

Hotel Review Platform Comparison: A Case Study of the 25hours Hotel at MuseumsQuartier in Vienna

Bachelor Thesis for Obtaining the Degree
Bachelor of Business Administration in
Tourism, Hotel Management and Operations

Submitted to Christian Weismayer

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Affidavit

I hereby affirm that this Bachelor's Thesis represents my own written work and that I have used no sources and aids other than those indicated. All passages quoted from publications or paraphrased from these sources are properly cited and attributed.

The thesis was not submitted in the same or in a substantially similar version, not even partially, to another examination board and was not published elsewhere.

23/05/18

Date

Abstract

In today's society, consumers frequently like to consult reviews before making purchase decisions. Thus, there is a growing need for analyzing reviews and discovering the different insights they can give hotel managers to run and improve their business. Review characteristics may vary across the different platforms and thus it is vital to uncover the different attributes of the online reviews on the assorted sites.

The objective of this thesis is to compare and contrast the reviews of the 25hours hotel at the Museumsquartier in Vienna published on four different hotel review platforms: tripadvisor.com, yelp.com, booking.com and expedia.com. The main research question can be defined as the following: On which platform are consumers most satisfied?

The problem the author is faced with is finding out on which review platform consumers are the most satisfied with their stay and why. Customer satisfaction is expressed in star rating. The main hypothesis can be outlined as the following:

There is a significant relationship between customer satisfaction and the review platform.

The research question is then answered by analyzing and extracting variables from reviews published on the four different platforms and using the statistical analysis program SPSS to draw conclusions from the data. The results show that there are no significant differences in customer satisfaction between the four different review platforms. However, significant differences between platforms could be found in character length, number of helpfulness responses, and number of management responses. The factors of a guest's experience that turned out to have a significant positive relationship with

customer satisfaction are the comfort, perceived service quality of staff, room cleanliness, food and drinks quality, and value for money. Management should thus pay great attention to improving these factors if their aim is to satisfy guests and improve online ratings.

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List of Abbreviations

ICT – Information and Communication Technologies

OTA – Online Travel Agent

eWOM – electronic word-of-mouth

UGC – user generated content

1 Introduction

According to Vermeulen and Seegers (2009), countless consumers turn to online reviews before making any sort of decisions about their travel plans. Thus, there is growing demand for objective travel information online which is provided by sites, commonly called tourism eMediaries (Vermeulen & Seegers, 2009). A study performed by Vermeulen and Seegers (2009) concluded that positive as well as negative reviews boost customer awareness of hotels while positive reviews enhance attitudes towards the hotels. This highlights the importance of online reviews and thus the significance of the platforms that provide consumers access to them.

According to Xie, Zhang, and Zhang (2014), in order to lessen the perils of visiting a new establishment, consumers frequently look online for word-of-mouth. Whether it is on various message boards, twitter, review websites or online communities, consumers like to consult others before making a buying decision, especially when it comes to experience goods such as hotel services. Hotel services are perishable and cannot be tried or tested before purchase and thus consumers may rely on eWOM even more than with traditional products (Xie, Zhang, & Zhang, 2014).

The power of online reviews stems from the fact that anyone can create them without identifying himself or herself. While consumers might not be completely honest when asked about their opinions face to face, the internet allows guests to speak their mind without having to deal with the consequences (e.g. staff being rude when complaining about bad service). This may have advantages as well as disadvantages for hotels. Constructive criticism may help hotels improve their services while dishonest, negative reviews from disgruntled customers or competitors wishing to lower the average rating online may harm the hotel's reputation.

This thesis will compare and contrast 4 different review platforms: tripadvisor.com, yelp.com, booking.com and expedia.com by analyzing 200 online hotel reviews of the 25hours hotel at the Museumsquartier in Vienna. Subsequently, it will be discovered on which review platform consumers are most satisfied with their experience. Additionally, it will be uncovered which review characteristics lead to consumers being satisfied and which caused them to have a good experience at the hotel. However, first it is necessary to discover what differences researchers have discovered about review platforms and text mining and which aspects of a guest's stay in general have had the most influence on customer satisfaction in the past. To find these characteristics, previous literature will be consulted. Next, the research methodology will be described. Subsequently, the results of the study will be analyzed and implications for managers formed based on the results from the data. Lastly, the limitations of the study will be discussed.

1.1 Presentation of the Problem

“Online reviews comprise of voluntary consumer-generated evaluations of businesses, products or services by internet-users who purchased, used, or had experience with the particular product or service” (Statista, 2018). As of the 3rd quarter of 2017, 52 percent of global internet users aged between 25 and 34 post online reviews (Statista, 2018) and 17 percent of online users in the United States always examine online reviews before buying a product (Statista, 2018).

These figures show the significance of online review sites such as tripadvisor.com, expedia.com, yelp.com and booking.com. However, with such variety, how do hotel managers know which site has the most important data and information and which one is important in order to run and improve their business? Review characteristics may vary across the different platforms and thus it may be vital to uncover the different attributes of the online reviews on

the assorted sites. The problem the author is faced with is finding out on which review platform consumers are the most satisfied with their stay and why.

Consequently, the research question shall be defined as the following:

On which review platform are the customers most satisfied?

In other words:

On which platform are the reviews most positive?

This leads to the following main hypothesis:

There is a significant difference in customer satisfaction between the different review platforms.

Some of the sites that will be examined may have little usable information at all and some may turn out to be very valuable in discovering significant information about past and future guests. There may be no differences between the reviews of the different platforms, but if there are, it can have a significant effect on the way hotel managers operate their business.

Performing extensive surveys can cost lots of money and time, and the design of the survey may influence the results. By using up-to-date travel-related user-generated content (UGC) such as reviews, it is possible to develop an inexpensive method for real-time investigation of the needs of consumers (Song, Saito, & Kawamura, 2018). By using content-analysis techniques in this thesis, the data needed to answer the questions posed is already out there and can be obtained easily and rapidly.

1.2 Aims of the Bachelor Thesis

The objective of this thesis is to compare and contrast the hotel reviews of the 25hours Hotel at the Museumsquartier in Vienna published on four different hotel review sites: tripadvisor.com, yelp.com, booking.com and expedia.com. The ultimate goal is to detect whether there are differences between the satisfaction levels of customers depending on the platform the review was published on and to find links between satisfaction levels and other review

characteristics. In particular, it is also of interest to illuminate on which site the most negative reviews are published, and which site includes the most positive feedback for the hotel. In other words, the objective of this study is to find out on which platform reviewers are the most satisfied and what their contentment depends on.

Revealing the platform where satisfaction levels are the lowest could help managers with quicker service recovery in the future. Regularly checking reviews on the sites with most negative assessments of the hotel and responding to them faster can aid in making guests with a negative experience feel important and may help the hotel to get them to return to the hotel. Moreover, the results of this study may possibly aid managers in identifying guests who could be “troublemakers” depending on which site their trip was booked through and pay close attention to their needs in order to make them leave a positive review. In addition, identifying the problems in the 25hours hotel that guests mentioned in neutral and negative reviews can help the managers solve issues and improve customer satisfaction.

Uncovering the characteristics of reviewers that are satisfied with the hotel’s performance and those who are not, can uncover valuable information about their guests and their desires. For example, if many guests mention the low service quality of staff, the 25hours hotel can focus on training employees better in the future. This leads to the following, additional hypothesis:

There is a significant difference in the perceived service quality levels identified by reviewers between the different review platforms.

2 Literature Review

2.1 Insights from Review Text Mining

Big data analytics is a growing field in tourism as it helps develop new knowledge and aids in decision making. While research has heavily relied on traditional data collection methods such as consumer surveys and focus groups in the past, there is much to be gained by employing big data analytics such as better understanding customers, competitors, market characteristics, products business environment, the impact of technologies, and stakeholders. It has also been shown that online reviews are able to predict certain things like box office sales or product quality. (Xiang, Schwartz, Gerdes Jr., & Uysal, 2015).

In the study performed by Xiang, Schwartz, Gerdes Jr. and Uysal (2015), the authors employed online reviews of hotel properties to comprehend hotel guest experience and its connection with guest satisfaction. They used text analytics to examine reviews from Expedia.com and then explored their connection with hotel satisfaction ratings. When analyzing the reviews, the researchers compiled a list of the top 80 words used in hotel customer reviews that were used to explain satisfaction levels. The words were separated into categories depending on the aspect of their stay, among them were the core product such as “room”, the hotel amenities such as “restaurant”, the hotel attributes such as “location”, the hotel staff-related descriptors such as “staff”, the hotel service encounters such as “parking”, the evaluation of experience such as “clean”, the travel context such as “business”, and finally, the possible actions taken after the stay such as “recommend”. The top twenty words that were mentioned by guests in their reviews were room, clean, staff, location, comfortable, service, friendly, close, breakfast, helpful, bed, price, restaurants, walking, area, parking, bathroom, pool, free, and convenient. The authors then

discovered that there was a strong connection between satisfaction of the guest and experience.

Furthermore, they revealed that hygiene factors are an important aspect in the guest experience as without them, the customer cannot completely enjoy the experience (Xiang, Schwartz, Gerdes Jr., & Uysal, 2015). This study gives some food for thought and possible ideas for variables to measure in this thesis. Hygiene in particular would be a factor that influences customer satisfaction a great deal and should be included in the characteristics.

Cenni and Goethals (2017) investigated the negative reviews written in English, Dutch and Italian on TripAdvisor and whether they showed any similarities. After examining 100 reviews, the researchers came to the conclusion that there is an overall tendency for the three language groups to express themselves in a comparable fashion. However, positive reviews written in English tend to be more prominent (Cenni & Goethals, 2017). Cenni and Goethals (2017) state that although there are no significant language differences, investigating data and reviews in other languages helps limit the number of generalizations made when only researching data in English. Ren (2018) agrees that most researchers have focused on analyzing reviews written in English and that more studies in languages other than English are needed to provide insights into the discourse of online consumer reviews.

The more reviews the hotel has on rating platforms, the higher the overall rating is on the review platform. Moreover, the hotel category (luxury, mid-scale, budget, etc.) impacts the rating in a positive manner while the size and the region has a negative effect on ratings (Bramillari & Sala, 2017). The positive effect on ratings that results from the hotel category and the negative effect that results from the size and the region cannot be examined in this thesis as only the reviews of one hotel will be analyzed.

Ukpabi, Olaleye, and Mogaji (2018) examined customers' perceptions of service quality attributes and security fears of hotels in Africa by analyzing TripAdvisor reviews. The demographic distribution was analyzed as well as security, location, room service, toilet/toiletries, price, breakfast/food, drinks/beverages, staff, Internet/Wi-Fi, swimming pool and gym. All of these services were rated either positively or negatively. Furthermore, the demographic distribution of reviewers was identified and each individual review was rated either positively or negatively on the intention of the reviewer to revisit. Across all the countries that were included, security, location, food and staff received the most positive feedback. Where reviews were negative, customers were mostly dissatisfied with price and the Wi-Fi/Internet. Out of the 11 categories, the location of the hotel was the greatest predictor of hotel revisit intention, closely trailed by security assurance and staff. Additionally, hotel star rating turned out to be a critical determinant of satisfaction (Ukpabi, Olaleye, & Mogaji, 2018).

These insights from Ukpabi, Olaleye, and Mogaji (2018) suggest categories that would also be useful for comparing characteristics of booking platforms in this paper. Location, breakfast/food, drinks/beverages, staff, Internet/Wi-Fi and gym are characteristics that should also be examined when comparing platforms as they seem to be of significant value to guests. According to Ukpabi, Olaleye, and Mogaji's results, security, location, food and staff should also receive the most positive feedback when analyzing the reviews of the 25hours hotel. Security however, should be of limited concern to travelers as Vienna is one of the safest cities in the world but should nevertheless still be included in the characteristics. Satisfaction with the hotel's swimming pool will not be evaluated as the 25hours Hotel has none. However, there are spa facilities and a steam room available to guests.

2.2 Review Platform Differences

While the content of reviews and their implications is a widely studied topic, there are only few studies that focus on comparing reviews of different booking platforms rather than relying on a single data source.

A study performed by researchers Xiang, Ma, and Fan (2017) focused on finding differences in terms of information quality between the review platforms TripAdvisor, Expedia and Yelp through text analytics. They agree that previous research and existing studies are limited as they have usually only taken advantage of a single data source for the online reviews which considerably restricts their generalizability and impact on knowledge, especially since there has recently been concerns of so-called fake reviews on the most popular review platforms. Moreover, the online eco-system in tourism and hospitality is huge and complicated, as are the different platforms that range from community-based sites such as Lonely Planet, TripAdvisor or Yelp to transaction-based online travel agencies (OTA's) such as Expedia and Booking.com where reviews are included (Xiang, Du, Ma, & Fan, 2017). "Therefore, social media research using online review data must be cognizant of the nuances in these data sources in order to make conscious, appropriate methodological decisions when considering the representativeness and quality of the data" (Xiang, Du, Ma, & Fan, 2017). By adding one more data source to include four review platforms, this thesis has a very good chance of gaining more accurate results. In order to compare the different review platforms, the researchers recorded the linguistic features, semantic features, sentiment, rating, and review helpfulness of the reviews.

With the purpose of comparing the quality of the information on the various platforms, Xiang, Du, Ma, and Fan (2017) used a set of review related measures to find out if there are differences between the review platforms in terms of linguistic features, semantic features, sentiment, rating and review

helpfulness. “Web crawlers written in the Python and Java programming languages were used to mimic a user’s access to the system by specifying the travel destination and following all the links of hotel properties displayed as search results to download relevant information” (Xiang, Du, Ma, & Fan, 2017). They collected variables including the hotel name, address, hotel category, all of its reviews, user responses, (usefulness or helpfulness), and the overall rating from all searchable hotel properties in Manhattan, New York City. The language detection package in Python was used to detect the different languages the reviews were written in and all non-English ones were subsequently removed. Expedia turned out to contain the largest number of reviews in total while TripAdvisor turned out to have the largest amount of reviews per hotel property and Yelp seemed to contain the fewest reviews in total (Xiang, Du, Ma, & Fan, 2017). For this thesis it would thus also be interesting to illuminate which platform contains the most reviews for the 25hours hotel.

In Xiang, Du, Ma, and Fan’s study (2017), the average length of reviews turned out to be much higher on TripAdvisor and Yelp than Expedia, where a significant number of reviews contained no text at all.

While review readability was alike on all three platforms, the average rating on Yelp was much lower than TripAdvisor and Expedia. Lastly, the average number of helpfulness responses per review was significantly greater on TripAdvisor and Yelp than on Expedia (Xiang, Du, Ma, & Fan, 2017). The number of helpfulness responses on the different platforms will also be compared in this thesis. However, while TripAdvisor, Expedia and Booking.com all offer reviewers the option of finding a review “helpful”, on Yelp there are several options for other reviewers to choose when it comes to judging other people’s feedback. Reviewers can choose between finding a review “useful”, “cool” or “funny”. For the sake of simplicity, whenever a reviewer finds a review “useful” on Yelp, it will count as being helpful.

The authors Xiang, Du, Ma, and Fan (2017) thus concluded that the platforms TripAdvisor and Yelp seemed to have more valuable information than Expedia overall while Yelp seemed to attract more dissatisfied reviewers. Finally, the results show that review length is a strong indicator of helpfulness (Xiang, Du, Ma, & Fan, 2017). These insights from previous literature lead to the following, additional hypotheses:

There is a significant difference in character length of reviews between the different review platforms.

There is a significant difference in the number of helpfulness responses per review between the different review platforms.

There is a significant difference in the overall sentiment of the review text between the different review platforms.

2.3 Management Responses

Other researchers have focused on how hotel managers respond to reviews posted online. Currently, there is a trend towards responding to online reviews and hotel managers are inclined to form responses in either a company-focused or a customer-focused style (Bonfanti, Negri, & Vigolo, 2016). Bonfanti, Negri, and Vigolo (2016) also agree that customer reviews can have a huge impact on hotels and their online reputation and can increase service quality control. Consequently, online reviews are a valuable tool for hotel managers to acquire knowledge about their guests. Reacting to service failures and creating a bond with the customer can limit the danger of substitution (Bonfanti, Negri, & Vigolo, 2016). Therefore, this thesis also looks at the different review platforms in terms of how many management responses are

published on the different platforms and the influence on customer satisfaction. This leads to the following, additional hypothesis:

There is a significant difference in management responses between the different review platforms.

There is a significant difference in customer satisfaction according to the management responses.

Hoteliers have recognized the importance of creating a conversation between themselves and the guests and hotel review sites such as TripAdvisor give them the option of creating manager accounts to respond to guests. When management responds to critics, they should be immediate because negative reviews can negatively influence future attitudes towards the hotels (Xie, Zhang, & Zhang, 2014).

2.4 Customer Satisfaction

While the research question remains on which platform reviewers are most satisfied with their experience at the 25hours hotel, first it is necessary to uncover which factors contribute to a guest being satisfied in the first place. Customer satisfaction is important in order to build customer loyalty and a long-term relationship with the guest which leads to repeat business (Dominici, 2010). This leads to the following review question which has already been noted in the introduction section of this thesis:

There is a significant difference in the satisfaction levels of reviewers between the different platforms.

There seems to be a rift between what hospitality managers think guests value in the selection of their accommodation and what guests believe is important.

Customer comment cards and consumer surveys are used but lead to inconclusive results due to the small sample sizes and low response rates. For this reason, the use of consumer generated content to measure customer satisfaction is gaining popularity with researchers (Xiang, Schwartz, Gerdes Jr., & Uysal, 2015).

For this study, the review characteristics that will be recorded should be related to customer satisfaction in one way or another. For example, the age of a reviewer would be an important characteristic to extract from reviews because it is more likely for an older reviewer with more travel experience to be more selective and less satisfied with their stay. In other words, the review characteristics that will be extracted should be influencers of customer satisfaction. Again, this leads to the following hypothesis:

There is a significant difference in the age of the reviewer between the different booking platforms.

“Hotel guest satisfaction is a complex human experience within a hospitality service setting” (Xiang, Schwartz, Gerdes Jr., & Uysal, 2015). The study of the satisfaction of guests emerged during the 1970’s and since then several definitions have surfaced (Xiang, Schwartz, Gerdes Jr., & Uysal, 2015). The most commonly accepted definition is however, that the satisfaction levels result from the difference between expected performance and perceived performance (Oliver, 1980). Moreover, satisfaction is also considered to impact the consumer’s attitude change and purchase intention (Oliver, 1980). For this study, this would mean that the consumers who wrote positive reviews found everything to be as they expected it to be at the 25hours Hotel. Now the question is what the consumers expect from a hotel in the first place.

Customer satisfaction can be established by subjective and objective elements. There have been numerous studies on the subject of what factors influence

customer satisfaction. Among them are factors such as room cleanliness, security, value for money, friendliness of staff, comfort, convenience of location, fast service, safety, and attitudes of employees (Holjevac, Marković, & Raspor, 2009). Using multiple regression, Choi and Chu (2001) identified the three most important elements determining customer satisfaction as staff service quality, room qualities and value. Following hypotheses can be formed according to these insights:

There is a significant relationship between customer satisfaction and security.

There is a significant relationship between customer satisfaction and location of the hotel

There is a significant relationship between customer satisfaction and comfort.

There is a significant relationship between customer satisfaction and staff service quality.

There is a significant relationship between customer satisfaction and room cleanliness.

There is a significant relationship between customer satisfaction and value for money.

Gunderson, Heide, & Olsson (1996) express customer satisfaction as the guest's judgment of a product or service after consumption that can, in succession, be assessed by evaluating the customer's appraisal of performance on specific attributes. Employing a Likert-type questionnaire, the authors of the study evaluated Norwegian Business travelers' judgements of tangible and

intangible aspects of hotel departments and concluded that the guests found intangible aspects of the front desk such as the speed at check-in and the receptionists' enthusiasm to provide service as well as the tangible aspects of housekeeping such as comfort and amenities of the guest rooms to be most important (Gunderson, Heide, & Olsson, 1996).

As mentioned beforehand, Xiang, Schwartz, Gerdes Jr., and Uysal (2015) agree that customer satisfaction is heavily influenced by hygiene factors and experience. Therefore, we can form the following hypothesis:

There is a significant relationship between customer satisfaction and hygiene factors.

However, hygiene factors are similar to overall cleanliness and thus the aforementioned hypothesis can be disregarded as it will already be tested by finding out whether there is a significant relationship between customer satisfaction and room cleanliness.

Zhou, Ye, Pearce, and Wu (2014) identified twenty-three attributes that influence customer satisfaction in the hotel industry and separated them into categories by analyzing reviews, among them the physical setting of the room, the hotel and the food, the value, location, and the staff.

In this study, customer satisfaction in reviews will be measured by the overall star rating of the guest's feedback. According to previous literature on this topic, other variables that could be influencers of customer satisfaction and will be extracted from reviews are cleanliness, service quality, security & safety, value for money, friendliness of staff, comfort, location, amenities, and food. Therefore, we can form the following, additional hypothesis:

There is a significant relationship between customer satisfaction and food & drinks quality.

3 Methodology

The 25hours Hotel at Museumsquartier in Vienna was chosen because it has more than 50 reviews per platform. Analyzing any less than 50 reviews per platform would not lead to reliable results. Many hotels in Vienna are not represented on all 4 review platforms and thus were not eligible for this study. Despite being a relatively new hotel, the 25hours hotel at the Museumsquartier in Vienna is well represented across the different platforms.

The reviews will be taken from the popular review platforms tripadvisor.com, booking.com, yelp.com and expedia.com. Each review will be examined and by using content analysis processes, the different review aspects will be extracted and recorded. The data sheet contains different types of variables including numeric, string or date. However, most of them are numeric. Some variables can be extracted directly from the platforms by looking at the reviews while others can be extracted only by reading the text and drawing conclusions about certain characteristics. For example, the number of helpful votes per review can be recorded by simply looking at the review while the perceived service quality can only be noted by reading the review text and deciding how satisfied the person who wrote it was with that particular factor of their experience at the hotel. Next, the collected data will be analyzed by employing the popular statistics software SPSS.

In order to test the main hypothesis, a non-parametric Kruskal-Wallis test will be performed because one does not know the direction of the outcome. Other tests to be conducted are one-way ANOVA and Post-Hoc Bonferroni tests, Chi-square tests, Mann-Whitney U-tests, and Spearman's rank-order correlation. Subsequently, conclusions will be drawn from the data and implications for managers formed.

3.1 TripAdvisor

Founded in Massachusetts just above a pizza parlor in February 2002, the site was originally not intended to be a review platform, but a business to business tool. Although TripAdvisor contains more reviews for restaurants, dining establishments were only added in 2004 for the first time. Establishments are not rated by using stars, but with bubbles (e.g. some hotels may have a rating of 2 bubbles), but for the sake of eliminating any confusion, in this thesis it will refrain from using “bubbles” as a satisfaction measure and simply measure satisfaction with stars (Telegraph Travel, 2015). Today, TripAdvisor is the most visited travel website in the world and contains over 600 million reviews and opinions, has 455 million average visitors per month and 7.5 million hotels, restaurants and attractions (TripAdvisor, 2018). TripAdvisor is often referred to as the largest virtual travel community in the world (Xiang, Du, Ma, & Fan, 2017).

TripAdvisor might be the review platform that provides the most information not only about the hotel, but also about the reviewer. When hovering over the picture of the reviewer, one can see their age and location, how long they have been a member of the site, the number of contributions, how many reviews published and their distribution, the number of cities visited, the number of helpful votes and the number of pictures uploaded to the site. Additionally, there are certain categories listed that a reviewer can fall into such as “Foodie”, “Peace and Quiet Seeker”, “Luxury Traveler”, “Beach Goer”, “Family Vacationer”, etc.

Figure 1 shows an example of a review of the 25hours hotel on TripAdvisor where a manager has responded to the guest’s feedback. Moreover, it can be seen that the review has 2 helpful votes, a variable that will also be collected later on. Additionally, in the top right corner the review is marked as the hotel’s favorite, presumably because it is an extensive positive review. Figure 1 also

shows that on TripAdvisor, one can identify reviews that were uploaded from a mobile device. This would also be an interesting variable to measure for this study but sadly, the other review platforms do not offer this feature on their site.



Mish1984
 London,
 United
 Kingdom

📍32 👍28

★★★★★ Reviewed January 27, 2018 via mobile ★ Hotel's Favorite

Quirky, fun and right at home!

This hotel is nothing short of amazing. I visited 2 weeks ago with my husband. You know immediately how awesome this hotel is when the first thing you see is a wall of flashing paparazzi!!! If that doesn't set the tone then maybe the swinging couch, the photo booth or the little shop will!

The staff were welcoming, helpful and went above and beyond to meet my requests. I was so touched that a birthday cake for my husband and a framed photo of my children were placed in my room - 25hours Hotel, this was the sweetest! The guys at the front desk were able to track down places to eat at the middle of the night and were also able to order us food online too! One of the guys also told us of the local places to eat in order to avoid the overrated touristy places. Thank you!

Our room was big, the bathroom was cool with a massive window looking into the bedroom from the shower. There was also a satchel bag provided for us to use during our stay!

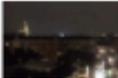
We tried the rooftop bar on a Friday night! The friendly barmen made great cocktails and the atmosphere was pretty cool! The view from the balcony overlooking the Museum Quarter was stunning.

Breakfast here is pretty good, they have plenty of continental options to choose from and they also take orders for eggs to be freshly prepared.

All in all, i had such an amazing time in Vienna and 25 Hours Hotel had made my stay fun, memorable and comfortable. I will definitely be returning to Vienna and when i do, I'll only stay in this hotel.

[Show less](#)

Stayed: January 2018, traveled as a couple




[Ask Mish1984 about 25hours Hotel at MuseumsQuartier](#)

👍 2 Thank Mish1984

This review is the subjective opinion of a TripAdvisor member and not of TripAdvisor LLC.

Christian K, Geschäftsführer at 25hours Hotel at MuseumsQuartier, responded to this review

Responded January 29, 2018

Dear Mish1984

Wow what an amazing feedback. Can I ask for more – simply no. Be assured that I will pass on you feedback to the entire hotel crew. This is simply the idea behind 25hours to create memories and not only being your home away from home. Be a home with some new friends.

You are more than welcome anytime and as well the rest of the company is looking forward to welcome you someday.

So fare all the best and greetings to your kids. They are looking lovely.

[Show less](#)

[Report response as inappropriate](#)

This response is the subjective opinion of the management

Figure 1: Tripadvisor Review Example

TripAdvisor additionally has a question and answer section where guests can upload an enquiry and a staff member will respond.

While TripAdvisor states that they have a zero-tolerance policy for fake reviews, it is in fact not necessary for a reviewer to confirm that they have stayed at the hotel. The chance of encountering a fake review on the platform may thus not be unlikely.

3.2 Booking.com

Booking.com is one of the largest travel e-commerce companies in the world founded in Amsterdam in 1996 by a tech entrepreneur (Booking.com, 2018). In 2006, the Priceline group (now known as Booking Holdings Inc.) purchased the site and combined it with Active Hotels. Approximately 1.7 million properties are listed on the site and 1.5 million rooms are booked through the platform every day (Booking.com, 2018).

Reviewed: January 8, 2018



Horia
 Romania
 Age group: 45 – 54

 36 Reviews
 1 helpful vote

9.2 **“Nice and convenient.”**

- The rooms are rather small and there`s no minibar.
- + This type of hotel has a modern, eclectic atmosphere, suitable for young and not so young people ready to pay a little bit more in order to feel special. It works, I like it last year and I liked it this year, too.

Stayed in [Standard Double Room](#) (December 2017)

 [Helpful](#)

 **25hours Hotel beim MuseumsQuartier has responded to this review**

Dear Horia, what a pleasure to read that you have visited us already twice and that you like our concept so much. We act...

[Continue reading »](#)

Figure 2: Booking.com Review Example

Figure 2 shows a review of the 25hours hotel on Booking.com. Similar to Figure 1, this review also has a response from a manager or staff member and there is also the option of finding the review “helpful”. Compared to TripAdvisor, there is limited information available about the reviewer. There is no option to click on the reviewer’s profile to uncover additional information about them and their contributions to the site. The reviewer characteristics which can be recorded from this site are the country of origin, the age group, the number of reviews uploaded and the helpful votes. Booking.com additionally contains overall ratings for individual categories such as cleanliness, staff, location, comfort, value for money, facilities, breakfast, and free Wi-Fi, as seen in Figure 3. However, in this study the author is more focused on the ratings of the individual reviews.

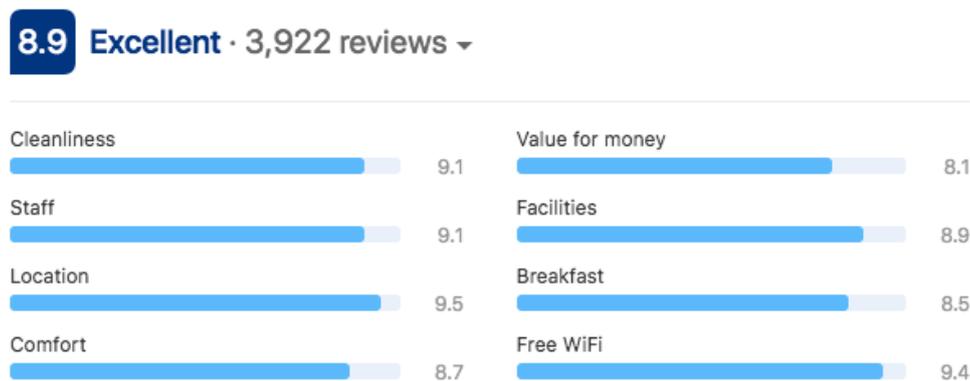


Figure 3: Booking.com Individual Categories

Only reviewers who booked their trip through Booking.com and stayed at the hotel in reality are able to publish reviews on the site which greatly limits the number of fake reviews. It is highly unlikely that any competitor would go as far as actually booking a trip simply to write a negative review afterwards.

3.3 Yelp

According to Xiang, Du, Ma, and Fan (2017), Yelp is the largest community for small and local businesses. Founded in 2004 by two former PayPal staff members Jeremy Stoppelman and Russel Simmons, Yelp now boasts

approximately 130 million unique visitors per month. Stoppelman and Simmons originally raised \$1 million in funding to start an “e-mail-circle” for their friends to exchange business reviews. Their success and reach comes from having established themselves as the leader in the field of local community coverage (Dixler Canavan, 2014).

Yelp frequently likes to market themselves as a supporter of small local businesses. However, there have been allegations claiming that Yelp has offered businesses to erase negative reviews in exchange for establishments purchasing ad space on the website (Dixler Canavan, 2014). While Yelp has denied the allegations, there may still be concern about fake reviews on the site, especially since Yelp requires no confirmation from the writer verifying that he or she has visited the establishment.

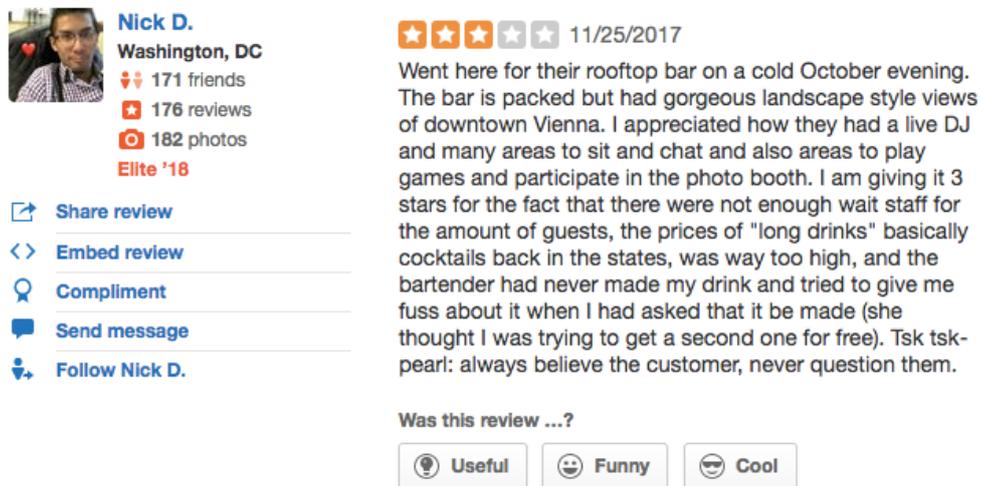


Figure 4: Yelp Review Example

Figure 4 shows a review of the 25hours hotel on Yelp. Characteristics of the reviewer that can be extracted from the website are the number of reviews, the number of photos, the number of friends the reviewer possesses and the reviewer’s city of origin. It is plain to see that so far, Yelp seems to have the least amount of collectable information for this study.

3.4 Expedia

Expedia is the largest online travel agent (Xiang, Du, Ma, & Fan, 2017). The website Expedia.com is part of the Expedia group, a global travel platform with a broad brand portfolio containing mostly metasearch engines and sites such as trivago.com, hotels.com, orbitz.com, Travelocity.com, hotwire.com, carrentals.com, traveldoo.com, etc. (Expedia, 2017).

Expedia began in 1996 as an online travel service founded and run by Microsoft. It grew from primarily selling airplane tickets to offering a multitude of other travel services such as hotel rooms, travel packages and car rentals. Microsoft later sold its interest in the company to USA Networks Inc. and subsequently became the leader in online travel (Company-Histories.com, 2012). Today, Expedia has over 22,000 employees in more than 30 countries and recorded \$10.1 billion in Revenue as of 2017 (Expedia.com, 2018).

The screenshot displays the 'Guest Reviews' section for a hotel. At the top, there are two tabs: 'About the Hotel' and 'Guest Reviews'. Below the tabs, the overall rating is shown as '4.5 out of 5' with a yellow progress bar. To the right, there are four category ratings: '4.6 Room cleanliness', '4.5 Service & staff', '4.3 Room comfort', and '4.5 Hotel condition'. A 'Verified Reviews' badge is also present. Below the ratings, there is a 'Sort by:' dropdown menu with options for 'Recent', 'Positive', and 'Critical'. Two reviews are listed:

- Review 1:** by A verified traveler, dated Apr 5, 2018. Rating: 5.0 Excellent. Text: "The hotel was great, centrally located. Very funky and fun atmosphere. The staff was friendly and helpful. The rooms were good, clean and quiet." Includes a 'Helpful' button with a count of 0 and a 'Report' link.
- Review 2:** by maria, new york, dated Apr 3, 2018. Rating: 5.0 Absolutely amazing. Text: "This hotel was amazing there is not one bad thing I can say about it. The rooms were so unique, and clean. The products they provided smelled delicious and were gentle on my skin. The location is absolutely perfect and close to the metro as well. The best part is downstairs they have a gym and a "mermaid room". There is a sauna and a steam shower, also they provide free yoga three times a week. I travel a lot and this hotel was amazing there is not one bad thing I can say about it!!!"

Figure 5: Expedia Review Example

Figure 5 shows the overall ratings for room cleanliness, service & staff, room comfort and hotel condition for the 25hours Hotel on Expedia as well as a typical review on the site. As with the other sites, there is also the option of marking a review as “helpful”. However, there is limited information available

about the reviewer, even less than on Yelp. The second review in Figure 5 contains the name of the reviewer and their origin, but some reviewers choose to stay completely anonymous. There is no option of clicking on the reviewer's profile to uncover additional information about them. This might become an issue with data collection as there is a limited amount of information about reviewers to collect from Expedia that could have an influence on customer satisfaction. Nevertheless, the review text can and should still be analyzed in detail. For example, the first review in Figure 5 mentions the staff in a positive manner and the second reviewer declares that the location of the hotel is perfect.

On Expedia, the reviewers are only able to comment on their hotel experience if they have actually booked their trip through Expedia and stayed at the hotel, just like on Booking.com. Comparatively, when publishing a review on Yelp, the platform does not check whether the reviewer has in fact been a guest of the hotel. This limits the number of fake reviews and speaks for the truthfulness of reviews on Expedia.

3.5 Variables and Measurement

The first variable measured is the overall customer satisfaction of the review expressed in stars/bubbles/points. Scores are given from 1 to 5 on Yelp, Expedia and TripAdvisor. However, Booking.com rates customer satisfaction from 1 to 10. Consequently, reviews on Booking.com with scores from 0-2.9 will be given a score in the data sheet of 1 (very poor), reviews with scores from 3-4.9 will be given a score of 2 (poor), reviews with scores from 5-6.9 will be given a score of 3 (okay), reviews with scores from 7-8.9 will be given a score of 4 (good) and reviews with scores 9-10 will be given a score of 5 (wonderful).

The second variable measured in this study is the service quality (of staff). Where service quality is mentioned as having been negative, the review will be

given a score of -1, where it is neutral a score of 0 and where it is mentioned in a positive way a score of 1. The friendliness of employees is a factor that contributes to the service quality of staff and is thus not measured separately.

The next variable measured in this study is the cleanliness. The cleanliness variable possesses values from -1 to 1 where -1 is negative, 0 is neutral and 1 is positive.

The date of the review will also be recorded and only the most recent reviews will be taken into consideration in the data collection.

Furthermore, the total number of reviews of the 25hours hotel of each individual platform will be recorded to compare them. Next, the character length of the reviews will be recorded and the number of helpfulness votes per review. On Yelp there is the option of marking reviews as “useful”, “funny” and “cool”. For this study, only reviews marked as useful will be counted as being helpful. Additionally, the overall sentiment of the review will be extracted where -1 is a negative review, 0 is neutral and 1 is positive.

The number of management responses will be measured by noting whether individual reviews have a management response or not. It is not possible for one review to have several management responses and thus the values will either be 0 or 1.

The next variable measured is the security of the hotel where a value of -1 is negative, a value of 0 is neutral and a value of 1 is positive. The location, the comfort, the value for money and the food quality variables are all measured in the same manner as well as the room quality and the quality of the spa & fitness facilities (-1=negative, 0=neutral and 1=positive). The comfort of the room mostly refers to the sleep quality and the coziness of the bed including

sheets and bedding. All other aspects of the room mentioned such as lighting, furniture, space, etc. are part of the room quality variable.

The age of the reviewer is not always supplied, but where this information is provided, a value of 0 means the reviewer is under 12, a value of 1 means the reviewer is 13-17 years old, a value of 2 means the reviewer is 18-24 years old, a value of 3 means the reviewer is 25-34, a value of 4 means the reviewer is 35-49 years old, a value of 5 means the reviewer is 50-64 years old and a value of 6 means the reviewer is 65 and older.

The gender of the reviewer is also recorded where 1 means the author is male and 2 means the author is female. While most reviewers do not provide their sex, their username and avatars usually give them away and it is possible to say with high certainty whether they are a man or a woman.

Additionally, a value of 1 means the reviewer is from Europe, a value of 2 means the reviewer is from Asia, 3 from Africa, 4 from America and 5 from Oceania.

Another variable that is measured is the number of pictures the reviewer uploaded with the review. Finally, the intention of the author of the review to revisit the hotel will be extracted where 0 means no and 1 means yes.

Not all reviews mention or contain all the variables measured and thus when there is no information available, the field will simply be left blank.

4 Results

The total number of reviews of the 25hours Hotel Museumsquartier on TripAdvisor amount to 2,316. On Booking.com, the total number of reviews for the property add up to 3,931. The complete number of reviews on Expedia

mount up to 1,245 reviews and on Yelp the total comes down to 70 reviews. The lowest number of reviews can thus be found on Yelp, which supports the insights of Xiang, Du, Ma, & Fan (2017). However, contrary to Xiang, Du, Ma, & Fan's (2017) results, Booking.com contained the largest number of reviews and not Expedia.

4.1 Demographics

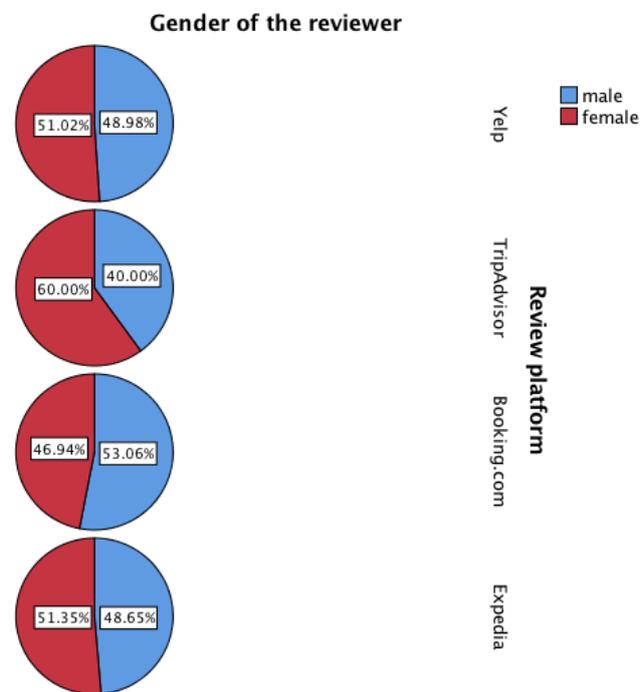


Figure 6: Gender of the reviewer

According to Figure 6, of the percentage of reviewers who provided their gender on Yelp, 51.02% are men and 48.98% are women. It is thus safe to say that the distribution is fairly equal. Only one reviewer did not provide his or her name or picture so the results here are very accurate. On TripAdvisor however, more women wrote reviews than men. On the other 2 platforms, the distribution of male and female reviewers was fairly even although men are in the majority on Booking.com and women are in the majority on Expedia. This

concludes that women may be slightly more inclined to write reviews and offer their opinion than men.

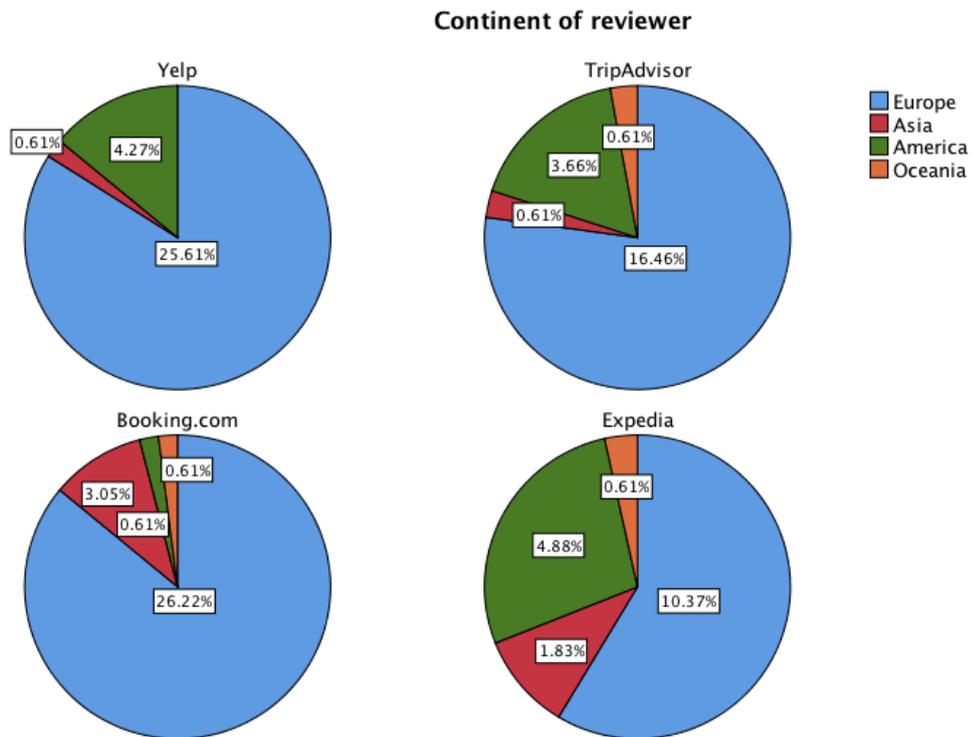


Figure 7: Continent of the reviewer

Most reviewers on all platforms are from Europe which was to be expected as Austria is in Central Europe and most guests of the 25hours hotel in Vienna are from neighboring countries. According to Figure 7, Expedia attracts the most reviewers from America, Booking.com is most popular among Asian guests and Europeans, and reviewers from Oceania are generally rare.

While Yelp and Booking.com have no missing values, 15 people on TripAdvisor and 21 from Expedia did not provide their continent of origin. Thus the results from Yelp and Booking.com are very accurate provided that the reviewers did not lie about their background. The sample size of the remaining platforms is a little smaller.

For this study, the age of the reviewer was also meant to be collected, but there were too few responses to gain meaningful results. Most reviewers do not seem to want to say how old they are when publishing a review, perhaps for security reasons or simply because of vanity.

4.2 Hypotheses Testing

The main hypothesis can be repeated as the following: ***There is a significant difference in customer satisfaction between the different review platforms.***

In order to test this hypothesis, a Kruskal-Wallis test was performed.

Kruskal-Wallis Test

Ranks			
	Review platform	N	Mean Rank
Customer satisfaction expressed in star rating	Yelp	50	95.70
	TripAdvisor	50	98.08
	Booking.com	50	108.98
	Expedia	50	99.24
	Total	200	

Test Statistics^{a,b}

	Customer satisfaction expressed in star rating
Kruskal-Wallis H	2.023
df	3
Asymp. Sig.	.568

a. Kruskal Wallis Test

b. Grouping Variable:
Review platform

Table 1: Kruskal-Wallis Test

According to Table 1, the asymptotic significance is 0.568 which is not statistically significant. Thus, there is no significant difference in customer satisfaction between the different review platforms. When examining Table 2, this is not unexpected as the mean values are very similar. In the case of Yelp and Expedia they are the same. Therefore, the answer to the research question is that customers are equally satisfied on every review platform. There are no significant differences in customer satisfaction between the 4 review platforms.

Customer satisfaction expressed in star rating

Yelp	N	Valid	50
		Missing	0
	Mean		4.44
	Median		5.00
	Mode		5
	Range		3
	Minimum		2
	Maximum		5
TripAdvisor	N	Valid	50
		Missing	0
	Mean		4.40
	Median		5.00
	Mode		5
	Range		4
	Minimum		1
	Maximum		5
Booking.com	N	Valid	50
		Missing	0
	Mean		4.64
	Median		5.00
	Mode		5
	Range		2
	Minimum		3
	Maximum		5
Expedia	N	Valid	50
		Missing	0
	Mean		4.40
	Median		5.00
	Mode		5
	Range		4
	Minimum		1
	Maximum		5

Table 2: Customer satisfaction expressed in star rating

The next hypothesis can be repeated as the following:

There is a significant difference in the perceived service quality levels identified by reviewers between the different review platforms.

Service quality is a factor that was mentioned in 153 out of 200 reviews. Most reviews that mentioned service quality in a positive manner were published on TripAdvisor with a total number of 39 positive mentions, closely followed by Booking.com with 34 positive mentions, Expedia with 26 positive mentions and Yelp with 24 positive mentions. The most negative mentions of service quality are found on Expedia with 5 negative mentions, very closely followed by Booking.com and TripAdvisor with 4 negative mentions, and finally Yelp with 3 negative mentions.

In order to test whether these differences are significant, a Kruskal-Wallis test was performed.

Kruskal-Wallis Test

Ranks			
	Review platform	N	Mean Rank
Service quality of staff	Yelp	34	70.53
	TripAdvisor	46	80.27
	Booking.com	39	81.68
	Expedia	34	73.68
	Total	153	

Test Statistics^{a,b}

	Service quality of staff
Kruskal-Wallis H	3.348
df	3
Asymp. Sig.	.341

a. Kruskal Wallis Test

b. Grouping Variable:
Review platform

Table 3: Kruskal-Wallis Test II

As can be seen in Table 3, the asymptotic significance is 0.341 which is lower than for the previous hypothesis but still not significant. Consequently, there is no significant difference in the perceived service quality levels identified by reviewers between the different review platforms.

The next hypothesis that was tested in this study can be repeated as the following:

There is a significant difference in character length of reviews between the different review platforms.

Because the data is not normally distributed, a Kruskal-Wallis test was performed in order to test the aforementioned hypothesis.

Kruskal–Wallis Test

Ranks			
	Review platform	N	Mean Rank
Character Length	Yelp	50	136.93
	TripAdvisor	50	122.19
	Booking.com	50	56.44
	Expedia	50	86.44
	Total	200	

Test Statistics^{a,b}

	Character Length
Kruskal–Wallis H	58.756
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable:
Review platform

Table 4: Kruskal-Wallis Test III

According to the Kruskal-Wallis test performed in Table 4, there is a significant difference in the character length of reviews between the different review platforms.

Because the results of the Kruskal-Wallis test were significant, 6 pairwise Mann-Whitney U tests were performed to discover which groups differ significantly from each other. The Mann-Whitney U tests show that there are significant differences in character length between Yelp and Booking.com, between Yelp and Expedia, between TripAdvisor and Booking.com, between TripAdvisor and Expedia, and between Booking.com and Expedia. Yelp and TripAdvisor are similar in character length and the Mann-Whitney U test exposed that there was no significant difference between the 2 platforms. This proves the points made by Xiang, Du, and Fan (2017) in their study when they claimed that the length of reviews were much higher on TripAdvisor and Yelp than Expedia.

The next hypothesis that was tested can be repeated as the following:

There is a significant difference in the number of helpfulness responses per review between the different review platforms.

Because the data is not normally distributed, a Kruskal-Wallis test was performed in order to test the aforementioned hypothesis.

Kruskal–Wallis Test

	Ranks		
	Review platform	N	Mean Rank
Number of helpful votes per review	Yelp	50	148.86
	TripAdvisor	50	95.30
	Booking.com	50	77.21
	Expedia	50	80.63
	Total	200	

Test Statistics^{a,b}

	Number of helpful votes per review
Kruskal-Wallis H	85.479
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable:
Review platform

Table 5: Kruskal-Wallis Test IV

The results of the Kruskal-Wallis test shown in Table 5 are significant which means that there is a significant difference in the number of helpfulness responses per review between the different platforms. Because the results were significant, 6 pairwise Mann-Whitney U tests were performed to discover which groups differ significantly from each other.

The Mann-Whitney U tests show that there are significant differences in helpfulness responses between Yelp and all other review platforms and between TripAdvisor and Expedia. This stems from the fact that Yelp has a much greater number of helpfulness responses than any other platform. In Xiang, Du, Ma, and Fan's study (2017), the researchers agreed that the number of helpfulness responses were higher on TripAdvisor and Yelp than on Expedia. In this study however, only Yelp has a higher number of helpfulness responses than the other platforms.

The next hypothesis that was tested is the following:

There is a significant difference in the overall sentiment of the review text between the different review platforms.

In order to test this hypothesis, a Kruskal-Wallis test was performed.

Kruskal-Wallis Test

		Ranks		
		Review platform	N	Mean Rank
Overall sentiment of the review	Yelp		50	104.44
	TripAdvisor		50	96.56
	Booking.com		50	108.80
	Expedia		50	92.20
	Total		200	

Test Statistics^{a,b}

		Overall sentiment of the review
Kruskal-Wallis H		6.940
df		3
Asymp. Sig.		.074

a. Kruskal Wallis Test

b. Grouping Variable:
Review platform

Table 6: Kruskal-Wallis Test V

The Kruskal-Wallis Test confirms that there are no significant differences in the overall sentiment of the review text between the different review platforms. This result was expected as there was no significant relationship between customer satisfaction and the review platform and the star rating is usually a very good predictor of the overall sentiment.

The next hypothesis tested in this study is the following:

There is a significant difference in management responses between the different review platforms.

To test this hypothesis, a Chi-Square test was performed.

**Review platform * Management response
Crosstabulation**

Count		Management response		Total
		no	yes	
Review platform	Yelp	50	0	50
	TripAdvisor	11	39	50
	Booking.com	6	44	50
	Expedia	37	13	50
Total		104	96	200

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	105.929 ^a	3	.000
Likelihood Ratio	130.250	3	.000
Linear-by-Linear Association	7.718	1	.005
N of Valid Cases	200		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 24.00.

Table 7: Chi-Square Test

The Chi-Square test shown in Table 7 expresses that there is a significant difference in management responses between the review platforms. Yelp has no management responses at all while Expedia has the highest number with 37 total responses.

The next hypothesis that was supposed to be tested is the following:

There is a significant difference in the age of the reviewer between the different booking platforms.

However, there were too few responses for age to test the aforementioned hypothesis or gain any meaningful results.

The next set of hypotheses all try to find associations between customer satisfaction and the different aspects mentioned in reviews that might influence the overall star rating.

The next hypothesis tested is the following:

There is a significant relationship between customer satisfaction and security.

In order to determine the relationship between customer satisfaction and security, a Spearman rank-order correlation was run in SPSS. However, the results of the test were inconclusive as there were too few reviewers who mentioned the security of the hotel in the review text. Only 2 reviewers remarked on security aspects of the 25hours hotel (one positive mention and one negative mention) and thus no connection between customer satisfaction and security could be found. As only 2 reviewers mentioned security, one could conclude that security is not related with customer satisfaction. However, Vienna is one of the safest cities in the world and security is regarded as given feature of any hotel in the city. Guests visiting other countries which are not as safe as Europe may mention security much more when leaving reviews.

The next hypothesis tested in this study is the following:

There is a significant relationship between customer satisfaction and location of the hotel.

To determine the relationship between customer satisfaction and the location of the hotel, a Spearman’s rank-order correlation was run. According to the results in Table 8, Spearman’s correlation coefficient is 0.089 which is not statistically significant ($p=0.279$). 150 reviewers mentioned the location of the property in the review text. While the correlation coefficient shows that there is a positive relationship between customer satisfaction and location, the relationship is not significant.

Nonparametric Correlations

			Customer satisfaction expressed in star rating	Location of the hotel
Spearman's rho	Customer satisfaction expressed in star rating	Correlation Coefficient	1.000	.089
		Sig. (2-tailed)	.	.279
		N	200	150
	Location of the hotel	Correlation Coefficient	.089	1.000
		Sig. (2-tailed)	.279	.
		N	150	150

Table 8: Spearman Correlation

The next hypothesis tested in this thesis can be repeated as the following:

There is a significant relationship between customer satisfaction and comfort.

The relationship between the aforementioned variables will also be examined by running a Spearman’s rank-order correlation. According to the results in Table 9, there is a significant positive relationship between customer satisfaction expressed in star rating and the comfort of the hotel room, bedding and sleep quality. This means that comfort is more strongly related with the satisfaction and star rating than location.

Nonparametric Correlations

Correlations

			Customer satisfaction expressed in star rating	Comfort of the hotel room, bedding and sleep quality
Spearman's rho	Customer satisfaction expressed in star rating	Correlation Coefficient	1.000	.361**
		Sig. (2-tailed)	.	.000
		N	200	111
	Comfort of the hotel room, bedding and sleep quality	Correlation Coefficient	.361**	1.000
		Sig. (2-tailed)	.000	.
		N	111	111

** . Correlation is significant at the 0.01 level (2-tailed).

Table 9: Spearman Correlation III

The next hypothesis tested in this study can be repeated as the following:

There is a significant relationship between customer satisfaction and staff service quality.

Again, to test this relationship, a Spearman's rank-order correlation was performed and the results can be viewed in Table 10. There is a strong positive relationship between customer satisfaction expressed in star rating and the service quality of the 25hours staff. Out of 200 reviews, 153 of them mentioned service quality. Thus, service quality can be seen as a very good indicator of customer satisfaction in the hotel experience.

Nonparametric Correlations

Correlations

			Customer satisfaction expressed in star rating	Service quality of staff
Spearman's rho	Customer satisfaction expressed in star rating	Correlation Coefficient	1.000	.577**
		Sig. (2-tailed)	.	.000
		N	200	153
	Service quality of staff	Correlation Coefficient	.577**	1.000
		Sig. (2-tailed)	.000	.
		N	153	153

** . Correlation is significant at the 0.01 level (2-tailed).

Table 10: Spearman Correlation III

The next hypothesis tested in this study is the following:

There is a significant relationship between customer satisfaction and room cleanliness.

Once more, a Spearman’s rank-order correlation was run. According to Table 11, there is a strong positive relationship between customer satisfaction and room cleanliness. However, only 63 people mentioned the service quality of staff in the review text.

Nonparametric Correlations

			Customer satisfaction expressed in star rating	Room Cleanliness
Spearman's rho	Customer satisfaction expressed in star rating	Correlation Coefficient	1.000	.540**
		Sig. (2-tailed)	.	.000
		N	200	63
	Room Cleanliness	Correlation Coefficient	.540**	1.000
		Sig. (2-tailed)	.000	.
		N	63	63

** . Correlation is significant at the 0.01 level (2-tailed).

Table 11: Spearman Correlation IV

The next hypothesis tested in this study is the following:

There is a significant relationship between customer satisfaction and value for money.

Yet again, a Spearman’s rank-order correlation was performed.

Nonparametric Correlations

			Customer satisfaction expressed in star rating	Value for money
Spearman's rho	Customer satisfaction expressed in star rating	Correlation Coefficient	1.000	.412**
		Sig. (2-tailed)	.	.000
		N	200	70
	Value for money	Correlation Coefficient	.412**	1.000
		Sig. (2-tailed)	.000	.
		N	70	70

** . Correlation is significant at the 0.01 level (2-tailed).

Table 12: Spearman Correlation V

Table 12 shows that there is a significant positive relationship between customer satisfaction expressed in star rating and value for money. Out of 200 reviews, 70 mentioned value for money in the text. Reviews tend to be positive when value for money is positive.

The next hypothesis tested in this study is the following:

There is a significant relationship between customer satisfaction and food & drinks quality.

Once again, a Spearman’s rank order correlation was performed. According to the results in Table 13, there is a significant positive relationship between customer satisfaction expressed in star rating and satisfaction with food & beverages the hotel offers. Consequently, when a guest mentions aspects of food and beverages in a negative way, it is related with the overall rating of the review.

Nonparametric Correlations

Correlations

			Customer satisfaction expressed in star rating	Satisfaction with food & beverages
Spearman's rho	Customer satisfaction expressed in star rating	Correlation Coefficient	1.000	.254**
		Sig. (2-tailed)	.	.003
		N	200	131
	Satisfaction with food & beverages	Correlation Coefficient	.254**	1.000
		Sig. (2-tailed)	.003	.
		N	131	131

** . Correlation is significant at the 0.01 level (2-tailed).

Table 13: Spearman Correlation VI

The last hypothesis tested in this thesis can be repeated as the following:

There is a significant difference in customer satisfaction according to the management responses

In order to determine the relationship between the aforementioned variables, a Mann-Whitney U-test was performed.

Mann-Whitney Test

Ranks

	Management response	N	Mean Rank	Sum of Ranks
Customer satisfaction expressed in star rating	no	104	95.88	9971.00
	yes	96	105.51	10129.00
	Total	200		

Test Statistics^a

	Customer satisfaction expressed in star rating
Mann-Whitney U	4511.000
Wilcoxon W	9971.000
Z	-1.353
Asymp. Sig. (2-tailed)	.176

a. Grouping Variable:
Management response

Table 14: Mann-Whitney U-Test

According to the results in Table 14, there is no significant difference between customer satisfaction expressed in star rating and management responses. Which is what most would expect as the customer writes the review and gives the rating before management is able to write a response. However, some reviewers may choose to change their rating after management replies. Additionally, the results show that management chooses to not only respond to negative reviews but also positive reviews (there is no connection between the customer satisfaction of the review and whether management responds or not). Nonetheless, the Mann-Whitney U-test proves that there is no difference between the two management strategies.

In summary, the variables that have a strong (significant) influence on customer satisfaction are comfort, staff service quality, room cleanliness, food and drinks quality, and value for money.

4.3 Additional variables

Other variables that were measured in the data set include the number of pictures uploaded with the review, the satisfaction with the spa and fitness facilities, and the revisit intention of the reviewer.

The satisfaction of the reviewer with the spa and fitness facilities could also have an effect on customer satisfaction. To test the relationship, a Spearman's rank order correlation was run.

Nonparametric Correlations

			Correlations	
			Customer satisfaction expressed in star rating	Spa and fitness facilities
Spearman's rho	Customer satisfaction expressed in star rating	Correlation Coefficient	1.000	.036
		Sig. (2-tailed)	.	.888
		N	200	18
	Spa and fitness facilities	Correlation Coefficient	.036	1.000
		Sig. (2-tailed)	.888	.

Table 15: Spearman Correlation VII

The results in Table 15 show that the spa and fitness facilities are not significantly related with customer satisfaction expressed in star rating. Only 18 reviewers mentioned the spa and fitness facilities in the hotel and hence one can assume that they are a nice addition but not very important to the guests of the 25hours hotel.

Number of pictures

Yelp	N	Valid	50
		Missing	0
	Mean		1.80
	Median		.00
	Std. Deviation		2.718
	Range		10
	Minimum		0
	Maximum		10
TripAdvisor	N	Valid	50
		Missing	0
	Mean		.72
	Median		.00
	Std. Deviation		1.400
	Range		4
	Minimum		0
	Maximum		4
Booking.com	N	Valid	50
		Missing	0
	Mean		.32
	Median		.00
	Std. Deviation		1.301
	Range		8
	Minimum		0
	Maximum		8
Expedia	N	Valid	50
		Missing	0
	Mean		.24
	Median		.00
	Std. Deviation		.938
	Range		6
	Minimum		0
	Maximum		6

Table 16: Pictures added by reviewers

According to Table 16, the platform with the highest mean for the number of pictures added is Yelp with a value of 1.8, followed by TripAdvisor with 0.72, Booking.com with 0.32, and Expedia with 0.24. At this point it would be

interesting to discover if the differences between the platforms are significant by performing a Kruskal-Wallis test.

Kruskal-Wallis Test

Ranks			
	Review platform	N	Mean Rank
Number of pictures	Yelp	50	125.11
	TripAdvisor	50	102.42
	Booking.com	50	86.70
	Expedia	50	87.77
	Total	200	

Test Statistics^{a,b}

	Number of pictures
Kruskal-Wallis H	27.339
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable:
Review platform

Table 17: Kruskal-Wallis Test VI

As the results shown in Table 17 are significant at the 0.05 level, there is a significant difference in number of pictures uploaded by the reviewer between the different review platforms. Because the results were significant, 6 pairwise Mann-Whitney U tests were performed to discover which groups differ significantly from each other.

According to the Mann-Whitney U tests, there are significant differences between Yelp and Booking.com, and between Yelp and Expedia. Most pictures from guests can be found on Yelp.

The intention of the reviewer to revisit the hotel is only slightly different on each platform.

Intention of reviewer to revisit

Review platform			Frequency	Percent	Valid Percent	Cumulative Percent
Yelp	Valid	yes	40	80.0	80.0	80.0
		no	4	8.0	8.0	88.0
		maybe	6	12.0	12.0	100.0
		Total	50	100.0	100.0	
TripAdvisor	Valid	yes	37	74.0	74.0	74.0
		no	8	16.0	16.0	90.0
		maybe	5	10.0	10.0	100.0
		Total	50	100.0	100.0	
Booking.com	Valid	yes	39	78.0	78.0	78.0
		no	1	2.0	2.0	80.0
		maybe	10	20.0	20.0	100.0
		Total	50	100.0	100.0	
Expedia	Valid	yes	36	72.0	72.0	72.0
		no	7	14.0	14.0	86.0
		maybe	7	14.0	14.0	100.0
		Total	50	100.0	100.0	

Table 18: Intention of the reviewer to revisit

According to Table 18, most reviewers who could see themselves revisiting the 25hours hotel in Vienna published reviews on Yelp. On the other hand, the greatest number of hotel guests who would not return to the hotel wrote reviews about their stay on TripAdvisor.

5 Managerial Implications

Because there is no significant relationship between customer satisfaction and the review platform, there is no single platform hotel managers should focus on. Guests are equally satisfied with their hotel experience on each review platform and managers should be aware of all of the different websites guests use to write about their stay.

Of all variables that contribute to customer satisfaction, the comfort of the room including bedding and sleep quality, service quality of staff, room cleanliness, the quality of food and drinks, and value for money have the most powerful relationship with it and thus the strongest effect on star rating in reviews. Therefore, hotels trying to improve their ratings online and customer satisfaction of their guests should pay great attention to these factors and how to enhance them. However, other factors of a guest's experience at the hotel that do not have a significant relationship with customer satisfaction should not be overlooked.

Management of the 25hours hotel seems to take advantage of the option to reply to guest reviews on TripAdvisor, Booking.com, and Expedia. However, they have overlooked Yelp as a tool to facilitate service recovery. While there may be more reviews on Yelp written by guests of the food and beverage facilities, a guest who is dissatisfied with the restaurant or rooftop bar will most likely not be returning to the hotel to book a room. Thus, it is also important to reply to guest reviews on Yelp.

Most reviewers mentioning comfort in a negative way declared that their sleep was disturbed by the guests of the rooftop bar and the loud music at night. This issue occurred with guests sleeping on higher floors, closer to the bar. Management could consider informing guests about possible disturbances before booking a room on a higher floor or closing the rooftop bar earlier during the week. Another factor mentioned in reviews where the overall sentiment was negative or neutral is the comfort of the bedding and pillows. Several reviewers were dissatisfied with the flatness of the pillows and declared that the mattress was uncomfortably hard. However, the 25hours hotel has already taken steps to solve this issue by replacing all mattresses, pillows and bedding in the rooms.

Some also mentioned that the temperature of the room was too high. However, the temperature can be easily adjusted in the room itself. One suggestion might be to add a sign or let the guest know when they check in that they themselves are able to change the heat.

A few reviewers were dissatisfied with the compactness of the room. However, there is nothing the hotel can do to change the size of the economy rooms but to upload more pictures that realistically depict the size of the room when booking online. Management replied to these comments by urging the guests to book a room in a higher category, e.g. one of their suites. However, if a guest had the means to book a bigger room, they would have most likely done it in the first place.

Two other reviewers mentioned that there were no tea and coffee facilities in the room which caused them to leave a slightly lower rating. Again, management replied by revealing that the higher-class rooms had these facilities and that the guests should consider booking one on their next visit. However, the 25hours hotel should seriously consider adding at least a water kettle with tea bags and coffee as even most budget hotels offer this. The lack of tea and coffee facilities had, in the opinion of the reviewers, a negative effect on value for money as a room that costs more than 100 Euros per night should contain these amenities.

The lack of room service was also mentioned in some reviews as a negative aspect of the hotel. Guests can however order food from the 25hours restaurant downstairs via telephone and get a discount on all items. The food is then prepared, and the guest can come pick it up when it is ready. In the future, management could consider letting an employee take it up to the room for the guest. Another minor annoyance with guests was the lack of storage space and the open closet. However, this is a design feature of the hotel and

part of the overall concept. Nonetheless, at the next remodel, adding more options to hang clothes could be considered.

Overall cleanliness was mentioned in a negative manner a few times and the absence of clean towels provided by housekeeping. As cleanliness has a significant effect on customer satisfaction, management should focus on training housekeeping staff to reduce the number of guest complaints. Occasionally, some guests or housekeeping employees might not understand that when a towel is left on the floor, it means that it should be replaced with a clean one. Certain guests may be used to having towels replaced every day. However, most hotels these days try to be more environmentally conscious by not replacing and washing towels which have been used only once before. To solve the issue, signs in the room should make clear how and when towels will be replaced.

6 Conclusion

The aim of this thesis was to compare and contrast 4 different review platforms: TripAdvisor, Booking.com, Expedia.com and Yelp. According to previous research in the field, there is no doubt about the fact that reviews are important in today's consumer society and important insights can be found by analyzing them.

The original research question of this thesis was defined as the following: On which review platform are consumers most satisfied? The answer to this question is that consumers are equally satisfied on each of the four platforms included in this study. As a result, there is no single platform consumers turn to when they are particularly satisfied with their experience or extremely dissatisfied. The main hypothesis was defined as the following:

There is a significant difference in customer satisfaction according to the review platform.

This hypothesis cannot be proven according to the Kruskal-Wallis test that was performed. Thus, there is no significant difference in customer satisfaction according to the review platform.

However, there are still differences between the different platforms in terms of the different variables that were measured in this thesis. There turned out to be no significant difference in the perceived service quality levels identified by reviewers between the different review platforms. Similarly, there turned out to be no significant differences in the overall sentiment of the review text between the different review platforms. However, there were significant differences in the character length between the review platforms and reviews tend to be longer on Yelp and TripAdvisor but shorter on Booking.com and Expedia. Significant differences in the number of helpfulness responses were also found between Yelp and all other review platforms as Yelp has the highest number of helpfulness responses overall. A Chi-Square test that was performed revealed that there is a significant difference in management responses between the review platforms. Yelp has no management responses while Expedia has the highest number with 37 total responses. No significant differences between the age of the reviewer could be found as there weren't enough responses to run any sort of test. There was a similar issue with the security variable as the test that was run to determine the relationship between customer satisfaction and security yielded inconclusive results because there were not enough responses recorded in the data set.

The ultimate goal was to detect whether there are differences between the satisfaction levels of customers depending on the platform the review was published on and to find links between satisfaction levels and other review characteristics. While there are no significant differences in customer

satisfaction between the platforms, some factors were found to have a significant influence on customer satisfaction. Other factors that, according to previous research, have an influence on customer satisfaction (and which were also analyzed in this study) are the location of the hotel, the comfort including sleep quality and bedding, the perceived service quality, the room cleanliness, the value for money, the perceived quality of food and drinks, and the number of management responses. The factors of a guest's experience that turned out to have a significant positive relationship with customer satisfaction are the comfort, perceived service quality of staff, room cleanliness, perceived quality of food and drinks, and value for money. Management should thus pay great attention to improving these factors if their aim is to satisfy guests. The other factors that were analyzed including the location of the hotel and the number of management responses also had a positive relationship with customer satisfaction, but the relationship was not significant. Consequently they are also important, but not as important as the previously mentioned factors.

All in all, women are more likely to write reviews than men as they were in the majority in 3 out of 4 platforms. Most reviewers on all platforms were from Europe while Expedia attracted most people from America, Booking.com was most popular among Asians and Europeans, and reviewers from Oceania were rare. There were too few responses for age and thus no meaningful results could be gained for that variable.

There turned out to be no significant relationship between customer satisfaction and the satisfaction with the spa and fitness facilities. Additionally, it could be discovered that there is a significant difference in the number of pictures between the different review platforms and the highest number of pictures uploaded with reviews can be found on Yelp. Most guests who would not return to TripAdvisor wrote their reviews on TripAdvisor and those who would, published their ratings on Yelp.

Managers and employees of the 25hours hotel should consider using Yelp to reply to consumers as they have not taken advantage of the platform to respond to either positive or negative reviews. Furthermore, hotel management professionals should pay special attention to the factors mentioned above that have a significant positive relationship with customer satisfaction as these can improve the overall star rating of reviews.

7 Limitations

The sample size could be considered too small to gain reliable results. While 200 results were collected, not all of them mentioned all of the variables that were collected. For example, only 2 reviewers mentioned the security of the hotel in the review text. If variables would have been collected from 200 reviews per platform (800 reviews in total), perhaps more reviewers would have mentioned security and there would have been enough data to test the relationship between customer satisfaction and security.

All reviews were evaluated in a subjective manner. Most variables that were extracted from the reviews were based on the author of this thesis reading the review text and deciding if the reviewer mentioned aspects of their experience in a negative, positive or neutral way. However, each person has their own subjective opinion on the sentiment of a text and it is very likely that if another person would have performed the data collection, the results would not have been the same. Nonetheless, a single person was responsible for collecting variables and so the data can at least be considered to be consistent.

Most reviews on Yelp were published by reviewers who did not, in fact, stay at the hotel as guests but only visited the rooftop bar at the 25hours hotel. Furthermore, the needs and wants of hotel guests are different compared to the needs and wants of guests who only visit the rooftop bar. This may have

led to some inaccuracies in the results. Moreover, Yelp did not contain enough reviews written in English to be able to collect 50 of them. Consequently, 21 reviews written in English were collected and 29 German reviews were collected. It was not tested whether the sentiment of German reviews was different compared to the sentiment of English reviews. The variables collected from German reviews may thus have had an effect on the results of this study.

Reviews can generally not be considered one hundred percent reliable as they don't take into account the mood, subjectivity or general intelligence of the reviewer. It is a well-known fact that people are much more likely to tell others about a negative experience than a positive one. Furthermore, some reviewers tend to embellish and exaggerate when trying to convince others of their opinion online. In addition, there is reason to believe that so-called "fake" reviews are much more common than previously thought. These fake reviews are almost impossible to spot, and some may even be part of the data collection in this study.

As only reviews from the 25hours hotel at the Museumsquartier in Vienna were analyzed, the results from this study are difficult to generalize. If reviews from other hotels would have been analyzed, this study may have generated entirely different results.

Lastly, some mistakes may have been made in the data collection by the author of this study by accidentally overlooking aspects of customer satisfaction that were in fact mentioned in the text or giving the wrong rating. E.g., when the reviewer writes that the service quality was bad the author may have unintentionally given service quality a positive rating of 1 when it should have been -1.

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