

Master Thesis

**Online Hotel Reviews:  
The Impact of Polarity of Opinions on the Perception of Trust**

**Suzan Bordewijk**

University of Twente  
MSc of Business Administration

**Graduation Committee Members**

1<sup>st</sup> supervisor: Dr. A. Leszkiewicz  
2<sup>nd</sup> supervisor: Dr. E. Constantinides

**June 21<sup>st</sup> , 2022**

## **ABSTRACT,**

**Purpose** – Online reviews have become the central point in a consumers search for the best product/service. Consumers as well as companies are influenced greatly, as both good and bad evaluations are posted online for everyone to see. Preceding literature has investigated online reviews in detail, but a gap remains as the influence of opinions polarity on consumers' trust has not yet been researched in detail. This paper will aim to create a greater level of understanding, specifically aiming at the hotel sector.

**Methodology** – A survey study was designed to examine the relation between opinion polarity in hotel reviews and consumers' trust. Moreover, the variable valence was included to examine whether opinion polarity has a different influence on consumers when the extremity of the review is controlled. Respondents were asked to rate their level of trust based on 9 different hotel reviews. A total of 104 valid responses were analyzed quantitatively with the program SPSS Statistics 25.

**Results** – Results show that perceived trust is indeed higher for hotel reviews that are positively valenced. We can also see that trust is not influenced by opinion polarity when keeping valence constant. However, when we look at reviews with low valence we can see that perceived trust is higher for polar reviews, meaning that polarity of opinions does influence the perceived trust of consumers when a review is negatively valenced. Polarity of opinions thus does have some influence on consumers' trust, but regardless consumers seem to be focused more on the valence of a review.

**Value** – As little is known about opinion polarity, this paper tried to add to existing literature by examining its relation with consumers' trust. We have found that hotels competing in the lower regions of star ratings (i.e. 1 or 2 stars) benefit from polar distributions, whereas hotels competing in the higher regions (i.e. 4 or 5 stars) benefit from non-polar distributions. Depending on one's average star rating a different approach should thus be taken to be able to stand out from its competition.

## **Keywords**

Online Consumer Reviews, Polarity of Opinions, Perceived Trust, User Generated Content, Consumer Management, Hotel Sector, Travel, Digital Marketing

# TABLE OF CONTENTS

1. INTRODUCTION .....	4
2. THEORETICAL FRAMEWORK .....	6
2.1 Literature Review .....	6
2.1.1 Online Reviews and their Implications .....	6
2.1.2 Polarity of Opinions .....	10
2.1.3 The Role of Online Trust .....	12
2.2 Conceptual Model .....	15
3. RESEARCH DESIGN.....	16
3.1 Data Sample .....	16
3.2 Dependent Variable.....	16
3.3 Independent Variables .....	16
3.4 Control Variables .....	17
3.5 Estimation Techniques .....	17
3.6 Explanation of Variables .....	18
4. DATA ANALYSIS AND RESULTS.....	19
4.1 Reliability Testing and Factor Analysis.....	19
4.2 Descriptive Statistics.....	19
4.3 Hypotheses Testing .....	20
4.3.1 Test Assumptions .....	20
4.3.2 Testing the Impact of Valence on Trust .....	21
4.3.3 Testing the Impact of Opinion Polarity on Trust: No Valence, Low Valence, and Moderate Valence Scenario .....	22
4.3.4 Testing the Impact of Opinion Polarity on Trust: High Valence Scenario.....	23
5. CONCLUSIONS AND CONTRIBUTIONS .....	24
5.1 Conclusions .....	24
5.2 Contribution to Theory and Practice .....	26
6. APPENDICES .....	27
6.1 Appendix 1 - Survey.....	27
6.2 Appendix 2 – Frequencies of Nationality and Current Place of Residence .....	30
7. REFERENCES .....	31

# 1. INTRODUCTION

Imagine planning a trip to a city that you have never been to. An exciting journey for which you have to make numerous decisions that will influence the success rate of your trip. One of the most important choices though is to decide on the place of your staying. How do you go about finding the perfect accommodation? In today's digital age most individuals will start their journey on the world wide web, as it is the biggest information source available with tons of research data.

In 2004 the world wide web transformed into an interactive platform (i.e. Web 2.0), making it possible for consumers to interact with each other from their own homes (IMU Redactie, n.d.). Consumers can now help determine the content that is available on the internet (i.e. User Generated Content) instead of only being able to read and download the content. The dependency on the world wide web has proliferated, as internet users can choose to create and share their content, even with complete strangers (Sigala, 2011; Elwalda, 2016; Sparks, 2011). For consumers online reviews have become an integral part of the decision-making process, as word-of-mouth not only happens face-to-face nowadays, but also through User Generated Content (Ye, et al., 2011; Melián-González, 2013). It has influenced the way companies go about engaging with consumers massively, as sharing one's opinions with tons of people has never been so easy. However, as a consumer searching for the best service this heap of information can be quite overwhelming. Moreover, studies have oftentimes found that positive reviews are abundant in comparison with reviews on the negative side and in the midrange, which shows a clear indication of polarity of online reviews (Schoenmueller, et al., 2020). Thus, taken together the amount of information that is available on the world wide web and the predominant presence of positive reviews, how do you decide which reviews to trust (Melián-González, et al., 2013). In other words, what is the impact of online reviews and its polarity - in particular in the hotel sector - on the perception of trust?

Preceding literature has investigated online reviews in detail, although oftentimes it is focused on the contents of the review instead of its effect on the consumer. Research into the polarity of reviews offers a great example, as it has been researched extensively through sentiment analysis; making it possible for researchers to predict and distinguish between positive and negative word choices in reviews. Nonetheless, effects of polarity have been put aside mostly or have not been the focal point of the research; rather it was a subsidiary detail. One of the few papers that shortly addresses the effects of polarity on consumers is the paper by Ye, et al. (2011). It aimed to investigate the impact of online reviews on online sales, and also found that a higher variance of polarity in reviews does not influence online bookings, suggesting that consumers may find the overall opinion more important in spite of very different reviews. This may suggest that trust plays a major role in the decision-making stage. Furthermore, the paper by Schoenmueller, et al. (2020) creates a deeper understanding of the concept of polarity itself, as it aimed to investigate the prevalence, drivers, and implications of polarity. Results show that polarity self-selection is real, meaning that consumers with extreme evaluations have a higher tendency to write a review (Schoenmueller, et al., 2020; Hu, et al., 2009). This serves as an important driver of polarity of review distributions. Along with this polarity it also causes reduced informativeness of online reviews. Notwithstanding preceding research, the gap between opinion polarity and trust remains.

As foregoing research has not yet investigated the role of opinions polarity in regards to its effect on consumers - particularly on that of consumers' trust - this paper will aim to create a greater level of understanding, specifically for that of the hotel sector. As reviews are generated by consumers themselves it is a source of information that is independent of hotels, and can thus serve as an important driver in the decision-making process. Moreover, researching the perception of trust in relation to reviews can give an important insight for hotels, as it can serve as an indirect indication of how to increase trust. As Sigala (2011) mentions, web 2.0 technologies (i.e. User Generated Content and online social networks) have a huge impact on the decision-making process of consumers, and need to be taken into account by companies in order to be able to adapt and evolve accordingly. Reviews, when negative, can have adverse effects, though they can also tell a company what needs to be improved. Increasing standards based on negative remarks can improve future services, and can thus possibly increase the amount of positive remarks in the long term. Perhaps it can even positively influence the perception of trust. On that account, this study will aim to build on and extend the findings of previous research that document the effects of opinions polarity on consumers and its relation with trust, as it is currently believed to be an underresearched topic. Although existing literature has documented the presence of opinions polarity and the imbalance in online reviews, it has not investigated its possible effects on trust. Therefore, the objective of this paper is to answer the following research question:

*What is the impact of polarity of opinions on the perception of trust with regard to online hotel reviews?*

In the following section, we develop a theoretical framework to guide our research. Subsequently, we formulate our hypotheses together with the conceptual model. After presenting our empirical data and results, we conclude with a discussion of the implications.

## 2. THEORETICAL FRAMEWORK

### 2.1 Literature Review

#### 2.1.1 *Online Reviews and their Implications*

User Generated Content as well as online social networks have provided the consumer with a very powerful tool: online reviews (Sigala, 2011; Ye, et al., 2011; Gretzel & Yoo, 2008). These can be defined as evaluations of a product or service generated by fellow consumers and can be posted on a company's website or third party websites (Mudambi & Schuff, 2010; Elwalda, et al., 2016; Shaheen, et al., 2019). Important factors for consumers in choosing their hotel are recommendations of friends and family (i.e. word-of-mouth) (Ögut & Tas, 2012; Ye, et al., 2011). However, while word-of-mouth was only possible within people's social networks, online reviews can reach a much wider audience. The effect of electronic word-of-mouth does not vanish over time and distance, and can thus be more durable and detailed as it includes opinions of multiple persons (Ögut & Tas, 2012; Shaheen, et al., 2019). Furthermore, online reviews occur in different forms, such as numerical star ratings (generally ranging from 1 to 5 stars) and consumer ratings (i.e. open-ended comments). The former can be seen as an efficiency tool that can be easily accessed by a consumer when faced with a bulk of information and the latter shows a consumers personal opinion in text form (Sparks & Browning, 2011; Mudambi & Schuff, 2010; Ögut & Taş, 2012).

Online reviews have given internet users the possibility to share their opinion, being good or bad, with the whole world (Sigala, 2011; Melián-González, et al., 2013; Elwalda, et al., 2016; Ögut & Tas, 2012; Shaheen, et al., 2019; Ye, et al., 2011; Schoenmueller, et al., 2020). This has not only changed the way companies adapt and evolve their e-business models and practices, but it also changed the way consumers go about gaining information about products and services (Sigala, 2011; Ye, et al., 2011). Since online reviews have progressively become more available for consumers for a broad range of products and services, it has become a valuable part of their decision-making process (Mudambi & Schuff, 2010; Elwalda, et al., 2016; Shaheen, et al., 2019; Ye, et al., 2011; Schoenmueller, et al., 2020). This includes the stages of need recognition, information search, evaluation of alternatives, purchase decision, purchase, and even post-purchase evaluation (Mudambi & Schuff, 2010; Jansson-Boyd, 2010). Once a need is recognized online reviews can help a consumer with gaining helpful information and make evaluations of alternative products easier. The economics of information particularly addresses an interesting role of reviews in the decision-making process (Mudambi & Schuff, 2010). The aim of potential consumers is to find the product or service that best fits their needs; it needs to satisfy their quality requirements (Ögut & Tas, 2012). However, consumers are often forced to make decisions with limited or asymmetric information, as they have access to a finite amount of information on seller quality (i.e. it is unknown who the seller or hotel owner is), product quality (i.e. it is only possible to evaluate the performance after ones stay at a hotel), and alternative products (Mudambi & Schuff, 2010; Stigler, 1961; Ögut & Taş, 2012). Simultaneously, consumers also know that collecting all accessible information is time consuming and costly; trade-offs exist between continuing the search and its perceived costs, or rather between effort and accuracy. Consumers thus mostly follow a decision-making process that looks to eliminate as much uncertainty as possible, while also taking into account

that purchase uncertainty will never completely vanish (Mudambi & Schuff, 2010; Shaheen, et al., 2019). This is especially critical in the tourism industry, where information is key.

To solve these problems of information uncertainty signalling mechanisms can be used, such as online reviews (Ögut & Tas, 2012; Langan, et al., 2017). The theory by Spence (1973) explains that “the better-informed party sends a signal to the less-informed party to communicate its true characteristics in a credible way”. This signal can be interpreted as an indication of higher quality and thus influences ones purchasing behaviour. Furthermore, higher ratings can indicate trustworthiness of the seller, as it shows that the expectations of a former consumer were met. In other words, the seller provides all services that are presented online and has satisfied the needs of the former consumer (Ögut & Tas, 2012; Shaheen, et al., 2019). Hence, higher ratings signal to a potential consumer that that hotel is more reputable. Hotels with higher ratings are therefore preferred over hotels with lower ratings. To illustrate, an industry study has reported that 87% of consumers are influenced significantly on their purchase decision by reviews that are written by fellow consumers (Comscore & The Kelsey Group, 2007; Ögut & Tas, 2012). A further 40% of consumers who consulted a review for a hotel have subsequently stayed at that hotel. Online reviews are thus able to reduce information asymmetry, as it can provide the consumer with credible information for better decision-making (Shaheen, et al., 2019).

This is especially helpful for hotels, as these are considered to be an “experience good”, meaning that the full product or full experience can only be assessed after it has been purchased (Sigala, 2011; Ye, et al., 2011). Its perceived quality relies mostly on subjective attributes and is thus more susceptible to personal taste. Hotels try to minimize this by providing the consumer with pre-purchase information, such as virtual experiences through pictures and detailed descriptions; that is providing the consumer with a good first impression. Online reviews have come to serve as a quality measure that show the subjective quality dimensions of a product or service, such as cleanliness, comfort, facilities, and friendliness of staff in the case of a hotel (Ögut & Tas, 2012). Reviews have shown to play a major role in the decision-making process, and contribute even more when the information quality is good, as it can help reduce uncertainty (Sigala, 2011). Accordingly, the main reason for consumers to read reviews is to make a better decision within a smaller time frame (Mudambi & Schuff, 2010; Dabholkar, 2006). To support consumers in their search, comparison websites and numerical ratings (e.g. star ratings) are at hand to reduce effort and to simplify the decision process. Consumer review websites (e.g. TripAdvisor) are such an example and are regarded as major travel intermediaries (Sigala, 2011). Online social networks, such as Instagram and Facebook, are also regularly used as promotion, support, and advice platforms. Studies have shown that 84% of consumers are affected in their hotel choice by what they see on online travel websites, and prioritize reviews and pictures over any other features of hotels (Ögut & Tas, 2012; Ye, et al., 2011).

Online consumer reviews – regardless of them being positively or negatively valanced - have proven to be beneficial for companies, as studies have found that it can positively influence sales (Ögut & Tas, 2012; Mudambi & Schuff, 2010; Shaheen, et al., 2019; Ye, et al., 2011). An increase of 1% in ratings for example, can contribute to over 2% of sales per room in Paris and London, and an increase of 10% in review ratings improves bookings with 5% in China (Ögut & Tas, 2012; Ye, et al., 2011). Furthermore, reviews have shown to boost the perception of

usefulness and social presence of a website when consumer reviews are present (Mudambi & Schuff, 2010; Shaheen, et al., 2019; Ye, et al., 2011; Kumar & Benbasat, 2006; Berger, et al., 2010). It has the power to attract website visits, as well as increase the length of the visit (“stickiness”) (Mudambi & Schuff, 2010). Especially for weak brands or companies that are not that well-known, negatively valenced reviews can generate attention, and thus increase sales (Berger, et al., 2010; Ho-Dac, et al., 2013). Moreover, as online reviews have become increasingly available companies have started to incentivize consumers for writing valuable reviews and have been providing consumers with elaborate guidelines to up their game. To improve the helpfulness of reviews, which has been the key method of measuring how consumers evaluate reviews, companies like Amazon and TripAdvisor have added additional features on their website, like “43 people found this helpful” and “29 helpful votes”, in order to be able to place the most helpful reviews at the top of the page (Mudambi & Schuff, 2010; Shaheen, et al., 2019). Online websites thus not only serve as sales channels anymore, but also help potential consumers learn about the experiences of past consumers of a specific hotel (Ögut & Tas, 2012).

Companies can thus benefit a lot through online reviews, and consumers in turn can make a more grounded decision based on the experiences of others (Mudambi & Schuff, 2010). Reviews become helpful for consumers when it facilitates their decision making process; in other words it becomes helpful when the perceived value of a review is adequate. Websites with more helpful reviews thus offer a substantially greater potential value to consumers. Review extremity, review depth, and product type are found to affect the perceived helpfulness of reviews (Mudambi & Schuff, 2010). Review extremity (also known as review valence) tells a consumer whether a review is positive, neutral, or negative, and thus indicates how extreme or moderate a review is. Star ratings can be used to represent this extremity, where 1 star is an extremely low rating depicting a very negative view of a product or service opposed to 5 stars which indicates a very positive view. On the other hand a rating of 3 stars can indicate a neutral view where the consumer is truly indifferent, but it can also be a summation of positive and negative experiences that are cancelled out by each other and thus leaves a moderate review. Previous research indicates that moderate reviews are more helpful in comparison to extreme reviews, as it usually includes both positive and negative remarks and therefore increases source credibility and brand attitude (Mudambi & Schuff, 2010). Nonetheless, this only works for consumers who started their search with either a neutral or negative attitude. In other cases one-sided positive reviews are more effective. In addition, positive reviews have the power to generate positive attitudes and can increase purchase intentions, whereas negative reviews have the opposite effect and can even cause serious harm to a company (Melián-González, et al., 2013; Ye, et al., 2011; Vermeulen & Seegers, 2009). Single cases of negativity do not bias a consumer as much, but reoccurrence is highly damaging (Melián-González, et al., 2013). Consumers do pay greater attention to negative comments in comparison to positive ones though, in particular when the information is recent. This is especially the case in the hotel sector. In addition, research has shown that electronic word-of-mouth (e.g. online reviews) is more powerful than communication through marketing campaigns, causing many hotels to have a passive attitude toward online comments (Melián-González, et al., 2013; Shaheen, et al., 2019).



Product type also plays a moderating role between review extremity and helpfulness, and between review depth and helpfulness (Mudambi & Schuff, 2010). Consumers are more sceptical of experience goods/services before a purchase since the reviews are based more on subjective opinions (Mudambi & Schuff, 2010; Ford, et al., 1990). Consumers are somewhat sceptical towards extreme reviews in case the claims cannot easily be proven to be true. Moderate ratings represent a more objective view, and consumers are therefore more open to these when it comes to experience goods/services. This can also be seen on consumer review websites, where the majority of reviews have an extreme view and moderate ratings are a minority. This in turn can also be explained by the subjective nature of experience goods, and implies that objective remarks and moderate reviews are more helpful for experience goods compared to extremely positive and extremely negative reviews. Positive reviews thus have a greater positive effect for search goods in comparison to experience goods. However, this difference becomes obsolete when negative reviews are also present (Langan, et al., 2017).

Moreover, review depth has a greater positive effect on the helpfulness of a review, especially through open-ended comments. It offers additional information that can assist the consumer in their decision-making process, as it can boost their confidence in the decision. Greater amounts of reviews can further reduce quality uncertainty. Nonetheless, review depth has a greater positive effect for search goods (defined as a product or service that is easily evaluated before purchase) in comparison to experience goods, as additional information for search goods mostly consists of factual and objective remarks. For experience goods though, social presence plays an important role, as brand choice reflects a consumer's taste and values. Accordingly, the more reviews there are available for a certain experience good, the more likely it is that the subjective remarks in those reviews can be related to personal taste. Online reviews remain a key factor and have shown to have a significant influence for experience goods, as quality is uncertain before purchase and consumers have to use (electronic) word-of-mouth to reason their choices (Ye, et al., 2011).

As previous studies have indicated, online reviews have become increasingly important for the tourism sector (Melián-González, et al., 2013; Elwalda, et al., 2016; Ye, et al., 2011). Although many studies have investigated the effects of the content of reviews, valence (i.e. positive versus negative) and volume (i.e. number of reviews) are equally as important. For a starting business, reviews tend to be rather low. However, as the number (i.e. volume) of reviews increases, this negative effect shrinks and the valence becomes more proportional. Research by Li & Hitt (2008) even suggests that early reviewers are more likely to be great supporters or experts and are thus more likely to rate a product at the extreme. It is thus reasonable for hotels to encourage consumers to write reviews, especially since research has shown that reviews in fact do play an important role in the decision-making process. Besides, the motivation for consumers to write reviews mostly comes from extremely good or extremely bad experiences. Consumers who are neither extremely content nor extremely discontent are thus less represented. Consequently, the importance of reviews is high in the hotel sector, considering that 75% of travellers see reviews as a source of information when planning their trips and online opinions are found to be one of the most important variables in accommodation choice (Melián-González, et al., 2013; Ye, et al., 2011; Gretzel & Yoo, 2008). Moreover, research has found that purchase intention increases when the quality and quantity of online reviews increase and that the valence

positively influences sales of hotels in a direct manner (Elwalda, et al., 2016; Ye, et al., 2011). This implies that a positive sentiment of reviews on a particular website positively increases the number of sales on that website (Ye, et al., 2011).

To summarize, consumers look for certain cues when assessing reviews during their decision-making process. The helpfulness of a review depends on the type of good they are dealing with (e.g. experience versus search), the extremity which can be assessed through star ratings, and the depth of the review. For the hotel sector, being an experience good, it means that online reviews are often based on subjective opinions, which makes it more difficult for consumers to judge. Consumers usually look for similarities between the review and their personal taste and values, as this can mean that they will have a similar experience as the reviewer. In addition, valence and volume are important to take into account as well, as quantity and quality positively influence hotel bookings.

Accordingly, the following hypotheses are proposed.

*H1.* Perceived trust of online reviews is higher for hotel reviews that are positively valenced compared to those that are negatively valenced.

*H1a.* A review with low valence has a lower perceived trust compared to a review with moderate valence.

*H1b.* A review with moderate valence has a lower perceived trust compared to a review with high valence.

### ***2.1.2 Polarity of Opinions***

The emergence of online reviews has its good sides. However, it also has its downsides, as polarity of opinions in online reviews is widely acknowledged (Schoenmueller, et al., 2020). Polarity can be defined as “the proportion of reviews that are at the extremes of the scale” (Schoenmueller, et al., 2020, p.853). It thus indicates how extreme reviews are distributed. The paper by Schoenmueller, et al. (2020) provides a measure of opinions polarity:

$$polarity = \frac{\text{number (1 and 5 star ratings)}}{\text{number of ratings}}.$$

This equation can be used for a 5-point scale as follows: a polar distribution is implied with a polarity measure above 40%, whereas a non-polar distribution is implied below 40% (Schoenmueller, et al., 2020).

The majority of reviews lie at the positive side of the rating scale (i.e. positive imbalance), and only a few reviews show negative or moderate opinions (Schoenmueller, et al., 2020). Most reviews thus show a high degree of polarity in the positive direction. Compared to offline word-of-mouth, writing online reviews takes more effort and consumers are therefore less likely to share their average experiences. This can partially be explained by polarity self-selection, as consumers with extreme experiences are more likely to write down their evaluations (Hu, et al., 2009). This serves as an important driver for polarity in review distributions. Although it has been widely recognized, polarity in review distributions is unexpected, as online reviews represent the preferences and experiences of a diversified group of consumers, which often shows a normal distribution (Hu, et al., 2009). Consumers may thus be unexpectedly prone to a lack of information, as the majority of reviews are positive and might not represent the true

quality of a product or service. Results of the study by Schoenmueller, et al. (2020) show that 92% of consumers react to this polar distribution, as they will only proceed to purchase from a local company if it has an average star rating of no less than 4. The average star ratings thus acts as a threshold, and not as a continuous measurement (Schoenmueller, et al., 2020). Consequently, the actual preferences of consumers and the experiences communicated through reviews might be unbalanced, which can lead to a possible decrease in helpfulness of reviews. Hence, polarity self-selection in combination with polarity of review distributions can contribute to less informative – and consequently to less helpful - reviews.

Research shows that online reviews on travel platforms are indeed polar, with a majority of reviews having 5 stars (Schoenmueller, et al., 2020). It does vary across platforms though, as platforms that encourage consumers to write reviews exhibit a lower polarity. Especially consumers that review a high number of products in relation to their purchased products (i.e. frequent reviewers) are less subjective to self-selection and therefore show a less polar and more balanced distribution in their reviews; they are less selective in their choice of products to review compared to less frequent reviewers. This is further proven in an experiment by Schoenmueller, et al. (2020), where one half of individuals was forced to write a review about their last experience and the other half had the possibility to choose which product to review. Individuals who had to review their last experience showed a non-polar distribution, eliminating polarity self-selection. The individuals who had the freedom to choose however, showed a polar distribution in their reviews. In addition, travel platforms often have a business model that aims to sell products and services or that serves as a fee receiving platform (e.g. Airbnb, Booking.com, Expedia, TripAdvisor) (Schoenmueller, et al., 2020). The review distribution of platforms with such a business model are more polar in comparison with information platforms, which may suggest that more commercial platforms have a higher motivation to display positive reviews as it can attract potential consumers. Furthermore, platforms that use a 5-point scale are more subjective to polar distributions, whereas platforms with longer scales exhibit a lower polarity. Most travel platforms use a 5-point scale (e.g. Airbnb, Expedia, TripAdvisor), and are therefore more subjective to polarity. Additionally, platforms have started to use average ratings that summarize reviews, and consumers have started to rely more heavily on this form of rating. However, as polarity self-selection suggests, consumers with positive experiences are more likely to review a product, causing the average ratings to be less informative than the number of reviews itself. Polarity self-selection thus decreases the usefulness for average ratings, but it can increase the usefulness when the number of reviews is used, as it can be an indicator of product popularity and quality. Nevertheless, extreme evaluations are often seen as less ambiguous and more diagnostic and are therefore receiving more attention. A higher average rating will suggest higher quality and a positive or negative imbalance suggests agreement amongst consumers (Langan, et al., 2017). In reality though, consumers might find the information they are looking at unhelpful and are not able to reduce their purchase uncertainty.

Review variance (i.e. distribution of ratings, degree of consensus amongst reviews) has been a rather new topic in current literature and is quite similar in nature to polarity. Comparable to polarity, variance has different effects depending on the nature of the product (hedonic versus utilitarian) and the valence of the product (Langan, et al., 2017). Hedonic products are purchased for luxury purposes, and allow the consumer to have fun, excitement or pleasure.

Hence, the purchase of a hedonic product is an affective decision and often involves some kind of experience with room for subjective opinions. The experience can be variable amongst consumers and the quality of products with low average ratings and high variance can thus be questioned; the effects of variance can be minimized during the decision-making process and consumers that purchase hedonic products can thus be immune to negative reviews. Also, greater perceived risk has been found to increase purchase intention for hedonic products. Furthermore, research by Sun (2012) shows that high variance for products with low average ratings suggest high quality, increasing sales. Conversely, for products with high average ratings, high variance suggests that it is difficult to determine the quality. High variance can thus increase decision uncertainty due to a lack of review diagnosticity, and therefore reduces purchase intention (Langan, et al., 2017). High valence (i.e. average rating) and volume of reviews have also been found to have a positive effect on sales, as we have seen previously (section 2.1.1).

Polarity of opinions is present in the distributions of online reviews, also in the hotel sector. Its effects have been researched, especially in relation to sales, but have shown inconsistent results. The studies by Ye, et al. (2011) and Sigala (2011) have found that a higher variance in opinion polarity has no negative influence on online bookings, while other research shows that an increase in variance does reduce sales for hotel rooms (Melián-González, et al., 2013; Ye, et al., 2009). Furthermore, the study by Ghose & Ipeirotis (2006) shows that online sales of a variety of products are influenced greatly by the subjectivity and polarity of the ratings in reviews. These contradicting results may suggest that other factors play an important role, such as consumer trust. This will be discussed in the following section.

### *2.1.3 The Role of Online Trust*

A commonly used definition of trust states that “trust is a psychological state compromising the intention to accept vulnerability based on positive expectations of the intentions or behaviors of another” (Rousseau, et al., 1998, p.395; Bart, et al., 2005). It thus indicates a consumers willingness to accept their vulnerability based on (positive) experiences of others (Shaheen, et al., 2019; Kim, et al., 2017; Dong, et al., 2018). Compared to traditional word-of-mouth however, online trust somewhat differs from this definition. Not only the person stating their opinions needs to be trusted, but also the information that is stated on a website needs to be considered when making a purchasing decision (Bart, et al., 2005). Online trust thus also includes a consumers willingness to belief in the services of an online platform and the willingness to belief in the reliability of online reviews (Shaheen, et al., 2019).

The relation between companies and consumers has changed, as most of the interactions nowadays happen online where consumers must develop their perceptions of trust based on how a website meets their expectations and on how trustworthy that information is (Bart, et al., 2005). For the travel sector online information is the biggest risk factor, especially since it is an experience good; consumers are uncertain of the accuracy of information given to them through websites. So, as the world wide web has become the main platform for consumers to gain information it has presented consumers with more uncertainties and higher perceived risks (Kim, et al., 2017). Trust can thus make or break a deal very easily, as a lack of it will most likely result in avoiding a purchase. Research has shown that trust towards third party websites

for example positively influences purchase intention (Kim, et al., 2017). It has also shown that a lack of trust was the main reason for consumers to be reluctant to purchase from an online website. This is also true for hotel websites, as transparency of its services and policies is valuable to consumers. (Positive) experiences of previous consumers also generate trust towards hotels, as it usually includes a more detailed description. Furthermore, online reviews are easily available and contain more up-to-date information, which is seen as more reliable compared to the information posted by hotels themselves. Online reviews can thus gradually increase one's expectations of a hotel and increase one's purchase intention and trust (Elwalda, et al., 2016; Kim, et al., 2017). Both trust towards third party websites and trust towards hotels have been found to be influenced by online reviews, and both forms of trust are positively influencing a consumer's intention to purchase, as greater trust is associated with a lower perceived risk (Kim, et al., 2017).

Additionally, trust has been found to positively influence satisfaction and to directly influence purchase intention (Shaheen, et al., 2019). As found by recent research 93% of consumers is greatly influenced by online reviews in their purchase decisions and a further 91% says to trust these reviews as much as personal recommendations (Schoenmueller, et al., 2020). It is thus important for companies to connect with its consumers by instigating trust, as this heightens consumer engagement (Shaheen, et al., 2019). This has become quite a complex task however, as both positive and negative reviews are available for everyone to see; reviews not only act as a source of information, but are also a great way to recommend ones experiences (Shaheen, et al., 2019).

Since online reviews have such a big impact, it is important to know the characteristics of online reviews that cause consumers to trust. We have previously discussed that consumers follow a decision-making process that looks to eliminate as much uncertainty as possible. To limit this uncertainty we have seen that online reviews play an important role, as they act as a signaling mechanism. In addition to that, similarity in experiences can help in enhancing trust, as it decreases uncertainty (Shaheen, et al., 2019). Consumers who can recognize themselves in the experiences of others are most likely similar and can associate and trust more easily. The credibility of online reviews thus positively influences trust of consumers. Moreover, potential consumers are influenced socially, as they try to follow the crowd. A popular product is usually purchased even more as positive experiences are shared. This can be explained by informational influences, as consumers seek for additional information and experiences of others. The usefulness of reviews thus also influences trust of consumers in a positive way. Furthermore, the credibility and perceived usefulness of reviews have been found to serve as a trigger in the adoption of reviews and in the tendency to trust commercial websites. Especially consumers that frequently use online reviews before making a purchase are significantly affected and are more likely to trust and purchase from an online store that provides reviews, as it gives consumers a sense of control. (Elwalda, et al., 2016).

Accordingly, perceived trust is mainly caused by the information that is available through online reviews, as it is based on personal experiences instead of seller information. Potential consumers can relate to these experiences more closely in terms of having the same interest for a product, which reduces ones perception of vulnerability, uncertainty, and perceived risk (Shaheen, et al., 2019). Hence, it increases trust; consumers tend to adopt the information that

is presented in reviews to a greater extent. It also has a significant positive effect on consumer engagement, as a consumer who has developed a trusting relationship with a company is more likely to engage with that company again over a course of time. Additionally, online reviews have been found to positively influence sales (Mudambi & Schuff, 2010; Shaheen, et al., 2019). Similar results have been found in the travel sector, as experiences of past consumers shared on online platforms affect the adoption of information about travel experiences (Shaheen, et al., 2019). This in turn helps in creating trust in the services that are offered on these travel platforms (Bae, et al., 2017; Shaheen, et al., 2019). Moreover, hotel bookings have been proven to be greatly influenced by positive reviews (Sparks & Browning, 2011). Nonetheless, negative information tends to be exaggerated and is thus more influential; it weights heavier in a consumers' decision making process. This is even more the case when negative information is received early.

On the contrary, research has also shown that consumers who are exposed to positively valenced reviews have greater trust in hotels compared to consumers who only read negatively valenced reviews. This shows that positive remarks can positively influence one's perceptions, yet when the overall valence of reviews is predominantly negative it will diminish one's trust and intention to purchase. Trust in a hotel will thus be higher when the overall valence is predominantly positive. Additionally, reviews can contain emotional and practical aspects. Emotional evaluations are more likely based on service elements and can include remarks about the friendliness of the staff for example. Practical evaluations on the other hand are more focused on the functional aspects of a product, including its core attributes. Both types will influence a consumers' perception of a hotel, but reviews based on emotional remarks have a greater influence (Sparks & Browning, 2011; Dong, et al., 2018). Experience goods like hotels are thus more dependent on emotional evaluations.

So, besides credibility of reviews, valence also influences trust in online reviews. Positive reviews, compared to negative ones, impact a consumers perception of benevolence in a greater way (Dong, et al., 2018). It positively influences the trustworthiness of a reviewer, which leads to a greater trust in the review itself. Research also shows that consumers are influenced greatly by early negative information, especially if the overall set of reviews is negative (Elwalda, et al., 2016). In addition, negative reviews are deemed more credible and have a stronger effect on consumers compared to positive information (Kusumasondjaja, et al., 2012; Lo & Yao, 2019). The same goes for reviews with consistent ratings. Review ratings consistency can be referred to as the extent to which a remark is consistent with others regarding the same product or service (Lo & Yao, 2019). Nonetheless, positive information combined with numerical ratings still positively influences trust and purchase intention, and positive reviews have a bigger influence on initial trust of consumers regarding travel services (Elwalda, et al., 2016; Kusumasondjaja, et al., 2012).

As we have seen trust of consumers can be influenced greatly by many factors. First of all, online reviews in general serve as a signaling mechanism of better quality and thus positively influence perceived trust. We have also seen that valence influences consumers in their decision-making process, where a positive review is expected to increase one's trust and a negative review is expected to decrease one's trust. Notwithstanding, these effects are harder to predict for a whole set of reviews, as effects of opinion polarity have yet to be examined.

Research has shown that a predominantly negative set of reviews influences a consumer's decision-making process more. However, positive reviews with a predominant positive valence create more trust in a hotel. It is expected that a high polarity of hotel reviews positively influences perceived trust, as it indicates agreement amongst prior consumers. It is also expected that a positively valenced and highly polar set of reviews positively influences perceived trust.

In line with the literature review as presented above the following hypotheses are proposed.

*H2.* Perceived trust of online reviews is higher for hotels with overall ratings that have a polar distribution (i.e. polarity of opinions) compared to those that do not have a polar distribution.

*H3.* Perceived trust of online reviews is higher for hotels with overall ratings that have a positively valenced and polar distribution.

*H3a.* A polar review with low valence has a higher perceived trust compared to a non-polar review with low valence.

*H3b.* A polar review with moderate valence has a higher perceived trust compared to a non-polar review with moderate valence.

*H3c.* A polar review with high valence has a higher perceived trust compared to a non-polar review with high valence.

## 2.2 Conceptual Model

In line with the purposes of this research and in accordance with the presented literature review figure 2.2.1 graphically displays the hypothesized relationships between the variables. As can be seen in figure 2.2.1 two characteristics of the variable online reviews will be examined, namely valence and polarity of opinions.

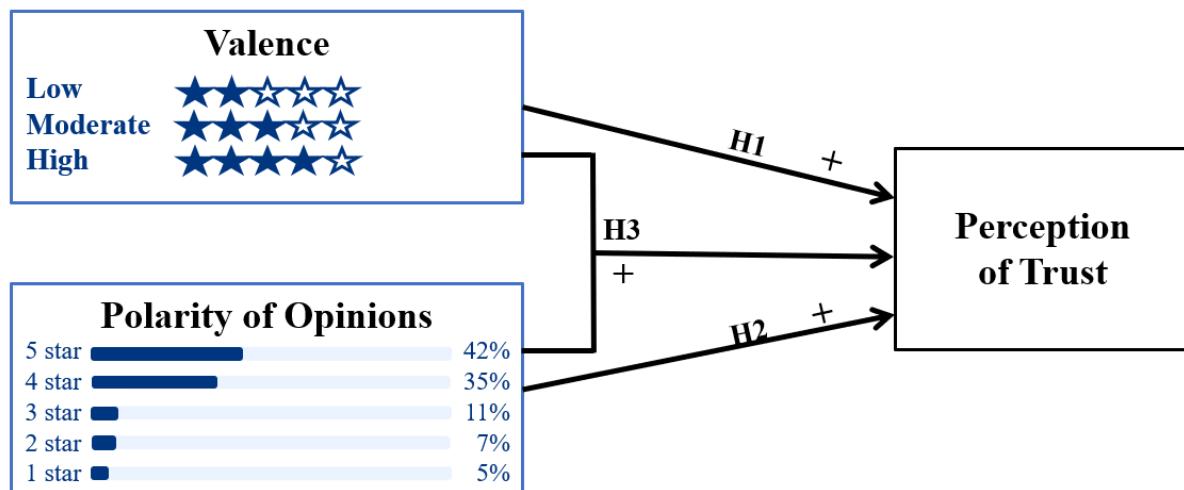


Figure 2.2.1 – Conceptual Research Model

### 3. RESEARCH DESIGN

#### 3.1 Data Sample

Based on the objective of this research a survey study was designed to examine the relations between opinion polarity and valence in hotel reviews, and the perception of trust. Survey respondents were asked to rate their level of trust in different settings, as they were shown a number of hotel reviews. Anonymous quantitative descriptive data was collected from the 8<sup>th</sup> of September until the 27<sup>th</sup> of September 2021 resulting in 123 answers. A total of 19 invalid answers were deleted from the dataset, leaving 104 valid responses to be examined. All respondents were adults, including 39 Dutch citizens and 65 of other nationalities. The decision to only include consumers aged 18 and up was made, as they do not need parental consent to book a hotel. This age group is also expected to be able to take care of themselves by law, carrying their own responsibilities. As this still leaves a large part of the age group, it provided a bigger chance of reaching a lot of respondents within a small time frame. Respondents were reached through personal connections and by sharing the survey link in Facebook groups specifically designed to look for respondents.

#### 3.2 Dependent Variable

The dependent variable ‘perception of trust’ was tested using a reliable scale of 5 statements on hotel trust from previous research by Sparks & Browning (2011) and Ladhari & Michaud (2015). The latter used the scale in the context of the effects of electronic word-of-mouth on trust, amongst other things. The former designed the scale to examine the impact of the context and framing of written online reviews on hotel booking intentions and perception of trust. As most travel websites (e.g. Airbnb, Expedia, and TripAdvisor) use a 5-point scale it was decided to use a 5-point Likert scale on which respondents were asked to rate their preference on the statements, ranging from 1 (strongly disagree) to 5 (strongly agree).

The scale consists of the following 5 items:

- T1 I think this hotel would have high integrity.
- T2 I believe this hotel would be reliable.
- T3 If I was to discuss this hotel with others, I would probably say positive things.
- T4 I would have trust in this hotel.
- T5 This seems like a good quality hotel.

The 5 items were randomly ordered for each question, as to not create repetition throughout the questions and to maximize respondents’ attention.

#### 3.3 Independent Variables

The independent variables ‘polarity of opinions’ and ‘valence’ were included indirectly in the survey, as it ensures a more honest answer and does not influence respondents in a direct manner. Reviews with and without polarity, and with low, medium, and high valence were shown to be able to measure its influence on trust. It was decided to use 2 (low), 3 (moderate), and 4 (high) stars representing the valence and to use 70% for polarity and 23% for no polarity.

As polarity can be measured via the formula  $polarity = \frac{\text{number (1 and 5 star ratings)}}{\text{number of ratings}}$  the questions in the survey needed to be distinguished by how many reviewers rated the hotel 1, 2, 3, 4, or 5 stars. Otherwise, the influence of opinion polarity would be left out during the testing period. Furthermore, the reviews in the survey were based on existing hotel reviews retrieved



from the website Booking.com. However, as Booking.com does not provide the distribution of reviews, which is needed for opinion polarity, an adaptation was made based on reviews of Booking.com and Amazon.com. In addition, fake hotel names were used to minimize bias. In conclusion, respondents were asked to rate their trust on different hotels based on its star ratings. The complete survey can be found in Appendix 1 (chapter 6.1).

### **3.4 Control Variables**

Control variables that were taken into account are age, gender, nationality, current place of residence, and (online) booking experience. Based on the literature review it is expected that people are more sensitive to online reviews if they have previous experience with making an online reservation. Therefore, respondents were also asked 'Have you made reservations for a hotel before? If so, did you make the reservation online?'. Nationality and current place of residence were asked as one's perception of hotel reviews can be country specific.

### **3.5 Estimation Techniques**

The survey was created using the program Qualtrics via the University of Twente. It included an informed consent form, as well as demographic questions (e.g. age, gender, nationality, current country of residence, (online) booking experience). In order to minimize missing data respondents were forced to answer each question to be able to continue in the survey by using the option 'force response' (with the exception of demographic questions). Respondents were also free to leave the survey at any given point.

Collected data was analysed with the program IBM SPSS Statistics 25. Firstly, reliability testing and factor analysis were performed in order to see whether the items of the scale 'perception of trust' indeed measured the proposed construct. Item-Total Statistics were checked, as it shows the values for Cronbach's  $\alpha$  in case one of the items is deleted. If one of the values is much greater than the actual value of Cronbach's  $\alpha$  it is suggested to analyze further using factor analysis. Guelford (1965) suggests that a Cronbach's  $\alpha$  greater than 0,7 indicates a relative high internal consistency of a scale. Furthermore, if a dataset is small in size it is suggested to maximize communalities in factor analysis (Mvududu & Sink, 2013; Hogarty, et al., 2005). Additionally, descriptive analysis was performed on the control variables and the dependent variable, including means, standard deviations, and frequencies. This data was used to indicate the characteristics of the respondents. Also, an initial indication of differences could be seen for the dependent variable 'perception of trust'.

Next, assumptions were tested to be able to select the right regression tests. The Shapiro-Wilk test was performed to see whether the dataset has a normal distribution. This test is suitable for datasets smaller than 2000 elements. Results of the test show that the dataset is not entirely normally distributed, which means that it has to be analyzed with non-parametric tests. Further, we tested whether the variables are symmetrical using boxplots. Results showed that three out of four variables were not symmetrical.

Taking into account that all questions were answered by the same group of respondents, appropriate tests were selected to examine the data. The Paired-Samples Sign Test was used to examine the three non-symmetrical variables. The other variable was examined with the Wilcoxon Signed-Rank Test. Additionally, to examine the relation between valence and

perception of trust the Friedman Test was selected with additional Ad Hoc analysis using the Wilcoxon Signed-Rank Test.

### 3.6 Explanation of Variables

In the following chapter the data analysis will be discussed. In order to understand the variable names it is explained in short in this section.

First of all, the survey contained 9 scenarios. Each scenario corresponds to the names used in table 3.6.1. For example scenario 1 (i.e. Q1) in the survey showed a review with high valence, whereas scenario 6 showed a review with medium valence and a polar distribution. In addition, we merged scenario's 2, 6, and 9 in order to create the variable Polarity. The same was done with scenario's 3, 4, and 7 in order to create the variable NoPolarity.

*Figure 3.6.1 – Variable Names*

<b>Perception of Trust</b>
<i>Q1 ValenceHigh</i>
<i>Q2 PolarityxLow</i>
<i>Q3 NoPolarityxMed</i>
<i>Q4 NoPolarityxHigh</i>
<i>Q5 ValenceLow</i>
<i>Q6 PolarityxMed</i>
<i>Q7 NoPolarityxLow</i>
<i>Q8 ValenceMed</i>
<i>Q9 PolarityxHigh</i>

*Figure 3.6.2 – Merged Variables*

<b>Valence</b>
<i>Q5 ValenceLow</i>
<i>Q8 ValenceMed</i>
<i>Q1 ValenceHigh</i>
<b>Polarity</b>
<i>Q2 PolarityxLow</i>
<i>Q6 PolarityxMed</i>
<i>Q9 PolarityxHigh</i>
<b>NoPolarity</b>
<i>Q7 NoPolarityxLow</i>
<i>Q3 NoPolarityxMed</i>
<i>Q4 NoPolarityxHigh</i>

## 4. DATA ANALYSIS AND RESULTS

### 4.1 Reliability Testing and Factor Analysis

As can be seen in table 4.1 Cronbach's  $\alpha$  of 'perception of trust' is greater than 0,8 for all questions, which corresponds with the reported values by Sparks & Browning (2011) and Ladhari & Michaud (2015). It indicates that the internal consistency of the scale is high and means that the reliability of the survey is acceptable. Furthermore, with the exception of one case the items appeared to be worthy of retention, resulting in a decrease of  $\alpha$  if the item were to be deleted. The third item 'If I was to discuss this hotel with others, I would probably say positive things' of question 9 exempted, which showed that  $\alpha$  would increase from 0,908 to 0,925. It is not a big increase, but it was still investigated using factor analysis.

Table 4.1.1 – Cronbach's  $\alpha$

<i>Perception of Trust</i>	<i>Cronbach's <math>\alpha</math></i>
<i>Q1 ValenceHigh</i>	0,854
<i>Q2 PolarityxLow</i>	0,915
<i>Q3 NoPolarityxMed</i>	0,876
<i>Q4 NoPolarityxHigh</i>	0,910
<i>Q5 ValenceLow</i>	0,940
<i>Q6 PolarityxMed</i>	0,911
<i>Q7 NoPolarityxLow</i>	0,946
<i>Q8 ValenceMed</i>	0,903
<i>Q9 PolarityxHigh</i>	0,908

Table 4.1.2 – Factor Analysis, Communalities

	<i>Cronbach's <math>\alpha</math> in case of Extraction</i>
<i>Q9-3</i>	0,507
<i>Q9-1</i>	0,794
<i>Q9-4</i>	0,810
<i>Q9-2</i>	0,796
<i>Q9-5</i>	0,788

Factor analysis showed that our 5 items seem to measure one underlying factor, because only our first component has an Eigenvalue of at least 1. The communalities table further confirms this, as  $r^2$  is higher than 0,4 for all 5 items (table 4.1.2). This means that all 5 items contribute to measuring the underlying factor. As such, it was decided not to remove the item from the dataset.

### 4.2 Descriptive Statistics

The 5 items of 'perception of trust' were computed into one variable for each question, resulting in 9 mean scores (see table 4.1.1 for the 9 variables). Additionally, as this research further aims to see whether there is a difference in trust between reviews with polarity and without polarity, the mean scores of the three polar (Q2, Q6, and Q9) and three non-polar (Q3, Q4, and Q7) reviews were combined. This resulted in two new variables, namely one for polarity and one for no polarity (see table 4.2.2).

Next, frequencies of the control variables age, gender, nationality, current place of residence, and (online) booking experience were calculated. Out of 104 respondents 6 have stated that they have not made a reservation for a hotel before. The other 94 respondents answered yes on the question, and 4 chose not to answer. 85,4% of respondents thus has experience booking a hotel, being it online or through other mediums. Furthermore, as can be seen in table 4.2.1 the majority of respondents is female (72,1%) and aged between 18-24 and 25-34 years old (35,6% and 33,7% respectively). In addition, 39 respondents are Dutch and 65 people have another nationality. A total of 26 other nationalities were recorded in the survey. Also, 41 people live in the Netherlands and 63 respondents live in one of the 21 other countries that have been mentioned in the survey. Exact frequencies of nationalities and current places of residence can be found in Appendix 2 (chapter 6.2).

Means and standard deviations (SD) were calculated for the variable ‘perception of trust’ to see initial differences. Table 4.2.2 shows that valence seems to have a positive influence, as the means increase as valence increases. We can also see that the means for polarity are somewhat the same as the means for no polarity. The biggest difference seems to lie at low valence, as the mean for the polar review lies at 1,908 versus 1,789 for the review without polarity. Medium valence even shows a lower mean for polarity, and high valence has almost the same mean. This would suggest that polarity has a positive effect on low valenced reviews, a negative effect for medium valenced reviews, and no or minor effects for high valenced reviews. As the differences are quite small, further tests will have to be done to get a clearer picture and to be able to see the exact differences.

Table 4.2.1 – Descriptives of Control Variables

<b>Variable</b>		<b>Frequency</b>	<b>Percent</b>
<i>Gender</i>	Male	29	27,9
	Female	75	72,1
<i>Age</i>	18-24	37	35,6
	25-34	35	33,7
	35-44	7	6,7
	45-54	14	13,5
	55-64	9	8,7
	65-74	2	1,9
<i>Nationality</i>	Dutch	39	37,5
	Other	65	62,5
<i>Current</i>	Netherlands	41	39,4
<i>Place of Residence</i>	Other	63	60,6

Table 4.2.2 – Means and SD of ‘Perception of Trust’

<b>Variable</b>	<b>Mean</b>	<b>SD</b>
<i>Valence</i>	-	-
<i>Q5 ValenceLow</i>	1,829	0,771
<i>Q8 ValenceMed</i>	2,919	0,661
<i>Q1 ValenceHigh</i>	3,800	0,585
<i>Polarity</i>	2,814	0,479
<i>Q2 PolarityxLow</i>	1,908	0,812
<i>Q6 PolarityxMed</i>	2,602	0,759
<i>Q9 PolarityxHigh</i>	3,931	0,702
<i>NoPolarity</i>	2,852	0,466
<i>Q7 NoPolarityxLow</i>	1,789	0,808
<i>Q3 NoPolarityxMed</i>	2,839	0,609
<i>Q4 NoPolarityxHigh</i>	3,929	0,699

### 4.3 Hypotheses Testing

#### 4.3.1 Test Assumptions

*Assumption 1.* The dependent variable should be measured at the ordinal level (e.g. 5-point Likert scale).

*Assumption 2.* The independent variable should have two or more categorical related groups (i.e. the groups contain the same set of participants).

*Assumption 3.* The paired observations for each respondents are independent. In other words, the group represents a random sample from the population.

*Assumption 4.* The dataset should have a normal distribution.

Assumptions related to normality and symmetry should be tested with variables that represent the difference between paired values. We therefore computed four new variables, namely

- DifferenceLowValence = Q2 – Q7
- DifferenceModerateValence = Q6 – Q3
- DifferenceHighValence = Q9 – Q4
- DifferencePandNP = Polarity – NoPolarity

We then performed the Shapiro-Wilk test. Results show that three out of four p-values are lower than 0,05 (table 4.3.1.1). We therefore reject the null hypothesis of population normality where  $p < 0,05$  and conclude that the variables ‘Difference Low Valence’, ‘Difference Moderate

Valence’, and ‘Difference High Valence’ are not normally distributed. Histograms further confirmed these results, together with the values for skewness and kurtosis. We thus have to use non-parametric tests to analyze the data of these three variables.

*Table 4.3.1.1 – Shapiro-Wilk Test, Tests of Normality*

<b>Variable</b>	<b>Statistic</b>	<b>df</b>	<b>Sig.</b>
<i>DifferenceLowValence</i>	0,945	104	0,000
<i>DifferenceModerate Valence</i>	0,973	104	0,032
<i>DifferenceHighValence</i>	0,867	104	0,000
<i>DifferencePandNP</i>	0,988	104	0,461

The p-value for ‘DifferencePandNP’ however, is higher than 0,05 and thus can be assumed to be normally distributed. We can use a parametric test to analyze this variable.

*Assumption 5. The distribution of the difference between the two related groups needs to be symmetrical in shape.*

To test whether the distribution of the differences is symmetrical, we used the same four variables that we computed to check for a normal distribution.

To check the assumption boxplots were plotted. A symmetrical shape should have symmetrical areas above and beneath the median line. Results show that for three variables this is not the case, as the median does not indicate the middle. For *DifferenceHighValence* however, the median does indicate the middle. We can thus assume that this variable has a symmetrical shape, whereas the other three variables do not.

#### **4.3.2 Testing the Impact of Valence on Trust**

As we want to know whether different levels of valence have an effect on perception of trust a Friedman test was carried out. This test is the non-parametric version of the one-way ANOVA with repeated measure.

Results show that there is a statistically significant difference in perception of trust depending on the valence of the review ( $\chi^2_{\text{friedman}}(2) = 151,364$ ;  $p < 0,000$ ). The mean ranks differ quite a bit in favor of Q1 (high valence), followed by Q8 (moderate valence), and Q5 (low valence).

*Table 4.3.2.1 – Friedman Test, Test Statistics*

<i>N</i>	104
<i>Chi-Square</i>	151,364
<i>Df</i>	2
<i>Asymp. Sig.</i>	0,000

*Table 4.3.2.2 – Friedman Test, Ranks*

<b>Variable</b>	<b>Mean Rank</b>
<i>AverageQ1</i>	2,80
<i>AverageQ5</i>	1,16
<i>AverageQ8</i>	2,04

The Friedman test does tell us that there are differences, but it does not tell us where exactly these differences occur. Therefore, we will perform a Post Hoc analysis using Wilcoxon Signed-Rank tests. We will compare the following three combinations:

- Low to Moderate (H1a)
- Low to High
- Moderate to High (H1b)

As we are making multiple comparisons we have to use a Bonferroni adjustment on the results. This means that our initial significance level of 0,05 should be divided by the number of test we are running. Our significance level is thus  $0,05/3 = 0,017$ .

Table 4.3.2.3 – Wilcoxon Signed-Rank Test, Test Statistics

	<b>Z</b>	<b>Asymp. Sig. (2-tailed)</b>
<i>AverageQ8 – AverageQ5</i>	-8,308	0,000
<i>AverageQ1 – AverageQ5</i>	-8,583	0,000
<i>AverageQ1 – AverageQ8</i>	-7,665	0,000

Median perception of trust levels for low, moderate, and high valence were 1,8 (1,1 to 2,0), 3,0 (2,5 to 3,4), and 3,8 (3,4 to 4,2), respectively. There were statistically significant reductions in perception of trust in all three cases as all p-values are lower than 0,000 (table 4.3.2.3). The perception of trust was thus statistically significantly different in all three cases.

#### 4.3.3 Testing the Impact of Opinion Polarity on Trust: No Valence, Low Valence, and Moderate Valence Scenario

The Paired-Samples Sign Test can be used as an alternative for the Wilcoxon signed-rank test and the dependent t-test in cases where the distribution of differences between related groups is not symmetrical and/or not normally distributed. This test can thus be used to analyze the distribution of differences between the following variables:

- Polarity and No Polarity (H2)
- Polarity x Low Valence and No Polarity x Low Valence (H3a)
- Polarity x Moderate Valence and No Polarity x Moderate Valence (H3b)

We performed hypotheses testing to examine whether there is a significant difference in perception of trust for reviews with and without polarity. Our null hypotheses states that the two population medians are equal.

Table 4.3.2.1 shows the number of positive, negative and tied paired differences. It shows how many participants decreased (i.e. negative differences) or improved (i.e. positive differences) their perception of trust, and how many participants were indifferent (i.e. ties). For example, 43 participants rated  $Q7 < Q2$ , 23 rated  $Q7 > Q2$ , and 38 stayed indifferent (table 4.3.2.1).

Table 4.3.2.1 – Sign Test, Frequencies

<b>Variable</b>		<b>N</b>
<i>AverageQ7 – AverageQ2</i> ( <i>No Polarity x Low Valence</i> and <i>Polarity x Low Valence</i> )	Negative Differences	43
	Positive Differences	23
	Ties	38
	Total	104
<i>AverageQ3 – AverageQ6</i> ( <i>No Polarity x Moderate Valence</i> and <i>Polarity x Moderate Valence</i> )	Negative Differences	34
	Positive Differences	49
	Ties	21
	Total	104
<i>NoPolarity – Polarity</i>	Negative Differences	46
	Positive Differences	49
	Ties	9
	Total	104

Table 4.3.2.2 – Sign Test, Test Statistics

<b>Variable</b>	<b>Asymp. Sig. (2-tailed)</b>
<i>AverageQ7 – AverageQ2</i>	0,019
<i>AverageQ3 – AverageQ6</i>	0,124
<i>NoPolarity – Polarity</i>	0,837

As can be seen in table 4.3.2.2 the p-value for ‘Polarity x Low Valence and No Polarity x Low Valence’ is 0,019. It is lower than 0,05. We reject the null hypothesis, meaning that different population medians are demonstrated. In other words a statistically significant median increase in perception of trust is demonstrated. The p-values for ‘Polarity x Moderate Valence and No Polarity x Moderate Valence’ and ‘No Polarity and Polarity’ are 0,124 and 0,837 respectively. Both are higher than 0,05 and thus do not demonstrate a statistically significant median increase in perception of trust.

#### 4.3.4 Testing the Impact of Opinion Polarity on Trust: High Valence Scenario

The Wilcoxon Signed-Rank Test can be used to analyze the distribution of differences between variables in cases where the data is symmetrical, but not normally distributed. We can thus use this test to examine the following variable:

- Polarity x High Valence and No Polarity x High Valence (H3c)

Table 4.3.3.1 shows that 40 participants had a lower perception of trust where no polarity was present ( $Q4 < Q9$ ). It also shows that 31 participants had a higher perception of trust where no polarity was present ( $Q4 > Q9$ ). A further 33 participants were indifferent. Looking at the test statistics we can see whether these changes, due to polarity, are statistically significantly different. As can be seen in table 4.3.3.2 our p-value is 0,885. Polarity thus did not elicit a statistically significant change in the perception of trust. In fact, the median score for perception of trust was 4,0 for both Polarity x High Valence and No Polarity x High Valence.

Table 4.3.3.1 – Wilcoxon Signed-Rank Test, Ranks Statistics

Variable	N
AverageQ4 – Average Q9	Negative Ranks 40
	Positive Ranks 31
	Ties 33
	Total 104

Table 4.3.3.2 – Wilcoxon Signed-Rank Test, Test

	AverageQ4 – AverageQ9
Z	-0,144
Asymp. Sig. (2-tailed)	0,885

## 5. CONCLUSIONS AND CONTRIBUTIONS

### 5.1 Conclusions

Table 5.1.1 shows an overview of all test statistics and its results.

Table 5.1.1 – Test Statistics Overview

<i>Variables</i>	<i>Test Statistics</i>	<i>Validated or Rejected</i>
<i>Valence (H1)</i>	$(\chi^2_{\text{friedman}}(2) = 151,364; p < 0,000)$	Validated
<i>Low Valence to Moderate Valence (H1a)</i>	$(Z = -8,308; p < 0,000)$	Validated
<i>Low Valence to High Valence</i>	$(Z = -8,583; p < 0,000)$	Validated
<i>Moderate Valence to High Valence (H1b)</i>	$(Z = -7,665; p < 0,000)$	Validated
<i>Polarity and No Polarity (H2)</i>	$(\alpha = 0,05; p = 0,019)$	Rejected
<i>PolarityxLowValence and NoPolarityxLowValence (H3a)</i>	$(\alpha = 0,05; p = 0,124)$	Validated
<i>PolarityxModerateValence and NoPolarityxModerateValence (H3b)</i>	$(\alpha = 0,05; p = 0,837)$	Rejected
<i>PolarityxHighValence and NoPolarityxHighValence (H3c)</i>	$(Z = -0,144; p = 0,885)$	Rejected

The first hypotheses were tested with the Friedman test and additional Post Hoc analysis. Our main hypothesis stated that perceived trust of online reviews is higher for hotel reviews that are positively valenced compared to those that are negatively valenced. Our survey was designed as such that we have three levels of valence, namely low, moderate, and high. Results for both the Friedman test and Post Hoc analysis showed significant differences. This implies that perception of trust was indeed influenced by the three different levels of valence that we used, with high valenced reviews having a higher perception of trust than moderate and low valenced reviews. Moderate valence in turn also showed a higher perception of trust compared to low valenced reviews.

Median values for low valenced reviews lie between 1,1 and 2,0, with an average of 1,8. Those of moderate valenced reviews lie between 2,5 and 3,4, with an average of 3,0; high valenced reviews have median values between 3,4 and 4,2, with an average of 3,8. These values also represent the different heights of perception of trust, and show us that valence indeed influences consumers. We can thus validate hypotheses 1, 1a, and 1b.

- H1. Perceived trust of online reviews is higher for hotel reviews that are positively valenced compared to those that are negatively valenced. VALIDATED
- H1a. A review with low valence has a lower perceived trust compared to a review with moderate valence. VALIDATED
- H1b. A review with moderate valence has a lower perceived trust compared to a review with high valence. VALIDATED

Our second hypothesis stated that perceived trust of online reviews is higher for hotels that have overall ratings with a polar distribution compared to those that do not have a polar distribution. We tested this hypothesis with the Paired-Samples Sign test. Our analysis showed an



insignificant difference, meaning that perception of trust was not influenced by polarity of opinions when keeping valence constant. We thus have to reject hypothesis 2.

- H2. Perceived trust of online reviews is higher for hotels with overall ratings that have a polar distribution (i.e. polarity of opinions) compared to those that do not have a polar distribution. REJECTED

As we also wanted to know whether valence had an influence on consumers in combination with polarity of opinions, we stated in our third hypothesis that perceived trust is higher for hotels with overall ratings that have a positively valenced and polar distribution. We split this hypothesis up into three portions, as we wanted to know whether polarity of opinions had an influence for low, moderate, and high valenced reviews. We thus tested the following sets of variables:

- Polarity x Low Valence and No Polarity x Low Valence
- Polarity x Moderate Valence and No Polarity x Moderate Valence
- Polarity x High Valence and No Polarity x High Valence

The first two sets of variables were tested with the Paired-Samples Sign test and the last set was tested with the Wilcoxon Signed-Rank test. Our results showed a significant difference for ‘Polarity x Low Valence and No Polarity x Low Valence’. Looking at the ranks, 43 participants rated  $Q7 < Q2$ , 23 rated  $Q7 > Q2$ , and 38 stayed indifferent (table 5.1.2). We can thus see that almost half of the participants scored lower on the review without polarity. This implies that the review with polarity had a higher perceived trust for low valenced reviews. Hypothesis H3a is therefore validated.

*Table 5.1.2 – Ranks  $Q7 - Q2$*

<b>Ranks</b>	<b>N</b>
<i>Negative Differences</i>	43
<i>Positive Differences</i>	23
<i>Ties</i>	38
<i>Total</i>	104

The opposite is true for moderate and high valenced reviews, as our results did not show a statistically significant difference. Perception of trust is thus not influenced by polarity provided that the review has a moderate or high valence. We therefore have to reject hypotheses 3b and 3c. Additionally hypothesis 3 also has to be rejected, as we cannot say that a higher valence leads to a higher perceived trust for polar reviews.

- H3. Perceived trust of online reviews is higher for hotels with overall ratings that have a positively valenced and polar distribution. REJECTED
- H3a. A polar review with low valence has a higher perceived trust compared to a non-polar review with low valence. VALIDATED
- H3b. A polar review with moderate valence has a higher perceived trust compared to a non-polar review with moderate valence. REJECTED
- H3c. A polar review with high valence has a higher perceived trust compared to a non-polar review with high valence. REJECTED

The aim of this paper was to answer what the impact of polarity of opinions is on the perception of trust with regard to online hotel reviews. Based on our dataset we can say that polarity of opinions has little to no influence on the perception of trust, as we have only seen significant

differences for low valenced reviews. We have seen that consumers are more focused on the valence of the review, and not so much on the number of 1 and 5 star reviews that a service or product has received. This corresponds with the results by Ye, et al. (2011) as they found that a higher variance of polarity did not influence online bookings. Trust thus plays an important role in a consumers' decision-making process, as it can be suggested that the overall opinion is more important than a single (negative) review. The effects of polarity can thus be minimized during this process. Hotels with high average ratings for example are chosen more often over hotels with low average ratings, despite its polarity, as it sends a stronger signal to consumers that the quality is good. This was also suggested by a few respondents of the survey, as they stated to usually book a hotel that has at least 4 stars. They also stated that they do read low rated reviews to get an idea of what happened to give such a negative review, but regardless still choose for the hotel with the highest valence.

## **5.2 Contribution to Theory and Practice**

Our study has tried to take a first step in analyzing the relation between polarity of opinions and consumers' trust. As little is known about this interaction, this paper tried to add to existing literature by designing a survey study with 9 different scenarios. As we have seen our results support the findings of existing literature of valence, as a higher valenced review creates higher trust amongst consumers. We have also seen that polarity of opinions has some kind of influence on trust, although it is very little. That is to say, reviews with low valence and a polar distribution create a higher level of trust compared to low valenced reviews with a non-polar distribution. Hotels that are competing with each other on the low side of star reviews (i.e. hotels with 1 or 2 star ratings) thus benefit from polar distributions and should thus encourage consumers to write reviews with extreme ratings (i.e. 1 or 5 stars) to excel from the rest. On the other hand, hotels that compete in the higher region of star reviews (i.e. 4 or 5 stars) benefit from non-polar distributions and should thus encourage all consumers to write reviews, being it low, moderate, or high in valence. Ultimately, depending on one's average star rating a different approach should be taken in order to stand out from the competition.

In spite of our results, further research has to be done as our analysis is still very limited. We have only included one variation for each type of review. A review with high valence and a polar distribution for example does not have one configuration. It is therefore suggested that further research should be done with larger amounts of reviews. In addition, our research used a within subjects design, meaning that every respondent evaluates each of the 9 scenarios that were used. A question that was answered further into the survey can thus be influenced by previous answers as respondents get a better understanding of what is asked. A between-subjects design could thus have minimized the learning and transfer across conditions. Another potential drawback of our study design is that respondents might become bored or uninterested caused by the repetitive nature of the questions. A within subjects design can thus cause the results to be skewed. Nonetheless, a within-subjects design minimizes random noise, meaning that it is less likely that a difference is present between the different scenarios of the survey.

## 6. APPENDICES

### 6.1 Appendix 1 - Survey

#### Informed Consent

Before you proceed in this questionnaire, please read the information below regarding informed consent.

Please be aware that your participation in this research is completely voluntary and that you can stop participating at any time. Under no circumstances will your real name or personal information be included in the report of this research. Nobody, except the researcher and the research supervisor, will have access to the anonymous material. Your data will be treated in a confidential manner and the research results will be published without personal information. Your personal data will not be given to third parties without your permission. If you have any questions or complaints about this research, you may contact the researcher at s.c.bordewijk@student.utwente.nl. If you continue to fill in this questionnaire, you indicate that you have read and understood the information presented above, and have been informed in a manner which is clear to you about the nature and method of the research.

By selecting 'I consent' you are agreeing to participate in this study.

- ☐ I consent  
☐ I do not consent

Page Break

#### Demographic Questions

How would you describe your gender?

- ☐ Male  
☐ Female  
☐ Other  
☐ Prefer not to say

What is your age?

- ☐ Under 18  
☐ 18 - 24  
☐ 25 - 34  
☐ 35 - 44  
☐ 45 - 54  
☐ 55 - 64  
☐ 65 - 74  
☐ 75 - 84  
☐ 85 or older

What is your nationality?

- ☐ Dutch  
☐ Other, namely...

Where do you currently live?

- ☐ Netherlands  
☐ Other, namely...

Have you made reservations for a hotel before?  
If so, did you make the reservation online?

Page Break

#### Introduction

When answering the following questions please imagine the following scenario.

*You are looking forward to your next trip and are currently searching for a hotel. Assume that both the price and location are the same for all hotels that will be presented.*

You will be asked to rate your level of trust of a hotel based on its reviews. For each hotel please indicate the degree to which you agree or disagree with the statements.

Page Break

#### Question 1

### Hotel Colombo

4.0/5 Average Rating  
Wonderful

Please rate the degree to which you agree or disagree with the statements based on the review presented above.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I think this hotel would have high integrity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe this hotel would be reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I was to discuss this hotel with others, I would probably say positive things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I would have trust in this hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This seems like a good quality hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

#### Question 2

### Hotel Faddiley

5 star	<div></div>	14%
4 star	<div></div>	2%
3 star	<div></div>	5%
2 star	<div></div>	25%
1 star	<div></div>	56%

Please rate the degree to which you agree or disagree with the statements based on the review presented above.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
If I was to discuss this hotel with others, I would probably say positive things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think this hotel would have high integrity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have trust in this hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I believe this hotel would be reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This seems like a good quality hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

#### Question 3

### Hotel Hakodate

5 star	<div></div>	11%
4 star	<div></div>	25%
3 star	<div></div>	29%
2 star	<div></div>	23%
1 star	<div></div>	12%

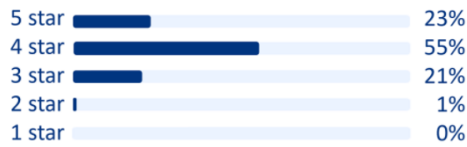
Please rate the degree to which you agree or disagree with the statements based on the review presented above.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I believe this hotel would be reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This seems like a good quality hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think this hotel would have high integrity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I was to discuss this hotel with others, I would probably say positive things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I would have trust in this hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

## Question 4

## Hotel Guimaras



Please rate the degree to which you agree or disagree with the statements based on the review presented above.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
This seems like a good quality hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have trust in this hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I was to discuss this hotel with others, I would probably say positive things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think this hotel would have high integrity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I believe this hotel would be reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

## Question 5

## Hotel Aosta

**2.0/5** Average Rating  
Fair

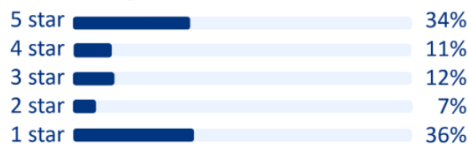
Please rate the degree to which you agree or disagree with the statements based on the review presented above.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I would have trust in this hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I was to discuss this hotel with others, I would probably say positive things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe this hotel would be reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This seems like a good quality hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I think this hotel would have high integrity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

## Question 6

## Hotel Enugu



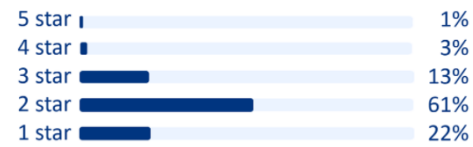
Please rate the degree to which you agree or disagree with the statements based on the review presented above.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I think this hotel would have high integrity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe this hotel would be reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I was to discuss this hotel with others, I would probably say positive things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have trust in this hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
This seems like a good quality hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

## Question 7

## Hotel Ilion



Please rate the degree to which you agree or disagree with the statements based on the review presented above.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I believe this hotel would be reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This seems like a good quality hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think this hotel would have high integrity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I was to discuss this hotel with others, I would probably say positive things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I would have trust in this hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

## Question 8

## Hotel Bainbridge

**3.0/5** Average Rating  
Good

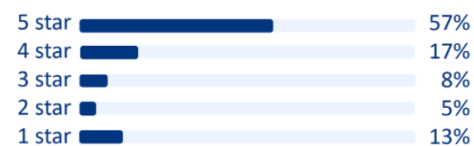
Please rate the degree to which you agree or disagree with the statements based on the review presented above.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
This seems like a good quality hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have trust in this hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I was to discuss this hotel with others, I would probably say positive things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think this hotel would have high integrity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I believe this hotel would be reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

## Question 9

## Hotel Des Moines



Please rate the degree to which you agree or disagree with the statements based on the review presented above.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
If I was to discuss this hotel with others, I would probably say positive things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think this hotel would have high integrity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have trust in this hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I believe this hotel would be reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This seems like a good quality hotel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

**Thank you for your participation!**

Do you have anything that you would like to say and/or do you have any questions?

---

Page Break

**Thank you for taking the time to fill in this questionnaire!**  
Your response has been recorded.

## 6.2 Appendix 2 – Frequencies of Nationality and Current Place of Residence

Table 6.2.1 – Frequencies of Nationality

<b>Nationality</b>	<b>Frequency</b>	<b>Percent</b>
<i>American</i>	9	8,7
<i>Australian</i>	3	2,9
<i>Austrian</i>	1	1,0
<i>British</i>	10	9,6
<i>Bulgarian</i>	1	1,0
<i>Canadian</i>	1	1,0
<i>Chinese</i>	2	1,9
<i>Danish</i>	2	1,9
<i>Estonian</i>	1	1,0
<i>Filipino</i>	1	1,0
<i>French</i>	1	1,0
<i>German</i>	6	5,8
<i>Indian</i>	6	5,8
<i>Indonesian</i>	1	1,0
<i>Irish American</i>	2	1,9
<i>Italian</i>	3	2,9
<i>Korean</i>	1	1,0
<i>Malaysian</i>	1	1,0
<i>Maltese</i>	1	1,0
<i>Maltese Australian</i>	1	1,0
<i>Polish</i>	2	1,9
<i>Portuguese</i>	2	1,9
<i>Romanian</i>	2	1,9
<i>Singaporean</i>	1	1,0
<i>Taiwanese</i>	2	1,9
<i>Yemini</i>	1	1,0
<i>NA</i>	1	1,0

Table 6.2.2 – Frequencies of Current Place of Residence

<b>Current Place of Residence</b>	<b>Frequency</b>	<b>Percent</b>
<i>Australia</i>	4	3,8
<i>Austria</i>	1	1,0
<i>Denmark</i>	3	2,9
<i>United Kingdom</i>	15	14,4
<i>France</i>	1	1,0
<i>Germany</i>	5	4,8
<i>India</i>	4	3,8
<i>Italy</i>	3	2,9
<i>Japan</i>	1	1,0
<i>South-Korea</i>	1	1,0
<i>Malaysia</i>	1	1,0
<i>Malta</i>	1	1,0
<i>Philippines</i>	1	1,0
<i>Portugal</i>	1	1,0
<i>Romania</i>	1	1,0
<i>Singapore</i>	2	1,9
<i>South Africa</i>	1	1,0
<i>Switzerland</i>	1	1,0
<i>Taiwan</i>	1	1,0
<i>United States</i>	13	12,5
<i>Yemen</i>	1	1,0
<i>NA</i>	1	1,0

## 7. REFERENCES

- [1] Amazon.co.uk. (n.d.). Low prices in Electronics, Books, sports equipment & more. <https://www.amazon.co.uk/>
- [2] Bart, Y., Shankar, V., Sultan, F., & Urban, G. L. (2005). Are the Drivers and Role of Online Trust the Same for All Web Sites and Consumers? A Large-Scale Exploratory Empirical Study. *Journal of Marketing*, 69(4), 133–152.
- [3] Berger, J., Sorensen, A. T., & Rasmussen, S. J. (2010). Positive Effects of Negative Publicity: When Negative Reviews Increase Sales. *Marketing Science*, 29(5), 815–827.
- [4] Booking.com. (n.d.). The largest selection of hotels, homes, and holiday rentals. <https://www.booking.com/hotels>
- [5] Comscore & The Kelsey Group (2007). Online consumer-generated reviews have significant impact on offline purchase behavior. <https://www.comscore.com/Insights/Press-Releases/2007/11/Online-Consumer-Reviews-Impact-Offline-Purchasing-Behavior>
- [6] Dabholkar, P. A. (2006). Factors Influencing Consumer Choice of a “Rating Web Site”: An Experimental Investigation of an Online Interactive Decision Aid. *Journal of Marketing Theory and Practice*, 14(4), 259–273.
- [7] Dong, B., Li, M., & Sivakumar, K. (2018). Online review characteristics and trust: A cross-country examination. *Decision Sciences*, 50(3), 537–566.
- [8] Elwalda, A., Lü, K., & Ali, M. (2016). Perceived derived attributes of online customer reviews. *Computers in Human Behavior*, 56, 306–319.
- [9] Ford, G. T., Smith, D. B., & Swasy, J. L. (1990). Consumer Skepticism of Advertising Claims: Testing Hypotheses from Economics of Information. *Journal of Consumer Research*, 16(4), 433.
- [10] Gretzel, U., & Yoo, K. H. (2008). Use and Impact of Online Travel Reviews. *Information and Communication Technologies in Tourism 2008*, 35–46.
- [11] Guilford, J.P. (1965). *Fundamental Statistics in Psychology and Education*, 4th ed. New York : Mc Graw-Hill.
- [12] Ho-Dac, N. N., Carson, S. J., & Moore, W. L. (2013). The Effects of Positive and Negative Online Customer Reviews: Do Brand Strength and Category Maturity Matter? *Journal of Marketing*, 77(6), 37–53.
- [13] Hogarty, K.Y., Hines, C.V., Kromrey, J.D., Ferron, J.M. & Mumford, K.R. “The Quality of Factor Solutions in Exploratory Factor Analysis: The Influence of Sample Size, Communality, and Overdetermination”, *Educational and Psychological Measurement* 65(2), pp. 202–226 (2005).
- [14] Hu, N., Zhang, J., & Pavlou, P. A. (2009). Overcoming the J-shaped distribution of online reviews. *Communications of the ACM*, 52(10), 144–147.
- [15] IMU Redactie. (n.d.). Wat is web 2.0?: Definitie en Uitleg. <https://imu.nl/internet-marketing-kennisbank/begrippen/web-2-0/>
- [16] Jansson-Boyd, C. V. (2010). *Consumer Psychology 2nd Edition*. McGraw-Hill Europe, Middle East & Asia (EMEA).
- [17] Kim, S., Kim, J., & Park, S. (2017). The Effects of Perceived Value, Website Trust and Hotel Trust on Online Hotel Booking Intention. *Sustainability*, 9(12), 2262.

- [18] Kusumasondjaja, S., Shanka, T., & Marchegiani, C. (2012). Credibility of online reviews and initial trust. *Journal of Vacation Marketing*, 18(3), 185–195.
- [19] Kumar, N., & Benbasat, I. (2006). Research Note: The Influence of Recommendations and Consumer Reviews on Evaluations of Websites. *Information Systems Research*, 17(4), 425–439.
- [20] Ladhari, R., & Michaud, M. (2015). eWOM effects on hotel booking intentions, attitudes, trust, and website perceptions. *International Journal of Hospitality Management* 46, 36-45.
- [21] Langan, R., Besharat, A., & Varki, S. (2017). The effect of review valence and variance on product evaluations: An examination of intrinsic and extrinsic cues. *International Journal of Research in Marketing*, 34(2), 414–429.
- [22] Li, X., & Hitt, L. M. (2008). Self-Selection and Information Role of Online Product Reviews. *Information Systems Research*, 19(4), 456–474.
- [23] Lo, A. S., & Yao, S. S. (2019). What makes hotel online reviews credible? *International Journal of Contemporary Hospitality Management*.
- [24] Melián-González, S., Bulchand-Gidumal, J., & González López-Valcárcel, B. (2013). Online customer reviews of hotels. *Cornell Hospitality Quarterly*, 54(3), 274-283.
- [25] Moorman, C., Deshpande, R., & Zaltman, G. (1993). Factors Affecting Trust in Market Research Relationships. *Journal of Marketing*, 57(1), 81.
- [26] Mudambi, & Schuff. (2010). Research note: What makes a helpful Online REVIEW? A study of customer reviews on Amazon.com. *MIS Quarterly*, 34(1), 185.
- [27] Mvududu, N. & Sink, C.A. “Factor Analysis in Counseling Research and Practice”, *Counseling Outcome Research and Evaluation* 4(2), pp. 75-98 (2013).
- [28] Ögut, H., & Taş, B. K. O. (2012). The influence of internet customer reviews on the online sales and prices in hotel industry. *The Service Industries Journal*, 32(2), 197-214.
- [29] Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review*, 23(3), 393–404.
- [30] Schoenmueller V, Netzer O, Stahl F. (2020). The Polarity of Online Reviews: Prevalence, Drivers and Implications. *Journal of Marketing Research*, 57(5), 853-877.
- [31] Shaheen, M., Zeba, F., Chatterjee, N., & Krishnankutty, R. (2019). Engaging customers through credible and useful reviews: The role of online trust. *Young Consumers*, 21(2), 137-153.
- [32] Sigala, M. (2011). Special issue on web 2.0 in travel and tourism: Empowering and changing the role of travelers. *Computers in Human Behavior*, 27(2), 607-608.
- [33] Sparks, B. A., & Browning, V. (2011). The impact of online reviews on hotel booking intentions and perception of trust. *Tourism Management*, 32(6), 1310-1323.
- [34] Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*, 87(3), 355.
- [35] Stigler, G. J. (1961). The Economics of Information. *Journal of Political Economy*, 69(3), 213–225.
- [36] Sun, M. (2012). How does the variance of product ratings matter? *Management Science*, 58(4), 696–707.
- [37] Vermeulen, I. E., & Seegers, D. (2009). Tried and tested: The impact of online hotel reviews on consumer consideration. *Tourism Management*, 30(1), 123–127.



- [38] Ye, Q., Law, R., Gu, B., & Chen, W. (2011). The influence of user-generated content on traveler behavior: An empirical investigation on the effects of e-word-of-mouth to hotel online bookings. *Computers in Human Behavior*, 27(2), 634-639.