratings, guidebook entries, newspaper articles and other web content to determine traveller satisfaction. Emphasis is placed on the most recent information. We calculate the Popularity Index using an algorithm that takes into account not only individual Traveller Ratings, but also opinions from other content sources on the web (such as guidebooks).”

Larpent (2009b) provided more insight in this algorithm, though the exact weighting is only known by senior staff and programming staff within TripAdvisor. Larpent (2009a) confirms the following weighting factors:

a) Freshness: newer reviews are weighted stronger than older ones;

b) Amount of reviews: a property with more reviews, but the same average score will be ranked higher in the popularity index.

TripAdvisor initially used to adjust ratings given with reviews. If a hotel received a first review, it was moderated upwards when it was very low, or downwards when it was very high to avoid the hotel suffering, or benefiting in extreme measures from an initial review. However, early December 2009, this practice seems to have changed as hotels with only a number of ratings do not appear to receive a visible overall rating unless a sufficient amount of ratings confirm the initial ones. This was found to be the case with, for instance, the Stellenbosch Lodge Country Hotel in Cape Town, South Africa that received two ratings early December 2009, but displayed no rating on the website.

One of the main arguments that TripAdvisor has presented in response to several accusations against its reliability is its screening algorithm (Elliott, 2009). The understanding into the
effectiveness of this algorithm has been explored by personal use of TripAdvisor and a presentation by and interview with Maud Larpent, Business Development Executive of TripAdvisor, on 1 and 2 December 2009.

The process of registration, reviews, ratings, and rankings is summarised in Figure 1.

**Figure 1** Process of registrations, reviews, and rankings on TripAdvisor

![Diagram of the process of registrations, reviews, and rankings on TripAdvisor](image)

**Source:** Own model based on TripAdvisor (2009) and the personal use of TripAdvisor.

## 5. RESEARCH METHODOLOGY

For the research on the data from TripAdvisor, the overall sample of 11 destinations was specified for the research. The following criteria were adhered to in selecting the destinations:

a) The destination receives more than one million guests annually;

b) The destination is represented on TripAdvisor to the extent that further sampling of hotels and reviews is feasible; and

c) The destinations together cover all continents.
The sample of the 11 destinations focused on the highest ranking, middle ranking, and lowest ranking hotel according to the TripAdvisor rankings. From each of these hotels, the ten most recent reviews in English were downloaded, printed, coded, and content analysis procedures used to analyse the data.

The highest ranking, middle ranking, and lowest ranking hotel were used to gather reviews from TripAdvisor. From each of the 33 identified hotels (three hotels in 11 destinations), the 10 most recent reviews in the English language from the website were selected by using the ‘my Trip’ function on the website, after which the 10 reviews could be printed in a PDF file. This resulted in 33 files each with 10 reviews, providing a total of 330 reviews in total.

The following process was used to code the data and get it ready for analysis:

a) Each printed review was analysed and colour coded whereby four categories were identified and given a colour:

- Yellow for comments that express a satisfaction or dissatisfaction without pinpointing a criterion that caused that emotional state.
- Green for comments that express a satisfaction with a criterion.
- Pink for comments that express dissatisfaction with a criterion.
- Blue for comments that could not be categorized in the former three but were important for further analysis. These comments included, agreement or disagreement with other reviews, and information on the trip or specific traveller circumstances that provide additional context to the review.

b) Per review, the following additional data was captured:

- The title of the review;
- The date of the review;
- The home country of the reviewer; and
- The rating given to the hotel (one to five points).

c) Per hotel, the number of reviews was recorded.

d) Per hotel, the average rating and standard deviation of ratings was calculated.
6. RESULTS

To investigate the reliability of the data (reviews) on TripAdvisor, Elliot (2009) argues it important to look at the amount of reviews and ratings posted per hotel. The rationale behind capturing the amount of reviews is that when the amount of reviews is relatively high and the amount of false reviews relatively low, that the distortion by these reviews should be minimal. Table 1 presents the amount of reviews of TripAdvisor’s top 10 ranking and the average for these review by destination.

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Amsterdam</th>
<th>Bangkok</th>
<th>Cape Town</th>
<th>Dubai</th>
<th>Hong Kong</th>
<th>London</th>
<th>New York</th>
<th>Paris</th>
<th>Rio de Janeiro</th>
<th>Rome</th>
<th>Sydney</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>102</td>
<td>592</td>
<td>73</td>
<td>207</td>
<td>839</td>
<td>165</td>
<td>94</td>
<td>117</td>
<td>146</td>
<td>103</td>
<td>104</td>
</tr>
<tr>
<td>2</td>
<td>304</td>
<td>94</td>
<td>380</td>
<td>661</td>
<td>320</td>
<td>211</td>
<td>927</td>
<td>32</td>
<td>111</td>
<td>163</td>
<td>196</td>
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<tr>
<td>3</td>
<td>121</td>
<td>303</td>
<td>41</td>
<td>753</td>
<td>189</td>
<td>307</td>
<td>555</td>
<td>292</td>
<td>82</td>
<td>536</td>
<td>172</td>
</tr>
<tr>
<td>4</td>
<td>167</td>
<td>31</td>
<td>273</td>
<td>291</td>
<td>230</td>
<td>417</td>
<td>667</td>
<td>186</td>
<td>34</td>
<td>90</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>91</td>
<td>351</td>
<td>43</td>
<td>111</td>
<td>133</td>
<td>63</td>
<td>1540</td>
<td>373</td>
<td>105</td>
<td>361</td>
<td>120</td>
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<tr>
<td>6</td>
<td>299</td>
<td>172</td>
<td>74</td>
<td>461</td>
<td>144</td>
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<td>26</td>
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<td>114</td>
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<td>8</td>
<td>343</td>
<td>373</td>
<td>152</td>
<td>147</td>
<td>171</td>
<td>623</td>
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<td>347</td>
<td>59</td>
<td>7</td>
<td>205</td>
<td>218</td>
<td>157</td>
<td>1118</td>
<td>132</td>
<td>68</td>
<td>464</td>
<td>236</td>
</tr>
<tr>
<td>Average</td>
<td>234</td>
<td>275</td>
<td>123</td>
<td>313</td>
<td>264</td>
<td>377</td>
<td>588</td>
<td>252</td>
<td>79</td>
<td>219</td>
<td>159</td>
</tr>
</tbody>
</table>

Source: Author’s own model based on data collected from TripAdvisor between 11 October and 15 November 2009.

Table 1 displays large differences in the amount of reviews per hotel. These differences can be attributed to the destination and the extent to which guests to a destination use TripAdvisor. New York presents the highest number of reviews per hotel in the Top 10 hotels where the number five in its ranking, Sofitel New York, had received 1540 reviews on 25 October 2009. With such a number of reviews, one can argue that the ranking of such hotel would be nearly impossible to influence with false reviews, unless one would take extreme measures with large amounts of false reviewers that post reviews from different locations.
However, table 1 also displays a hotel with only 7 reviews. The number 10 of Cape Town, as per the ranking of data collected on 15 November 2009, called Kensington Place, would be easy to manipulate, using a fictitious scenario of 10 false reviewers, representing the close family and friends of an hotelier, placing extremely positive or negative reviews. The sample of reviews in this study displays similar deviations. Table 2 presents the amount of reviews and ratings posted for each hotel in this sample.

### Table 2  Number of reviews per hotel in the sample of this study

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Amsterdam</th>
<th>Bangkok</th>
<th>Cape Town</th>
<th>Dubai</th>
<th>Hong Kong</th>
<th>London</th>
<th>New York</th>
<th>Paris</th>
<th>Rio de Janeiro</th>
<th>Rome</th>
<th>Sydney</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest</td>
<td>105</td>
<td>613</td>
<td>78</td>
<td>207</td>
<td>839</td>
<td>165</td>
<td>95</td>
<td>117</td>
<td>146</td>
<td>103</td>
<td>104</td>
<td>234</td>
</tr>
<tr>
<td>Middle</td>
<td>52</td>
<td>28</td>
<td>50</td>
<td>57</td>
<td>169</td>
<td>25</td>
<td>132</td>
<td>91</td>
<td>96</td>
<td>226</td>
<td>47</td>
<td>88</td>
</tr>
<tr>
<td>Lowest</td>
<td>40</td>
<td>31</td>
<td>15</td>
<td>16</td>
<td>90</td>
<td>71</td>
<td>145</td>
<td>63</td>
<td>27</td>
<td>201</td>
<td>37</td>
<td>67</td>
</tr>
<tr>
<td>Average</td>
<td>66</td>
<td>224</td>
<td>48</td>
<td>93</td>
<td>366</td>
<td>87</td>
<td>124</td>
<td>90</td>
<td>90</td>
<td>177</td>
<td>63</td>
<td>130</td>
</tr>
</tbody>
</table>

Source: Author’s own model based on data collected from TripAdvisor between 31 October 2009 and 2 January 2010.

From table 2 it is clear that the average number of reviews in the sample is 130 reviews. Besides large deviations in the number of reviews posted for the different hotels in the different destinations, Table 2 displays a trend where the higher ranking hotels have more reviews than the middle and lower ranking hotels. This trend applies to 7 of the 11 destinations and is also visible in the average scores per ranking over the destinations. It is important to note that as these hotels in the sample were selected based on a minimum amount of 10 reviews and rankings in the English language not dating back further than 1 January 2008, extremes are not represented.

### 6.1 CONSISTENCY OF REVIEWS AND RATINGS

The 330 reviews from guests on 33 hotels in 11 destinations were analyzed for consistency by identifying the reviews required for saturation, the overlap in comments in reviews of the same hotel, the expressed agreement and disagreement between reviewers, and inconsistencies between the written review and rating of the reviewer.
Figure 2 presents the amount of statements per hotel category of the sample with regards to agreement, or disagreement with other reviews.

**Figure 2**  
**Number of comments on agreement or disagreement with other reviews**

![Bar chart showing the number of comments on agreement or disagreement with other reviews across different hotel ranking categories.](chart)

**Source:**  
Author’s own model based on TripAdvisor reviews from sample 2.

From figure 2 it follows that the reviewers of the highest ranking hotels openly agree most. No comments were found in the reviews of the highest ranking hotels that disagreed with other reviews. This consistency is much lower with middle ranking hotels where the amount of comments on disagreement with other reviews exceeds the amount of comments where reviewers agree with other reviewers. The lowest ranking hotels present an equal amount of nine statements agreeing and disagreeing with other reviews.

Another inconsistency the author analysed was the relation between the written review and the rating that the reviewer gave to the hotel. The author conducted this analysis by reading the review first and then quantifying this opinion in a rating from one to five. A review would then be defined as inconsistent with its rating if the actual rating would differ with more than one point of that of the researchers. There was only one review identified that did not appear consistent with the rating given by its reviewer.

The extent to which reviews are written clearly and are placed in context whereby the reader understands why something may be assessed as good or bad appears an important factor of the credibility and usability of such reviews. Gretzel (2007) touches on this concept when he describes how review writers focus on the length of the review and the detailed descriptions...
included in review when judging credibility. For the purpose of this study this was defined as ‘the context’ of the review. Without a context, a review may come across as immature and detracts from the perceived reliability of the review and the reviewer.

This context may focus on the background of the reviewer and the trip itself, the use of examples of criteria applied to come to a value judgement of the hotel, or may focus on the traveller in the hotel experience itself. A small number of hotel reviews were found to present no context whatsoever.

In terms of ratings, the standard deviation in reviews is the highest with the middle ranking hotels in the sample (1.04). The lowest ranking hotels have an average standard deviation of 0.82, and the highest ranking hotels present an average standard deviation of only 0.32.

The author further assumed that a deviation of a rating of more than 2 points from the calculated average is an indication that the particular rating is inconsistent with the other ratings given to a hotel in the sample (on a five point scale, two points represent a 40% deviation). Table 3 provides an overview of the hotels that presented ratings with such deviation for the highest, middle and lowest ranking hotels in the sample.

| Table 3: Ratings that deviate more than 2 points from the calculated average |
|---------------------------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Ranking                | Amsterdam | Bangkok | Cape Town | Dubai | Hong Kong | London | New York | Paris | Rio de Janeiro | Rome | Sydney | Total | Positive Deviation | Negative Deviation | Source: Author’s own model. |
|------------------------|-----------|---------|-----------|-------|-----------|--------|----------|-------|-----------------|------|-------|-------|-------------------|----------------------|                                                                 |
| Highest                | 0         | 0       | 0         | 0     | 0         | 0      | 0        | 0     | 0               | 0    | 0     | 0     | 0                 | 0                    |                                                                 |
| Middle                 | 0         | 1       | 3         | 0     | 0         | 1      | 1        | 1     | 1               | 3    | 0     | 11    | 1                 | 10                   |                                                                 |
| Lowest                 | 0         | 0       | 0         | 1     | 0         | 1      | 1        | 0     | 1               | 0    | 2     | 6     | 6                 | 0                    |                                                                 |

From table 3 follows that a total of 17 ratings in the sample deviate with more than two points from the calculated average. Also here, the middle ranking hotels stand out with 11 such ratings of which one rating deviates positively and ten deviate negatively from the calculated average. All six deviating ratings on the lowest ranking hotels deviate positively from the calculated average.

6.2 Results of investigating possible preferential treatment of hotels by TripAdvisor

The Top 10 ranked hotels by TripAdvisor was analysed to identify possible trends on preferential treatment by TripAdvisor as one may assume that hotels receiving preferential
treatment would want to claim a better position in the rankings. One of the main reasons for TripAdvisor or its parent company Expedia to give a hotel preferential treatment would probably be financial gain, as both companies are profit oriented. As such the criteria a hotel would have to fulfil to be attractive to give preferential treatment to would be that this hotel is:

a) Part of an international hotel brand that would have the economies of scale to ‘sponsor’ a ranking; or

b) A large hotel or hotel group that would generate substantial business through referrals to online travel agents.

From this one can argue that hotel groups, or large hotels would be most likely to receive preferential treatment and end up high in the rankings. Small or boutique hotels would, form this viewpoint, not be attractive to give preferential treatment to. For the purpose of this study, a small and boutique hotels is similar in size and has less than 150 rooms. As there is no uniform definition on what constitutes a boutique hotel, the size criteria combined with a reference by the hotel of the reviewers that it is a boutique hotel, was used to identify a boutique hotel. Also, boutique hotels’ unique design is more likely to classify them towards the luxury segment than to the budget segment of hotels. As such, boutique hotel is defined as a small hotel in this study, but a small hotel is not automatically a boutique hotel.

For instance, the number one ranking hotel in Rome in November 2009 is the Welrome Hotel which boasts seven rooms, but should further be defined as an ‘economy’ hotel as it carries only two stars and with a room rate of $85 per night is more than three times cheaper than other hotels in the top 10 ranking of Rome. Figure 3 displays the number of boutique and small hotels in the top ten ranking of the eleven destinations researched.
From figure 3 it becomes apparent that all European destinations sampled feature a large number of small and boutique hotels in the top 10 ranking. In Amsterdam, the top three hotels are all boutique hotels with respectively four, ten, and nine rooms only. Rome and Hong Kong feature no boutique hotels and only two small hotels can be found in Dubai and none in Hong Kong.

The findings from this study thus present almost the direct opposite as the top 10 ranking on TripAdvisor is in many destinations dominated by small and boutique hotels that do not represent any attraction to give preferential treatment as they would not have the financial means to ‘sponsor’ TripAdvisor and usually would not distribute their rooms via online travel agents as the commission is too high for them and they would not have the amount of rooms to be an attractive client for online travel agents.

During the research, several observations were made with regards to boutique hotels featured on TripAdvisor.

- **Boutique hotels appear to be unique in style and décor.** The Fusion Suites hotel in Amsterdam is a prime example of style and décor and almost each guest review of this property takes note of this.
- **Boutique hotels are** individual in the sense that they do not belong to international or national brands. In addition, they are usually not connected to many of the leading Online Travel Agents but take only direct bookings.

Source: *Own model based on data from TripAdvisor (2009).*
• **Boutique hotels offer highly personalised service.** Guest reviews of the hotels defined as boutique tend to appreciate the personal touch strongly.

It does, however, also present clear evidence that TripAdvisor is not biased in providing its rankings as there is no apparent gain in ranking these small and boutique hotels high.

7 **DISCUSSION OF FINDINGS ON THE RELIABILITY OF TRIPADVISOR**

To discuss the findings on the reliability of TripAdvisor data, it is compared with the arguments presented in the theoretic review that lead to a questioning of this reliability.

7.1 **Anonymous reviews allow hotels to manipulate the ratings system**

The first and main argument against the reliability of TripAdvisor is that it allows for the possibility to post false reviews. However, perhaps the main discussion should not evolve around the question whether or not it is possible to post a false review, but whether this has, or may have an impact on the reliability of the ratings on TripAdvisor. Perhaps the strongest countermeasure that TripAdvisor can present is the number of reviews per hotel.

The results indicated that the hotels that rank higher appear much less sensitive to fraudulent reviews as they have high amounts of reviews. It is difficult to stipulate an exact amount of reviews that would make a hotel immune to false reviews, but with a 100 reviews the effect becomes minimal.

The majority of both the lowest and the middle ranking hotels may be affected by false reviews as only two of the lowest ranking and three of the middle ranking hotels feature more than 100 reviews, representing respectively 18% and 27% of the hotels.

Two main scenarios were identified when it would be most likely that a hotelier or a relation of a hotelier would post a false review. Although other scenarios may be identified, their detection within the sample is unlikely which is why they were ignored. For instance, a hotel that has just opened may want to quickly rise to the higher rankings of TripAdvisor and invite many false reviews. Another scenario would be that a hotel wishes to strengthen its ranking and would therefore invite or create false reviews that carry the same message as the ones already posted on the hotel. Such reviews could not be detected within the scope of this research.
The first scenario that can be detected within the scope of this research is that the hotel ranks poorly on TripAdvisor due to bad reviews from reviewers and the hotel seeks to increase this ranking by posting, or have someone else post a false review that is more positive than the existing reviews. A second scenario is that a hotelier would like to bring down the ranking of a competing hotel by posting, or have someone post, a false review that is more negative than the existing reviews.

Three characteristics of reviews that create suspicion from the perspective of these two scenarios, taking into account the initial screening algorithm of TripAdvisor, were identified:

a) An inconsistent rating that deviates from the calculated average with more than two points and an accompanying review that conflicts strongly with other reviews.

b) A deviating writing style that makes the review read like a corporate marketing message, or that creates suspicion as the reviewer deems it necessary to stress that the review is an objective review; and

c) A lack of context on the trip, the reviewer, the reviewers travel experience, or criteria applied to come to a value judgement.

To further identify whether or not a review is false, the context provided in the review is important. A rating and its accompanying review may be inconsistent with other ratings and reviews, but when the context of the accompanying review is clearly outlined, this may explain why the rating is inconsistent. For example, a guest that suffers from a jet lag may rate the experience in the hotel much lower than the majority of guests visiting that hotel. As such, deviations in any of these three areas need to be looked at by means of triangulation. The three areas are combined by first exploring the deviations in ratings with the lack of context presented in a review and then the writing style combined with the deviations in ratings.

In terms of inconsistent rating, 17 reviews were identified in the sample. Seven of these hotels are middle ranking hotels and five are hotels with the lowest ranking on TripAdvisor. The quantification in positive and negative deviations from the average rating is not surprising. All deviations in the lowest ranking hotels are positive and all but one in the middle ranking hotels is negative. From a statistical viewpoint one may have expected some more variation in the deviation of hotels that are ranked in the middle, but if one takes the average rating of a hotel on TripAdvisor of 3.74 into account (Larpent, 2009a), the only
possible deviation of more than two points on a five point scale is a negative one for hotels that rank in the middle.

The Breakwater Lodge in Cape Town, South Africa presents three reviews of which the rating deviates with more than 2 points from the calculated average with a score of 1 point for each of them written by ‘Ellie06Hampshire’, ‘Bayliss1’, and ‘Samats’. However, each of these reviews provides context in terms of criteria mentioned that are consistent with the other reviews on this hotel. ‘Littlehippie’ rates the Menzies Prince Regent Hotel in London very low with only one point. When studying this review, the reader learns that this reviewer only had lunch and that this was very disappointing. The context for the low rating however is convincing. The reviewer ‘ILoveNudeYork’ shares a similar sentiment on the Da Vinci Hotel in New York rating it one out of five only. The rating, however, provides context on the hotel experience and the traveller that explains the low rating. ‘Persevaara’ disagrees openly with the other reviewers of the New York Inn hotel explaining the high rating of four points. All further inconsistencies in ratings found in the sample may be explained by similar context provided. The review that caused the strongest suspicion of being false due to an inconsistency in its rating is the review from ‘fereidooni’ on the Ramee Royal hotel in Dubai. This review is inconsistent in that the reviewer rates the hotel with 4 stars where the calculated average rating is only 1.75. Further, it appears that the guest has been visiting another hotel than the other reviewers, in terms of comments. The guest is one of two out of ten reviewers that do not seem to be affected by the noise of the night club and is the only reviewer that feels that the staff in the hotel was friendly. The context provided in this review is limited to the extent that the author classified the review as lacking in context.

In terms of writing style, four reviews were found in the sample of which two read like a marketing message, and in two others the reviewer is stressing that he or she is not biased and that this is an objective review. Although these deviations initially created concern with the author relating to their reliability, these ratings generally do not show a strong deviation from the average of the hotel. Table 4 presents the rating consistency of the ratings of these four reviews.
Table 4  Rating consistency of reviews with deviating writing styles

<table>
<thead>
<tr>
<th>Hotel Name</th>
<th>Destination</th>
<th>Ranking of Hotel</th>
<th>Rating by Reviewer</th>
<th>Average Rating</th>
<th>Deviation</th>
<th>Standard Deviation</th>
<th>Standard Deviation Variation from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dar Al Masyaf at Madinat Jumeirah</td>
<td>Dubai</td>
<td>High</td>
<td>5</td>
<td>4.76</td>
<td>0.24</td>
<td>0.41</td>
<td>-0.17</td>
</tr>
<tr>
<td>Menzies Prince Regent</td>
<td>London</td>
<td>Middle</td>
<td>2</td>
<td>3.24</td>
<td>1.24</td>
<td>1.33</td>
<td>-0.09</td>
</tr>
<tr>
<td>Whiteleaf Hotel</td>
<td>London</td>
<td>Low</td>
<td>4</td>
<td>1.45</td>
<td>2.55</td>
<td>0.69</td>
<td><strong>1.86</strong></td>
</tr>
<tr>
<td>Porto Bay Rio International Hotel</td>
<td>Rio de Janeiro</td>
<td>High</td>
<td>4</td>
<td>4.52</td>
<td>0.52</td>
<td>0.62</td>
<td>-0.10</td>
</tr>
</tbody>
</table>

Source: Author’s own model based on data from TripAdvisor

From table 4 it follows that only one review’s rating deviates from the average with a value amount higher than the standard deviation. This means that in terms of the two scenarios identified in which a false review would be established, it is highly unlikely that three of these four reviews could be false. The remaining review on the Whiteleaf hotel in London is accompanied by a rating that is much higher than the average and that deviates from the standard deviation of all ratings on this hotel with 1.84. As such, it is not surprising that this author takes a defensive attitude in his review.

From combining the three characteristics that may indicate a false review, two reviews remain that could be considered as potentially false. The review by ‘fereidooni’ on the Ramee Royal hotel in Dubai deviates strongly in rating and lacks context. The review of ‘Hydonian’ on the Whiteleaf hotel in London deviates in rating as well and draws attention through a writing style that may be defined as defensive.

For example, the Whiteleaf hotel in London and the Ramee Royal hotel in Dubai are the lowest ranking hotels in their destination that fulfilled the sample criteria and carry an average rating of 1.45 and 1.75 respectively. As such it is highly unlikely that a visitor of TripAdvisor would be tempted to look at, let alone be influenced by, these potentially false reviews. In perspective of sample, two potentially false reviews identified from a total of 330 reviews represent 0.6% of the reviews analysed.
7.2 TripAdvisor censors reviews and feedback from hoteliers;

The second argument identified in the theoretic review was that TripAdvisor declined to publish a review (Jeff, 2008a) and did not allow hoteliers to provide responses on reviews. Here one can only speculate from own experience in posting reviews. All 14 reviews submitted by the authors over the period of August 2009 to March 2010 were posted on TripAdvisor. The posting of one review appeared delayed as a result of the screening algorithm of TripAdvisor that selected the review for further scrutiny as the hotel was located in the Author’s town of residence. Further the amount of hotelier’s responses to reviews appears to be substantial, though this has not been quantified.

7.3 Conflict of interest due to ownership by Expedia

The third argument against the reliability of TripAdvisor is its conflict of interest as it is owned by Expedia which makes money by selling hotel rooms online. From this claim would follow that TripAdvisor would favour hotels that deal with Expedia over those that do not in its ranking. No evidence of this was found in the study. The results suggest a model that works the other way around. Many small boutique hotels and guest houses rank in the top 10 of destinations (see Figure 2) and these hotels do not appear on Expedia or other online travel agents and do not present a clear financial gain for TripAdvisor. As such there is no support for this claim in the data that was analysed.

7.4 Objectivity of consumers in their assessment of quality

The fourth argument outlined in the theoretic review was that consumers are not objective in their assessment of quality (Hewitt, 2008; Weyel, 2008). This argument was investigated by looking at consistency of the reviews and their accompanying ratings. Also the findings on the context of reviews were taken into account as this presents an important indication on why a review and its rating were either positive or negative.

In terms of consistency of the reviews and the accompanying ratings, the data from the sample presents different results based on the ranking of the hotels on TripAdvisor. The reviews on the highest ranking hotels show very little deviation in ratings. Reviews on the middle ranking hotels display the highest deviation in ratings. Nine out of the 110 reviews on these hotels disagree openly with the other reviews, and nine have clear expressions of agreement with the other reviews. The ratings in reviews of the lowest ranking hotels in each
destination present a standard deviation that lies in between that of the highest ranking and the middle ranking.

The consistency of reviews, meaning the extent to which the written review is consistent with its accompanying rating was found to be very strong with only one review that was found to be inconsistent out of the total sample of 330 reviews.

The context of the review provides a clear indication of the consumer’s interpretation of quality despite differences in the value judgement of that quality. The results indicated that most reviews are rich in context that facilitates the reader to understand how the reviewer came to his or her value judgement of the quality of the hotel experience. Only ten reviews were found to be lacking sufficient context for the reader to understand how the reviewer came to his or her assessment, representing 3% of the total sample of 330 reviews.

From this, one can conclude that there appears to be more agreement in the reviews and ratings on the highest ranking hotels and that this agreement decreases with the lowest ranking hotels and is lowest with the middle ranking hotels. The high deviation in ratings in especially the middle ranking hotels seems to supports the argument that consumers are not uniform in their assessment of the quality of the hotel experience. However, the rich context presented in most reviews combined with the continuous growth of TripAdvisor appears to make them useful for other consumers.

8. CONCLUSIONS AND RECOMMENDATIONS

TripAdvisor, with over 30 million reviews, is the market leader, not only in the total number of reviews and members, but also features the highest number of reviews per hotel featured on the website, compared to other review sites and online travel agents. The growth of TripAdvisor appears to be facilitated by a constant innovation in traveller services, which during the time of the research were regularly adapted and extended. TripAdvisor allows guests to post reviews and ratings and uses the ratings of these reviews, combined with other factors to provide companies with a ranking. This ranking represents the quality image of a hotel and results on strong exposure on the website.

The reliability of TripAdvisor was explored through the number of reviews per hotel in 11 destinations, an analysis of the screening algorithm, the consistency of ratings, the consistency, context, and credibility of writing styles and the hotel types of hotels that rank in
the top 10 of the 11 destinations. The four theoretical arguments that challenge the reliability of TripAdvisor have been used to structure and triangulate the findings. The following conclusions can be drawn with regard to these four arguments.

The argument that TripAdvisor allows anonymous reviews and that fraudulent reviews may be posted is true to the extent that the data shows that this should be possible given that certain precautions are made to circumvent the screening algorithm of TripAdvisor. The amount of reviews of hotels in the sample appears to be too low for the majority of the middle ranking and lower ranking hotels to claim that their rating cannot be easily influenced. However, a screening of the 330 reviews in sample two against two scenarios in which three characteristics of potentially fraudulent reviews were tested revealed that only two reviews out of the sample give an indication to be potentially false. Given that these reviews that were identified as potentially false were those of the lowest ranking hotels in their destinations, the conclusion is that within the sample tested, fraudulent reviews do not appear to influence the hotel rankings on TripAdvisor. From this follows that when a hotel offers poor quality, it seems almost impossible to change the image of the hotel by posting false reviews as the inconsistency between reviews would be unbelievable and readers would take notice. A hotel that offers exceptional quality cannot be easily tarnished by competitors due to the same reasons.

The data does further not provide any indication that TripAdvisor may censor reviews as all 14 reviews written by the authors over an eight month period were accepted as they were. Also no further substantiation of the argument that hotelier’s responses are censored was found, though this was not researched in depth.

Regarding the argument that TripAdvisor may be biased as it is owned by Expedia, the author found the opposite from the induced assumption that TripAdvisor would favour branded hotels and hotel groups to be true as especially the top 10 rankings in European destinations feature a high number of small and boutique properties without any affiliation and commercial value for TripAdvisor.

The argument that consumers are not objective in their assessment was found to be partially true. Especially the reviews and ratings in the middle ranking properties of the sample display apparent differences of opinion in the reviews and the accompanying ratings. This does not hold true for the highest ranking hotels of which the reviews are characterised by a high degree of agreement, overlap, and a low standard deviation in the ratings. However, also
when the middle ranking hotels are concerned, the context provided in most reviews provides
the reader with a paradigm by which the review was written allowing the reader to place it in
context. Further, agreement should not be mistaken for objectivity, especially in an industry
that is dominated by service which by its very nature is subjective.

From this, it can be concluded that although it is possible to post false reviews on
TripAdvisor and in the majority of the lower ranking and middle ranking hotel alter the
hotel’s rating and ranking, no evidence was found that this happens on a large scale. Further,
no evidence of censorship or a conflict of interest was established, and although reviewers do
not always agree, the context in the majority of the reviews allows for readers to identify the
quality of a hotel to a very detailed extend. As such, TripAdvisor provides a reliable and rich
source of information for guests and with its past and current growth can be argued to
become more reliable in the future as an increased number of reviews are likely to limit
opportunities to influence ratings by posting fraudulent reviews.

For consumers, TripAdvisor presents a platform that is rich in reliable data that is useful to
identify the quality of a hotel as it is experienced by fellow guests.

Hoteliers should not only take this medium seriously, but also make use of the richness of the
data available on their hotel. The context provided by reviewers presents opportunities for
improvement that conventional marketing research methods do not provide. Craig (2010)
sums up this paradigm when he argues: “Give up the notion that there is a shortcut. Just be
the best hotel you can be every single day”.

REFERENCE LIST

ABC News. 2009. Buyer beware: don’t believe everything you read: a hotel might get rave reviews
online, but who’s writing them? [online] URL:
2009).

City of Amsterdam. 2008. Research and statistics economic development department fact sheet;
Amsterdam remains a popular tourist destination. [online] URL:

Craig, D.E. 2010. What’s the Secret to Achieving Top Ranking on TripAdvisor?, Hotel Online, 16
February. [online] URL: http://hotel-online.com/News/PR2010_1st/Feb10_TripAdvisorRanking.html
(Accessed on 2 April 2010).


Larpent, M. 2009b. Interview with the author. Johannesburg, 1 and 2 December. (Ms. Larpent is Business Development Executive for TripAdvisor).


