12-7-2016

The effects of ratio of reviews and product type

Marco Ros – s1135317



Universiteit Twente – Communication Studies
EXAMINATION COMMITTEE: ARDION BELDAD & JOYCE KARREMAN

Abstract

On the internet, consumers can share their experiences with products with other consumers. This is called eWOM (electronic word-of-mouth). For consumers, eWOM is one of the main sources of information with regards to purchasing a product online.

While previous studies mainly researched the effects of a single positive or negative review. This study will elaborate on Doh and Hwang's (2009) study on ratio of positive and negative reviews. Doh and Hwang (2009) used the following ratios of positive to negative reviews: 10:0, 9:1, 8:2, 7:3 and 6:4. The present study will focus on the same amount of reviews (10) and roughly the same ratios (10:0, 8:2 and 6:4). Those ratios were chosen because they showed the most significant results in Doh and Hwang's study. The present study attempted to find new theoretical insights by elaborating on the study by Doh and Hwang (2009) and investigating if the effects differentiate for different product types, namely search and experience goods. Therefore, the following research question was formulated: *To what extent do the ratio of positive and negative reviews and the type of product have an effect on purchase intention, attitude towards the product, attitude towards the website and the credibility of the reviews?*

This research employed a 3 (Ratio of positive and negative reviews: 10:0, 8:2 and 6:4) x 2 (Product type: Search good and Experience good) experimental design. The data was collected through an online questionnaire.

Analysis of the results showed that although positive reviews are definitely needed to create a positive attitude towards the product and to increase the purchase intention, a few negative reviews in a set of positive reviews are not necessarily disadvantageous. Furthermore, two negative reviews in a set of ten reviews can even be advantageous because it has a positive influence on the perceived credibility of the reviews. Finally, in an online context, reviews have a more positive effect on the purchase intention and attitude towards the product of search goods than of experience goods.

Table of content

1.	Introduction	4
2.	Theoretical background	6
	Ratio and review valence	7
	Product type	10
	Involvement, prior product knowledge and attitude towards reviews	11
	Conceptual model	12
3.	Method	13
	Design	13
	Material	13
	Products	
	Manipulation checks	15
	Procedure and respondents	15
	Measures	17
	Covariates	18
4.	Results	20
	Data analysis	20
	Purchase intention	20
	Product attitude	21
	Website attitude	23
	Credibility	24
	Hypothesis	25
5.	Discussion of results	26
	Discussion of results	26
	Theoretical contribution	28
	Practical implications	29
	Limitations and future research	29
	Conclusion	30

References	31
Appendix	37
Appendix A. Product page	37
Appendix B. Questionnaire	43

1. Introduction

The growth of the internet has changed many daily routines. Alongside changing the way we look for information and the way we communicate with each other, it also changed the way we shop (King, Racherla & Bush, 2014). The lack of a sensory experience in online shops causes consumers to obtain product information in different ways than in a physical store (Rohm & Swaminathan, 2004). In a physical store consumers can actually touch the product. While consumers in the online environment obtain information about a product via the product description, a video about the product, pictures of the product and word-of-mouth. For consumers word-of-mouth is one of the most important sources of information when it comes to products because consumers usually prefer information coming from other consumers over information coming from marketers (Sen & Lerman, 2007). This is mainly because the sender of the information does not need to persuade the receiver for his own benefits like marketers do. Therefore, word-of-mouth communication is more credible (Henricks, 1998).

Word-of-mouth on the internet, where it is referred to as electronic word-of-mouth (eWOM), can be defined as "any positive or negative statement made by a potential, actual, or former customer about a product or company, which is made available to a multitude of people and institutions via the internet" (Hennig-Thurau, Gwinner, Walsh & Gremler, 2004, p. 39). Generally, consumers share a product review to express either their satisfaction with a product or their dissatisfaction with a product (Sen & Lerman, 2007).

Examples of eWOM are product reviews on websites. Consumers who have previously purchased a certain product can share their experiences with the product with potential consumers who are interested in the product. The many different ways the internet offers people to interact with one another makes reviewing and sharing experiences a powerful tool for consumers.

Previous studies mainly researched the effects of a single positive or negative review. This study will further elaborate on a study by Doh and Hwang (2009) on the effects of different ratios of positive and negative reviews. This makes more sense for the field of eWOM research because online shops often feature more than one positive or negative review. The effect of a particular set of reviews is therefore more interesting and relevant to research than the impact of a single review.

This research will focus on the effect of the ratio of positive and negative reviews on purchase intention, attitude towards product, attitude towards website and the credibility of reviews. Doh and Hwang (2009) used the following ratios of positive to negative reviews: 10:0, 9:1, 8:2, 7:3 and 6:4. The present study will focus on the same amount of reviews (10) and roughly the same ratios (10:0, 8:2 and 6:4). Those ratios were chosen because they showed the most significant results in Doh and Hwang's study. The present study attempted to find new theoretical insights by elaborating on the study by Doh and Hwang (2009) and investigating if the effects differentiate for different product types, namely search and experience goods. A search good can be described as a product whose qualities can be more easily estimated prior to the purchase (Nelson, 1970). This is mainly because there is more information about the most important aspects of the product and this information is also more easily accessible. An experience good can be described as a product whose qualities are harder to be estimated prior to the purchase (Klein, 1998). Information about the most important aspects is more difficult to find and might also not be sufficient. Experience goods therefore involve a higher amount of risk if a consumer decides to purchase them online (Girard, Silverblatt & Korgaonkar, 2002). Doh and Hwang used a digital camera and movies in their study. However, they did not further elaborate on the different results for those products. The results of their study suggest that there are no significant differences between a 10:0, a 9:1 and a 8:2 ratio of positive to negative reviews with regards to purchase intention and attitude towards the product. However, a 10:0 ratio of positive to negative reviews does result in a significantly higher purchase intention and attitude towards the product compared to a 7:3 and a 6:4 ratio. Furthermore, they found that one or two negative reviews in a set of ten reviews have a more positive effect on attitude towards the website and the credibility of reviews compared to a totally positive set of reviews.

The purpose of this study is to find out if the results either support or challenge the results found by Doh and Hwang (2009) and to what extent product type plays a role with regards to these results. The combination of variables used in this study have not been used in previous studies, which demonstrates the possible contribution this study can have on the field of reviews. Therefore, the following research question was formulated: *To what extent do the ratio of positive and negative reviews and the type of product have an effect on purchase intention, attitude towards the product, attitude towards the website and the credibility of the reviews?*

2. Theoretical background

The theory provides relevant background information regarding the topic of this research in order to formulate relevant hypothesis. The following topics will be discussed: ratio and review valence, purchase intention, attitude towards website, attitude towards product, credibility of reviews, and product type.

One of the reasons consumers read reviews is to reduce risk (Chen, 2008). Because although online shopping has grown over the years, there is still more risks involved in shopping online than in shopping in a physical store. For consumers word-of-mouth is one of the most important sources of information when it comes to products because consumers usually prefer information coming from other consumers over information coming from marketers (Sen & Lerman, 2007). This is mainly because the sender of the information does not need to persuade the receiver for his own benefits like marketers do. Therefore, word-of-mouth communication is more credible (Henricks, 1998).

Risk is the anticipated possibility that the outcome leads to loss (Chiles & McMackin, 1996). Forsythe and Shi (2003) researched the perceived risk that is involved with online shopping. They found that the following risks are the most common: a financial risk, risk with regards to the product or service and the risk of time and convenience. Firstly, consumers perceive financial risk because the price the consumers pay for the product and the product itself are not exchanged at the same time. Usually the consumer transfers the money first, subsequently the seller sends the product. These transactions are more liable to technical issues and miscommunication. Consumers might fill out the wrong bank number or the wrong amount of money. Especially when consumers are not shopping at an established and reliable online shop (e.g. Bol.com or Zalando in the Netherlands), the product might be shipped late or not at all (Utz, Matzat & Snijders, 2009; Noort, Kerkhof & Fennis, 2008).

Secondly, it is harder to judge the product quality of a product online because it is more difficult for online retailers to duplicate the sensory experience a physical store can offer the consumer (Rohm & Swaminathan, 2004). Consumers can not touch the product before the purchase and the product might look different in the pictures (Utz, Matzat & Snijders, 2009; Noort, Kerkhof & Fennis, 2008).

Lastly, consumers experience a risk of time and convenience. Consumers might experience a risk if there is a time constraint regarding the product (e.g. a birthday present) (Forsythe &

Shi, 2003). For example, an online store might not be able to deliver the product in time or the consumer might not be at home at the time the product is delivered.

Ratio and review valence

Word-of-mouth on the internet, where it is referred to as electronic word-of-mouth (eWOM), can be defined as "any positive or negative statement made by a potential, actual, or former customer about a product or company, which is made available to a multitude of people and institutions via the internet" (Hennig-Thurau, Gwinner, Walsh & Gremler, 2004, p. 39). Generally, consumers share a product review to express either their satisfaction with a product or their dissatisfaction with a product (Sen & Lerman, 2007).

Examples of eWOM are product reviews on websites. Consumers who have previously purchased a certain product can share their experiences with the product with potential consumers who are interested in the product. The many different ways the internet offers people to interact with one another makes reviewing and sharing experiences a powerful tool for consumers.

Online reviews fluctuate in the direction of the communication. This is called review valence. If a review is predominantly positive that means that the review valence is positive, and the other way around. A positively valenced review typically consists of satisfying descriptions of experiences with the product. On the other hand, a negatively valenced review typically consists of descriptions of poor experiences with the product (Anderson, 1998). The overall valence of the reviews can also be neutral but this is less likely due to the fact that consumers have a tendency to share a product review to express either their satisfaction or dissatisfaction with a product (Sen & Lerman, 2007).

Dellarocas, Awad Farag and Zhang (2004) found a positive relation between review valence and consumer behavior. Consumers are more likely to purchase a positively reviewed product whilst they are less likely to purchase a negatively reviewed product. The research by Senecal and Nantel (2004) on review sites also supports this. They found out that consumers who gather information through review sites purchased a positively reviewed or recommended product twice as often as consumers who did not gather information.

Some studies, however, suggest that negative reviews relatively have a bigger impact on purchase intention than positive reviews (Chevalier & Mayzlin, 2006; Park & Lee, 2009). By this they mean that the impact of a negative review is bigger at decreasing the purchase intention than the impact of a positive review increasing the purchase intention. Richins

(1983) discovered that consumers tend to demotivate their friends from buying a product from a certain brand once they have had a bad experience with that brand.

Besides the valence of the review, the amount of reviews is also an important factor to consider. According to Yang and Mai (2010), the amount of reviews is often taken into consideration by consumers to estimate the quality of the product. They found that consumers tend to believe that a product is of higher quality once a certain product page contains more reviews than the page of other products. This is in line with Asch's (1951) experiment, in which he found that people have a tendency to comply with the majority. Ba and Pavlou (2002) found that consumers tend to look for a negative reviews when they are confronted with a large amount of positive reviews. This is because they want to know about the characteristic complications of a product. It is clear that the amount of reviews is important, the effect of the ratio of positive and negative reviews is underexposed in the research of reviews. Ratio can be described as "the amount of negative reviews compared to the total amount of reviews" (Lee, Park & Han, 2008, p.345).

Doh and Hwang (2009) researched the effects of ratio of reviews on purchase intention, attitude towards website, attitude towards product and the credibility of reviews. The ratios of positive to negative reviews they used were 10:0, 9:1, 8:2, 7:3 and 6:4. The results of their study suggests that there are no significant differences between a 10:0, a 9:1 and a 8:2 ratio of positive to negative reviews with regards to purchase intention and attitude towards the product. However, a 10:0 ratio of positive to negative reviews does result in a significantly higher purchase intention and attitude towards the product compared to a 7:3 and a 6:4 ratio. This implies that, although positive reviews are definitely needed to create a positive attitude towards the product and to increase the purchase intention, a few negative reviews in a set of positive reviews are not necessarily disadvantageous. Based on this and previous research, the following hypotheses were developed:

H1a: The purchase intention is higher for a 10:0 ratio than for a 8:2 ratio

H1b: The purchase intention is higher for a 8:2 than for a 6:4 ratio

H2a: The attitude towards the product is higher for a 10:0 ratio than for a 8:2 ratio H2b: The attitude towards the product is higher for a 8:2 ratio than for a 6:4 ratio

Credibility is crucial for online reviews since the review and reviewer have to be perceived as trustworthy if it has to serve as a proper recommendation regarding a purchase decision (McKnight & Kacmar, 2006). Cheung and Thadani (2012) define credibility as: "the perceived degree to which an eWOM review gives correct and believable information". Credibility can be subdivided in trustworthiness and expertise of the reviewer (Goldberg and Hartwick, 1990).

Prior research suggests that consumers find negative information more useful when it comes to estimating the credibility of reviews. When there is a substantial amount of positive reviews available, Ba and Pavlou (2002) found that negative reviews have a bigger impact on credibility than positive reviews. According to the negativity bias, neutral consumers and consumers with little knowledge have a tendency to take negative reviews more seriously than positive reviews (Mizerski, 1982). Because the internet offers many alternatives for products, consumers have a tendency to rather avoid the risk than to take the risk (Highhouse & Paese, 1996).

The website of an online shop also plays an important role in the decision making process. Consumers establish an attitude towards the website based on the interaction with the website (Sultan, Urban, Shankar & Bart, 2002). Fung and Lee (1999) state that the quality of the website and sufficient product information are factors that determine the attitude towards the website. Reviews on a well-established website (e.g. Amazon) have a bigger effect on the consumer decision making process than reviews on the website of a new online shop (Park & Lee, 2009). This is mainly because Amazon has a proven reputation of being a trustworthy online shop, whilst a new online shop does not have this reputation. This can even cause consumers to be sceptical with regards to the intentions of the online shop. For example, Chevalier and Mayzlin (2006) state that online shops can and do manipulate reviews in order to simulate the idea of a trustworthy online shop.

Doh and Hwang (2009) found that one or two negative reviews have a more positive effect on attitude towards the website and the credibility of reviews compared to a totally positive set of reviews. They imply that consumers might get the impression that reviews have been manipulated in favor of the website when a set of reviews is completely positive. Which can result in mistrust and uncertainty. Based on this and previous research, the following hypotheses were developed:

H3a: The attitude towards the website is higher for a 8:2 ratio than for a 10:0 ratio

H3b: The attitude towards the website is higher for a 10:0 than for a 6:4 ratio

H4a: The credibility of the reviews is higher for a 8:2 ratio than for a 10:0 ratio

H4b: The credibility of the reviews is higher for a 10:0 ratio than for a 6:4 ratio

Product type

Whether consumers decide to purchase a certain product online or in a physical store also depends on the type of product (Vijayasarathy, 2002). A product which qualities can be more easily estimated prior to purchase is more suited for online shopping than a product whose qualities are harder to estimate prior to purchase. A product differentiation which is often used in marketing research is the one recommended by Nelson (1970), who distinguished search goods and experience goods. A search good can be described as a product whose qualities can be more easily estimated prior to the purchase. This is mainly because there is more information about the most important aspects of the product and this information is also more easily accessible. Which means there is a smaller amount of risk involved if a consumer decides to purchase a search good online. An example of a search good are computer accessories.

An experience good can be described as a product whose qualities are harder to be estimated prior to the purchase (Klein, 1998). Information about the most important aspects is more difficult to find and might also not be sufficient. Experience goods therefore involve a higher amount of risk if a consumer decides to purchase them online (Girard, Silverblatt & Korgaonkar, 2002). Which means that consumers might find it convenient to test and touch an experience good before they decide to purchase the product. Examples of experience goods are clothes and perfume.

Several researchers suggest that consumers might interpret reviews for search goods and experience goods differently (Sen & Lerman, 2007; Park & Han, 2008). The review of an experience good depends on the person who is reviewing the product. Qualities or flaws of an experience good do not necessarily have to be associated with the product but also depend on the preferences of the reviewer. Therefore consumers tend to associate a positive or negative review of an experience with the reviewer instead of the product (Hao, Ye, Li & Cheng, 2010). This is not the case for search goods. Because of the homogenous and straightforward

qualities of search products a positive or negative review is more often associated with the product itself. According to Sen and Lerman (2007) the impact of a positive review is bigger when review can be associated with the product. Which means the effect of a positive review is bigger for search goods than for experience goods. With regards to effects of product type on purchase intention and attitude towards the product, the following hypotheses were developed:

H5: In an online context the purchase intention is higher for a search good than for an experience good

H6: In an online context the attitude towards a search good is higher than the attitude towards an experience good

Involvement, prior product knowledge and attitude towards reviews

Other factors that might have an effect on the outcomes of this study are product involvement and prior knowledge about the product. These two variables are often taken into account when researching online reviews. Consumers have a tendency to process information more extensively when they are more involved with a product (Richins & Root-Shaffer, 1988). This is further explained by Petty and Cacioppo (1986) and their Elaboration Likelihood Model. This model explains that someone receives and perceives a message via the central route when they are more involved, which means they pay more attention to the meaning of the message. Whilst people pay more attention to the context when they receive and perceive a message via the peripheral route, which means they are less involved. With regards to reviews this means that involved consumers will pay more attention to the arguments presented in reviews. When consumers are not involved they will pay more attention to the context of the reviews.

Prior knowledge about the product also plays a role with regards to reviews. Consumers with prior knowledge about the product will have more assurance about the reviews when they read reviews that confirm the information they already know about the product and will consequently use that information for an eventual purchase decision (Zeithaml, 1988; Crocker, 1981; Alloy & Naomi, 1984). Fogg (2003) found that the perceived credibility of the information is significantly higher when the prior knowledge about the product is confirmed in the reviews. Attitude towards reviews was also taken into consideration. Results might

differ for consumers who never read reviews when they purchase a product online compared to consumers who always rely on reviews when purchasing a product online.

Conceptual model

Figure 1. shows the conceptual model that will be used to find an answer to the research question. There have been several studies on the effects of reviews and product type. However, none of these studies focused on the fact that review sites have multiple reviews and that different ratios of positive and negative reviews might have different effects. Ratios with more positive reviews will have a more positive effect on purchase intention and attitude towards the product (Doh and Hwang, 2009), but to what extent is the effect bigger or smaller for a search good compared to an experience good? To further elaborate on the study by Doh and Hwang (2009), the present study will focus on the same amount of reviews (10) and roughly the same ratios (10:0, 8:2 and 6:4). Therefore, the following research question has been developed:

RQ: To what extent does the ratio of positive and negative reviews and the type of product have an effect on purchase intention, attitude towards the product, attitude towards the website and the credibility of the reviews

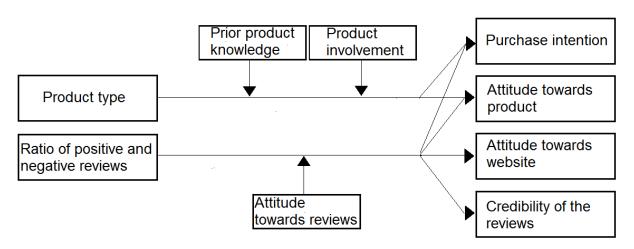


Figure 1. Conceptual model

3. Method

Design

This research consists of a 3 (Ratio of positive and negative reviews: 10:0 versus 8:2 versus 6:4) x 2 (Product type: Search good vs. Experience good) experimental design. Therefore this research consisted of six different conditions (figure 1).

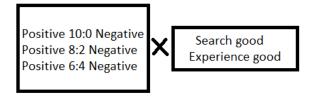


Figure 2. Experimental design

Material

Products

With the aid of a pre-test a search good and an experience good for this study were determined. This was necessary to ensure that product manipulation would be successful. 15 people participated in this pre-test, eight men and seven women, varying in age from 18 to 56 years old. The pre-test consisted of eight products, four search goods and four experience goods. The price of the products was taken into consideration to ensure that price would not play a role in a later stage of the research. This classification was based on Sebastianelli, Tamimi and Rajan (2007) classification of search and experience goods. The following eight products were chosen for the pre-test:

Search goods	Experience goods
External harddrive	Perfume
Tablet cover	Shoes
Anti-virus software	Matress
Printer	DVD Box

Table 1. Product types pre-test

A seven points Likert scale was used to determine the most suitable products. Answer possibilities ranged from 1 = 'Totally disagree' to 7 = 'Totally agree'. The scale consisted of

the four following statements: 'The quality of this kind of product can be judged before the purchase', 'The quality of this kind of product can only be judged after the purchase', 'There is a certain risk involved when purchasing this kind of product', 'There is a certain amount of uncertainty involved when purchasing this kind of product' (De Vries & Pruyn, 2007). Results of the pre-test ($\alpha = 0.77$) are shown in table 2. An experience good typically has a high score whilst a search good typically has a low score. Table 2 shows that a tablet cover is the most suitable as a search good and that running shoes are the most suitable as an experience good.

Product	Mean	Standard deviation
Running shoes (Experience good)	5.12	0.54
Matress (Experience good)	4.90	0.48
Perfume (Experience good)	4.15	0.39
Anti-virus software (Search good)	4.02	0.48
Printer (Search good)	3.98	0.72
External harddrive (Search good)	3.62	0.56
DVD Box (Experience good)	3.32	0.48
Tablet cover (Search good)	3.32	0.64

Table 2. Results pre-test

Reviews

The reviews which were used in the experiment were real reviews of running shoes and tablet covers. In some cases they were slightly altered because they had to be either completely positive or completely negative. Furthermore, some alterations were made in case the brand of the product was mentioned or to make sure the reviews were roughly of the same length. A non-interactive webpage was designed to replicate an online shop. This webpage consisted of a brief description of the product, the price of the product, a picture of the product and the reviews. The prices of the products were both the same. Furthermore, either a one star or a five star rating was added to the reviews to make it more clear that a review was completely positive or negative. An complete overview of the webpages and reviews which were used in this study can be found in the appendix.

Manipulation checks

Two checks were performed to verify that the ratio of the reviews and product type were manipulated successfully. The manipulation of the ratio of reviews was measured by using a seven point bipolar scale with the opposing description 'negative-positive'. The manipulation of the product type was measured using a seven point Likert scale consisting of the following statements: 'The quality of this kind of product can be judged before the purchase', 'The quality of this kind of product can only be judged after the purchase', 'There is a certain risk involved when purchasing this kind of product' and 'There is a certain amount of uncertainty involved when purchasing this kind of product'. This scale proved to be reliable (Cronbach's alpha: .80)

A factorial between groups analysis of variance (ANOVA) was performed to check if the manipulations succeeded. This test showed that the manipulation of the reviews succeeded, F (2, 201) = 79,56, p = .00. Participants who were shown a webpage with a 10:0 ratio of positive to negative reviews (M=6.54, SD=0.85) rated the reviews significantly more positive than participants who were shown a webpage with a 8:2 ratio (M=5.82, SD=0.95). Participants who were shown a webpage with a 8:2 ratio of positive to negative reviews (M=5.82, SD=0.95) rated the reviews as more positive than the participants who were shown a webpage with a 6:4 ratio (M=4.56, SD=0.98).

This check also showed that the manipulation of the product type succeeded, F (1, 202) = 29,402, p = .00. Participants rated the running shoe (M=5.01, SD=0.98) significantly higher than the tablet cover (M=4.15, SD=1.26) on the product type scale.

Procedure and respondents

Participants were approached via social media and email to fill out the questionnaire. The link that led participants to the questionnaire randomly assigned participants to one of the six conditions. The conditions differentiated in the ratio of positive and negative reviews (10:0, 8:2 and 6:4) and type of product (tablet cover and running shoes).

Firstly, participants were introduced to the subject of this study and were explained that their submission is completely anonymous and strictly meant for the purposes of this study. Then participants were asked to fill out some demographic information; their age, gender and educational level. Subsequently, participants were requested to take an extensive look at the product page and pay attention to the reviews. Finally, participants were asked to

fill out questions regarding the product, reviews, purchase intention, product attitude, website attitude, credibility, prior product knowledge, involvement and review attitude.

The sample for this study originally consisted of 346 participants. However, due to a technical issue within Qualtrics, many participants were not able to see the product page clearly on mobile devices. Those participants were not able to read the reviews and decided to quit the questionnaire. This was because they would not be able to answer the questions with regards to the reviews properly without being able to see the product page. Therefore, the results of 142 participants were removed after the problem was reported by participants. The remaining sample consisted of 204 participants. 116 female participants (56.9%) and 88 male participants (43.1%). The average age of the participants was 36 years old, ranging from 15 to 65 years old. Most of the participants followed University education (37.7%), followed by Professional education (37.3%), Vocational education (14.2%), High school (10.3%) and other (0.5%). An overview of the demographic statistics of the participants is presented in table 3.

Condition	1	2	3	4	5	6	Total
N	34	34	34	34	34	34	204
Age (mean)	37.3	35	37	34.4	31.8	38.4	35.7
Gender							
Male	41.2%	55.9%	44.1%	35.3%	35.3%	47.1%	43.1%
Female	58.8%	44.1%	55.9%	64.7%	64.7%	52.9%	56.9%
Education							
High school	8.7%	2.9%	17.6%	8.7%	8.7%	14.7%	10.3%
Vocational education	26.5%	17.6%	11.8%	14.7%	8.8%	5.9%	14.2%
Professional education	29.4%	44.1%	44.1%	32.4%	35.3%	38.2%	37.3%
University education	35.3%	35.3%	26.5%	44.1%	47.1%	38.2%	37.7%
Other	0%	0%	0%	0%	0%	2.9%	0.5%

Table 3. Demographic statistics of the participants

Measures

The dependent variables used by Doh and Hwang (2009) were purchase intention, attitude towards product, attitude towards website and credibility of the reviews. These dependent variables were also measured in the present study. However, Doh and Hwang did not mention the scales that they used to measure these variables, that is why the present study used scales from other studies. Items within every scale were recoded to ensure validity of the scales. The following scales were used to measure these dependent variables:

Purchase intention

Purchase intention was measured using a seven point Likert scale developed by Baker and Churchill (1977), ranging from 1 = Totally disagree to 7 = Totally agree. The construct was measured using five statements: 'After reading the online reviews, it makes me desire to buy the product', 'I will consider buying the product after I read the online reviews', 'I intend to try the product discussed in the online reviews', 'In the future, I intend to seek out the product discussed in the online reviews' (recoded) and 'In the future, I intend to buy the product discussed in the online reviews'. This scale proved to be reliable (Cronbach's alpha: .86).

Attitude towards product

Attitudes towards product was measured using a seven point bipolar scale using five items. The five opposing descriptions of the product were: good-bad, *interesting-uninteresting* (recoded), pleasant-unpleasant, satisfying-unsatisfying and attractive-unattractive (Chang & Thorson, 2004; Lee, Park & Han, 2008). This scale proved to be reliable (Cronbach's alpha: .84).

Attitude towards website

Attitude towards website was measured using the same seven point bipolar scale used to measure attitude towards product. This scale proved to be reliable (Cronbach's alpha: .87)

Crediblity of the reviews

Credibility was measured using a seven points Likert scale developed by Cheung, Lee and Rabjohn (2008). The scale consisted of the following statements: 'The reviews are useful and give me a better possibility to judge the quality of product', 'The reviewers have experienced

the product and know what they are talking about', 'The reviewers are sincere' and 'I trust that the reviewers have been honest' (recoded). This scale proved to be reliable (Cronbach's alpha: .75).

Covariates

Apart from ratio and product type, there may be other variables affecting the dependent variables. Product involvement and prior knowledge about the product are two variables which were often taken into account when researching online reviews. Consumers have a tendency to process information more extensive when they are more involved with a product (Richins & Root-Shaffer, 1988). Attitude towards reviews will also be measured, because there may be different effects between participants with a different attitude towards reviews. The following scales were used to measure the possible effect of the control variables:

Involvement

Involvement of the respondent with the product was measured using a seven point bipolar scale (Zaichkowsky, 1985). The scale consisted of the following opposing descriptions: 'important-not important', 'relevant-irrelevant', 'valuable-worthless', 'means a lot to memeans nothing to me' (recoded), 'interesting-uninteresting'. Participants with an average score of 4 or lower are categorized as low involvement, whilst participants with an average score of higher than 4 are categorized as high involvement. This scale proved to be reliable (Cronbach's alpha: .90)

Prior product knowledge

Prior knowledge of the product was measured using a seven point Likert scale developed by Chang (2004). The scale consisted of the following statements: 'I know a lot about this product', 'I see myself as an expert on this product', 'I know more about this product than my friends' (recoded) and 'I usually spend a lot of attention to information about this product'. Participants with an average score of 4 or lower are categorized as a low amount of prior product knowledge, whilst participants with an average score of higher than 4 are categorized as a high amount of prior product knowledge. After removing the third statement, this scale proved to be reliable (Cronbach's alpha: .76)

Attitude towards reviews

Attitude towards reviews was measured using a seven point Likert scale developed by Park and Kim (2008). The scale consisted of the following statements: 'When I purchase a product online, I always read the reviews on the website', 'When I purchase a product online the reviews are often very useful when it comes to deciding which product I want to buy' (recoded), 'When I purchase a product online, I perceive less risk when I can read reviews' and 'When I purchase a product online without reading reviews, I often worry about the choice I made'. This scale proved to be unreliable (Cronbach's alpha: .69). This means that the results of this scale were not taken into account during the analysis.

4. Results

Data analysis

For this study, SPSS was used to analyse the data which was collected in Qualtrics. Mean scores of the different measures were computed to analyse the relevant data for this study. Factorial between groups analysis of variances (ANOVA) were performed to test the main effect and interaction effect of the ratio of positive and negative reviews and product type on the purchase intention, product attitude, website attitude and credibility.

Purchase intention

A factorial between groups analysis of variance (ANOVA) was used to compare the purchase intention of six groups of participants: (1) participants who were shown a product page of running shoes with a 10:0 ratio of positive to negative reviews, (2) participants who were shown a product page of running shoes with a 8:2 ratio, (3) participants who were shown a product page of running shoes with a 6:4 ratio, (4) participants who were shown a product page of a tablet cover with a 10:0 ratio, (5) participants who were shown a product page of a tablet cover with a 8:2 ratio, (6) participants who were shown a product page of a tablet cover with a 6:4 ratio. Additionally a Levene's test was conducted to check the assumption of homogeneity of variance. This test showed that the supposition was correct. The results of the factorial between groups analysis of variance (ANOVA) are shown in table 4.

		Produ	uct	
		Tablet cover	Total	
	10:0	4.75 (1.24)	4.35 (1.27)	4.55 (1.26)
Ratio	8:2	4.81 (.91)	4.03 (1.31)	4.42 (1.19)
	6:4	3.88 (1.38)	3.33 (1.26)	3.61 (1.34)
	Total	4.48 (1.25)	3.90 (1.34)	4.19 (1.32)

Table 4. Results of the factorial between groups analysis of variance (ANOVA) for ratio/product type and purchase intention

The main effect of the ratio of reviews on the purchase intention was statistically significant, F(2, 198) = 11.58, p = .00. A Post Hoc LSD-test was performed to find out which differences between the groups were significant. The difference in purchase intention for participants who were shown a product page with a 10:0 ratio of positive to negative reviews (M = 4.55, SD = 10.0).

1.26) was not significantly higher than participants who were shown a product page with a 8:2 ratio of positive to negative reviews (M = 4.42, SD = 1.19). This means H1a was not supported.

However, participants who were shown a product page with a 10:0 (M = 4.55, SD = 1.26) and a 8:2 (M = 4.42, SD = 1.19) ratio of positive to negative reviews had significantly more intention to purchase the product than participants who were shown a product page with a 6:4 ratio of positive to negative reviews (M = 3.61, SD = 1.34). This means H1b was supported.

The main effect of product type on the purchase intention was statistically significant, F (1, 198) = 11.09, p = .00. Participants who were shown a product page with a tablet cover (M = 4.48, SD = 1.25) had a higher intention to purchase the product than participants who were shown a product page with running shoes (M = 3.90, SD = 1.34). This means H5 was supported. There was no interaction between ratio and product type, F (2, 198) = .40, p = .67.

Furthermore, there was no interaction between product type and involvement, F (1, 200) = .02, p = .90. Lastly, there was no interaction between product type and prior product knowledge, F (1, 200) = .01, p = .94.

Product attitude

A factorial between groups analysis of variance (ANOVA) was used to compare the attitude towards the product of six groups of participants. Additionally a Levene's test was conducted to check the assumption of homogeneity of variance. This test showed that the supposition was correct. The results of the factorial between groups analysis of variance (ANOVA) are shown in table 5.

		Pro	duct	
		Tablet cover Running shoes		Total
	10:0	4.92 (1.15)	4.78 (.79)	4.85 (.98)
Ratio	8:2	5.01 (.72)	4.24 (.91)	4.62 (.90)
	6:4	4.24 (.90)	3.90 (.97)	4.07 (.94)
	Total	4.72 (.99)	4.30 (.95)	4.51 (.99)

Table 5. Results of the factorial between groups analysis of variance (ANOVA) for ratio/product type and product attitude

The main effect of the ratio of reviews on the product attitude was statistically significant, F (2, 198) = 12.98, p = .00. A Post Hoc LSD-test was performed to find out which differences between the groups were significant. The difference in attitude towards the product by participants who were shown a product page with a 10:0 ratio of positive to negative reviews (M = 4.85, SD = 0.98) was not significantly higher than by participants who were shown a product page with a 8:2 ratio of positive to negative reviews (M = 4.62, SD = 0.90). This means H2a was not supported.

However, participants who were shown a product page with a 8:2 ratio of positive to negative reviews (M = 4.62, SD = 0.90) did have a significantly attitude towards the product than participants who were shown a product page with a 6:4 ratio of positive to negative reviews (M = 4.07, SD = 0.94). This means H2b was supported.

The main effect of product type on the product attitude was statistically significant, F (1, 198) = 10.73, p = .00. Participants who were shown a product page with a tablet cover (M = 4.72, SD = 0.99) had a higher product attitude than participants who were shown a product page with running shoes (M = 4.30, SD = 0.95). This means H6 was supported. There was no interaction between ratio and product type, F (2, 198) = 2.14, p = .12.

Furthermore, there was no interaction between product type and involvement, F (1, 200) = .01, p = .93. Lastly, there was no interaction between product type and prior product knowledge, F (1, 200) = .51, p = .48.

Website attitude

A factorial between groups analysis of variance (ANOVA) was used to compare the attitude towards the website of six groups of participants. Additionally a Levene's test was conducted to check the assumption of homogeneity of variance. This test showed that the supposition was correct. The results of the factorial between groups analysis of variance (ANOVA) are shown in table 6.

		Pro	duct	
	Tablet cover Running shoes		Total	
	10:0	4.66 (1.05)	4.59 (1.17)	4.63 (1.11)
Ratio	8:2	4.69 (.99)	4.66 (1.00)	4.67 (.99)
	6:4	4.36 (.95)	4.37 (.93)	4.37 (.94)
	Total	4.57 (1.00)	4.54 (1.04)	4.56 (1.02)

Table 6. Results of the factorial between groups analysis of variance (ANOVA) for ratio/product type and website attitude

The main effect of the ratio of reviews on the attitude towards the website was not statistically significant, F(2, 198) = 1.78, p = .17. The main effect of product type on the attitude towards the website was not statistically significant, F(1, 198) = 0.55, p = .82. There was no interaction between ratio and product type, F(2, 198) = .028, p = .97.

Furthermore, there was no interaction between product type and involvement, F (1, 200) = 2.32, p = .13. Lastly, there was no interaction between product type and prior product knowledge, F (1, 200) = 1.55, p = .22.

Credibility

A factorial between groups analysis of variance (ANOVA) was used to compare the perceived credibility of the reviews by the following six groups of participants. Additionally a Levene's test was conducted to check the assumption of homogeneity of variance. This test showed that the supposition was correct. The results of the factorial between groups analysis of variance (ANOVA) are shown in table 7.

		Pro	duct	
		Tablet cover	Running shoes	Total
	10:0	4.54 (1.09)	4.61 (.99)	4.58 (1.04)
Ratio	8:2	5.21 (.62)	4.73 (1.14)	4.97 (.94)
	6:4	4.66 (.92)	4.44 (1.08)	4.55 (1.00)
	Total	4.80 (.94)	4.59 (1.07)	4.70 (1.01)

Table 7. Results of the factorial between groups analysis of variance (ANOVA) for ratio/product type and credibility

The main effect of the ratio of reviews on the perceived credibility of the reviews was statistically significant, F(2, 198) = 3.77, p = .03. A Post Hoc LSD-test was performed to find out which differences between the groups were significant. Participants who were shown a product page with a 8:2 ratio of positive to negative reviews (M = 4.97, SD = 0.94) had a higher perceived credibility of the reviews than participants who were shown a product page with a 10:0 ratio of positive to negative reviews (M = 4.58, SD = 1.04). This means that H4a is supported. The difference in perceived credibility by participants who were shown a product page with a 10:0 ratio of positive to negative reviews (M = 4.58, SD = 1.04) was not significantly higher than by participants who were shown a product page with a 6:4 ratio of positive to negative reviews (M = 4.58, M = 4.58). This means that H4b was not supported.

The main effect of product type on the perceived credibility was not statistically significant, F(1, 198) = 2.32, p = .13. There was no interaction between ratio and product type, F(2, 198) = 1.29, p = .28.

Furthermore, there was no interaction between product type and involvement, F (1, 200) = 1.65, p = .20. Lastly, there was no interaction between product type and prior product knowledge, F (1, 200) = .29, p = .59.

Hypothesis

Table 8 shows an overview of the supported and unsupported hypothesis of this study.

Hypothesis	Supported?
H1a: The purchase intention is higher for a 10:0 ratio than for a 8:2	No
ratio	
H1b: The purchase intention is higher for a 8:2 ratio than for a 6:4	Yes
ratio	
H2a: The attitude towards the product is higher for a 10:0 ratio than	No
for a 8:2 ratio	
H2b: The attitude towards the product is higher for a 8:2 ratio than	Yes
for a 6:4 ratio	
H3a: The attitude towards the website is higher for a 8:2 ratio than for	No
a 10:0 ratio	
H3b: The attitude towards the website is higher for a 10:0 than for a	No
6:4 ratio	
H4a: The credibility of the reviews is higher for a 8:2 ratio than for a	Yes
10:0 ratio	
H4b: The credibility of the reviews is higher for a 10:0 ratio than for a	No
6:4 ratio	
H5: In an online context the purchase intention is higher for a search	Yes
good than for an experience good	
H6: In an online context the attitude towards a search good is higher	Yes
than the attitude towards an experience good	

Table 8. Overview of the hypothesis

5. Discussion of results

The purpose of this study was to research to what extent the ratio of positive and negative reviews has an effect on purchase intention, credibility of the reviews and the attitude towards the product and the website. Furthermore, the influence of product type on these effects was studied.

Discussion of results

Similar to the research by Doh and Hwang (2009), the findings of this study also show that the purchase intention and attitude towards the product are not significantly higher for a completely positive set of ten reviews compared to a set of eight positive reviews and two negative reviews. This means that, although positive reviews are definitely needed to create a positive attitude towards the product and to increase the purchase intention, a few negative reviews in a set of positive reviews are not necessarily disadvantageous. Furthermore, the findings show that the purchase intention and attitude towards the product is significantly higher for set of eight positive reviews and two negative reviews compared to a set of six positive reviews and four negative reviews. This suggests that, although a few negative reviews do not necessarily have to be disadvantageous, the ratio of positive to negative reviews can have a negative impact on the purchase intention and the attitude towards the product once the positive reviews in the set are not a clear majority. These results correspond with the findings of Dellarocas, Awad Farag and Zhang (2004). They state that consumers are more likely to purchase a positively reviewed product than a negatively reviewed product. For consumers word-of-mouth is one of the most important sources of information when it comes to products because consumers usually prefer information coming from other consumers over information coming from marketers (Sen & Lerman, 2007). This is mainly because the sender of the information does not need to persuade the receiver for his own benefits like marketers do. Therefore word-of-mouth communication is more credible (Henricks, 1998). This explains why the purchase intention and attitude towards the product is higher when the clear majority of the reviews is positive.

Furthermore, this study also shows similar results to Doh and Hwang (2009) with regards to the effect of the ratio of positive to negative reviews on the credibility of the reviews. The findings suggest that the perceived credibility of the reviews is significantly higher for a set of

eight positive reviews and two negative reviews compared to a completely positive set of ten reviews. This finding can be attributed to Doh and Hwang's (2009) implication that consumers might get the impression that reviews have been manipulated in favour of the website when a set of reviews is completely positive. Additionally, Chevalier and Mayzlin (2006) stated that online shops can and do manipulate reviews in order to simulate the idea of a trustworthy online shop. A suspicion of manipulation can ultimately result in mistrust and uncertainty with regards to the intentions of the online shop. This is especially the case when an online shop is not as well-established yet (Park & Lee, 2009). Positive sets of reviews on a well-established online shop (e.g. Amazon) would not be as suspicious as a completely positive set of reviews on a new online shop.

In general, a single standalone negative review can have a negative impact on the attitude towards the product, the purchase intention and the perceived credibility of the reviews. However, two negative reviews in a set of ten reviews can even be advantageous as it does not necessarily influence the attitude towards the product and the purchase intention but it has a positive influence on the perceived credibility of the reviews.

With regards to product type, the findings of this study show that the purchase intention and attitude towards the product are significantly higher for search goods than experience goods. This corresponds with the findings of Sen and Lerman (2007) and Park and Han (2008). They claim that consumers might interpret reviews for search goods and experience goods differently. Qualities or flaws of an experience good do not necessarily have to be associated with the product but also depend on the preferences and characteristics of the reviewer. Therefore consumers tend to associate a positive or negative review of an experience with the reviewer instead of the product (Hao, Ye, Li & Cheng, 2010). This is not the case for search goods. Because of the homogenous and straightforward qualities of search products a positive or negative review is more often associated with the product itself. According to Sen and Lerman (2007) this means that the impact of a positive review is bigger when reviews can be associated with the product. Which means the effect of reviews is bigger for search goods than for experience goods. Another possible explanation for the higher purchase intention and attitude towards the product is the fact that the qualities of a search good can be more easily estimated prior to the purchase (Nelson, 1970). This is mainly because there is more information about the most important aspects of the product and this information is also more

easily accessible. Which means there is a smaller amount of risk involved if a consumer decides to purchase a search good online.

Prior product knowledge and product involvement had no moderating effects with regards to product type in this study. This means that involved participants and participants with prior product knowledge did not show any significantly different results that participants with less involvement or participants with less prior product knowledge. An explanation for this is the type of products that were used in this study. Participants might be more involved with a product they are more interested in, for example a car or a holiday destination.

Finally, the findings showed no significant interaction between the ratio of positive to negative reviews and product type. This means that the effects of the ratio of positive and negative reviews on purchase intention, credibility of the reviews and the attitude towards the product and website were not influenced by the product type. The results show that the purchase intention and attitude towards the product are significantly higher for search goods than experience goods. However, the purchase intention and attitude towards the product are not significantly higher depending on the ratio.

Theoretical contribution

The aim of this study was to give more insight regarding online reviews, ratio of positive to negative reviews and product type. There are many studies involving reviews, valence and product. However, the combination of ratio of reviews and product type has not been researched before. This study shows that the ratio of positive and negative reviews and the product type have an impact on the purchase intention, the attitude towards the product and the credibility of the reviews. Therefore, this study shows that it should be taken into consideration for future research. When more researchers investigate the influence of ratio of positive and negative reviews in combination with different products and product types with similar results, it will allow researchers to draw a more generalizable conclusion with regards to the effects of ratio of positive and negative reviews.

Practical implications

The results of this study presents a couple of recommendations that can benefit online shops, these recommendations are presented in this section. Previous research has already proven that online reviews have become more crucial in a consumer's decision making process.

This study proved that the ratio of positive and negative reviews plays an important role with regards to purchase intention, attitude towards the product and the credibility of the reviews. Those insights can be relevant for online shops.

Firstly, it is advisable to request consumers to write reviews. This study showed that one or two negative review in a set of multiple positive reviews are not necessarily disadvantageous with regards to purchase intention and attitude towards the product. Therefore, online shops should not be afraid to receive a negative review on a product. Moreover, to gain credibility it is even advantageous to have a couple of negative reviews in order to avoid the suspicion of mistrust. This is because consumers might get suspicious when a product has a set of completely positive reviews.

Furthermore, this study showed that the effect of reviews on the attitude towards the product and purchase intention is bigger for search goods than for experience goods. This is mainly because the qualities of a search good can be more easily estimated prior to purchase than the qualities of an experience good. It is advisable for online stores to make it easier for consumers to estimate the qualities of an experience good prior to purchase. In case of running shoes for example, it might be helpful to know which size they wear with other shoe brands, how often they run with regards to durability and if they have narrow or wide feet. The lack of that kind of information often prevents consumers from buying an experience good like running shoes online. Therefore, in order to replicate the physical store as much as possible it is also advisable to add as much information about the product on the webpage as possible.

Limitations and future research

Although this study adds more knowledge to the research of reviews and ratio of positive to negative reviews, it is important to take the limitations with regards to stimulus and data collection, generalisability into account. The limitations of this study might present possibilities for future research.

The first limitation is that this study used scenarios in which the participants had to imagine to be interested in the product. Otherwise the results regarding purchase intention and attitude

towards the product would be influenced because participants simply do not like the product. Nonetheless, scenarios are not as realistic as a real life situation which has to be taken into consideration when generalizing the findings of this study. Also because in reality consumers often use reviews in addition to for example extensive product information, price comparisons, reviews from other websites and recommendations by acquaintances. The results might have been influenced by presenting the participants with less information than they usually have available to them.

Another limitation of this study is the fact that only two products were used, a tablet cover and running shoes. This means it is difficult to generalize the findings because every product has their own particular set of characteristics. Therefore it is recommended for future research to use different products and product types, for example a hedonic and an utilitarian product. Prior research in the field of marketing and psychology states that in spite of the content of the review, attributes of the reviewer have an effect on how a consumer estimates the qualities of a product (Cohen, 2003; Kang & Kerr, 2006). Therefore, it is interesting for future research about the ratio of positive and negative reviews to investigate different aspects of reviews. For example the experience with the product by the reviewer, the order of positive and negative reviews or the amount of personal information about the reviewer. This will provide a more extensive overview of how consumers rate the credibility of reviews, how they develop their intention to purchase the product and their attitude towards the product and website.

Conclusion

This study showed that although positive reviews are definitely needed to create a positive attitude towards the product and to increase the purchase intention, a few negative reviews in a set of positive reviews are not necessarily disadvantageous. Furthermore, two negative reviews in a set of ten reviews can even be advantageous because it has a positive influence on the perceived credibility of the reviews. This is because consumers might get the suspicion that the reviews have been manipulated, especially if the online shop is not well-established yet. Finally, in an online context, reviews have a more positive effect on the purchase intention and attitude towards the product of search goods than of experience goods.

References

Alloy, L.B., & Naomi, T. (1984). Assessment of covariation by humans and animals: The joint infl uence of prior expectations and current situational information. *Psychological Review*, *91*(1), 112–149.

Anderson, E. (1998). Customer satisfaction and word of mouth. *Journal of Service Research*, *1*(1), 5-17.

Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgments. In H. Guetzkow (Ed.), *Groups, Leadership and Men* (pp. 177-190). Pittsburgh, PA: Carnegie Press.

Ba, S., & Pavlou, P.A. (2002). Evidence of the effect of trust building technology in electronic markets: price premiums and buyer behavior. *MIS Quarterly* 26(3), 243–268.

Baker, M.J., & Churchill, G.A. (1977). The impact of physically attractive models on advertising evaluations. *Journal of Marketing Research*, 14(4), 538-555.

Chang, C. (2004). The interplay of product class knowledge and trial experience in attitude formation. *Journal of Advertising*, 33(1), 83-92.

Chang, Y., & Thorson, E. (2004). Television and web advertising synergies. *Journal of Advertising*, 33(2), 75-84.

Charlett, D., Garland, R. & Marr, N. (1995). How damaging is negative word of mouth? *Marketing Bulletin*, 6, 42-50.

Chen, Y. (2008). Herd behavior in purchasing books online. *Computers in Human Behavior*, 24(5), 1977-1992.

Cheung, C.M.K., & Thadani, D.R. (2012). The impact of electronic word of mouth communication: A literature analysis and integrative model. *Decision, support, systems*, 54(1), 461-470.

Cheung, C.M.K., Lee, M.K.O., & Rabjohn, N. (2008). The impact of electronic word-of-mouth. *Internet Research*, 18(3), 229.

Chevalier, J.A., & Mayzlin, D. (2006). The Effect of Word of Mouth on Sales: Online Book Reviews. *Journal of Marketing Research*, 43(3), 345-354.

Chiles, T.H., & McMackin, J.F. (1996). Integrating variable risk preferences, trust, and transaction cost economics. *Academy of Management Review*, *21*(1), 73–99.

Cohen, G. (2003). Party over policy: The dominating impact of group influence on political beliefs. *Journal of Personality and Social Psychology*, 85(5), 808–822.

Crocker, J. (1981) Judgment of covariation by social perceivers. *Psychological Bulletin*, 90 (9), 272–292.

De Vries, P.W., & Pruyn, A.T.H. (2007). Source Salience and the Persuasiveness of Peer Recommendations: The Mediating Role of Social Trust. In: De Kort, Y., Ijsselsteijn, W., Midden, C., Eggen, B., & Fogg, B.J. (Eds.), *Persuasion 2007, LNCS 4744*, 164–175. Berlin Heidelberg: Springer-Verlag.

Doh, S.J., & Hwang, J.S. (2009). How Consumers Evaluate eWOM (Electronic Word-Of-Mouth) Messages. *Cyberpsychology & Behavior*, 12(2), 193-197.

East, R., Hammond, K., & Lomax, W. (2008). Measuring the impact of positive and negative word of mouth on brand purchase probability. *International Journal of Research in Marketing*, 25(3), 215-224.

Fogg, B.J. (2003). *Persuasive Technology: Using Computers to Change What We Think and Do.* San Francisco: Morgan Kaufmann.

Forsythe, S., & Shi, B. (2003). Consumer patronage and risk perceptions in internet shopping. *Journal of Business Research*, 56(11), 867 – 875.

Fung, R.K.K., & Lee, M.K.O. (1999). EC-Trust (Trust in Electronic Commerce): Exploring the Antecedent Factors. *Proceedings of the Fifth Americas Conference on Information Systems*, 517–519.

Girard, T., Silverblatt, R., & Korgaonkar, P. (2002). Influence of product class on preference for shopping on the Internet. *Journal of Computer Mediated Communication*, 8(1). Retrieved on 29, april, 2015, from http://jcmc.indiana.edu/vol8/issue1/girard.html

Goldberg, M.E., & Hartwick, J. (1990). The effects of advertiser reputation and extremity of advertising claim on advertising effectiveness. *Journal of Consumer Research*, 17(2), 172-179.

Ha, H.Y. (2004). Factors influencing consumer perceptions of brand trust online. *Journal of Products and Brand Management*, 13(5), 329-342.

Hao, Y.Y., Ye, Q., Li, Y.J., & Cheng, Z. (2010). How does the Valence of Online Consumer Reviews Matter in Consumer Decision Making? Differences between Search Goods and Experience Goods. *Proceedings of the 43rd Hawaii International Conference on System Sciences*.

Hennig-Thurau, T., Gwinner, K.P., Walsh, G. & Gremler, D.D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the internet? *Journal of Interactive Markerting*, 18(1), 38-52.

Henricks, M. (1998). Spread The Word. *Entrepreneur*, February. Retrieved on 20, November, 2015, from: http://www.entrepreneur.com/article/15096

Herr, P.M., Kardes, F.R. & Kim, J. (1991). The effects of word-of-mouth and product-attribute information on persuasion: an accessibility-diagnosticity perspective. *Journal of Consumer Research*, 17(4), 454-462.

Highhouse, S., & Paese, P.W. (1996). Problem domain and prospect frame: Choice under opportunity versus threat. *Personality and Social Psychology Bulletin*, 22(2), 124-132.

Kang, Y.S., & Herr, P.M. (2006). Beauty and the beholder: Toward an integrative model of communication source effects. *Journal of Consumer Research*, 33(1), 123–130.

King, R.A., Racherla, P., & Bush, V.D. (2014). What We Know and Don't Know About Online Word-of-Mouth: A Review and Synthesis of the Literature. *Journal of Interactive Marketing*, 28(3), 167-183.

Klein, L. R. (1998). Evaluating the potential of interactive media through a new lens: Search versus experience goods. *Journal of Business Research*, 41(3), 195–203.

Lee, J., Park, D.H. & Han, I. (2008). The effect of negative online consumer reviews on product attitude: an information processing view. *Electronic Commerce Research and Applications*, 7(3), 341–352.

McKnight, D.H., & Kacmar, C. (2006). Factors of information credibility for an internet acvice site. *Proceedings of the 39th Hawaii International Conference on System Science*.

Mizerski, R. (1982). An attribution explanation of the disproportionate influence of unfavorable information. *Journal of Consumer Research*, 9(3), 301–310.

Nelson, P. (1970). Information and Consumer Behavior. *The Journal of Political Economy*, 78(2), 311 – 329.

Park, D.H. & Han, I. (2008). Integrating Conflicting Reviews: Attributional Hypotheses of Consumer Response to Information Uncertainty depending on Prior Brand Attitude.

Proceedings of the Proceedings of the 41st Annual Hawaii Itnernational Conference on System Sciences, IEEE Computer Society Washtington, DC, USA.

Park, D.H., & Kim, S. (2008). The effects of consumer knowledge on message processing of electronic word-of-mouth via online consumer reviews. *Electronic Commerce Research and Applications*, 7(4), 399–410.

Park, C., & Lee, T. M. (2009). Information direction, website reputation and eWOM effect: a moderating role of product type. *Journal of Business Research*, 62(1), 61–67.

Park, J., Lennon, S.J. & Stoel, L. (2005). On-line product presentation: Effects on mood, perceived risk, and purchase intention. *Psychology & Marketing*, 22(9), 695–719

Petty, R.E., & Cacioppo, J.T. (1986). Communication and Persuasion: Central and peripheral routes to attitude change. New York: Springer-Verlag.

Richins, M.L. (1983). Negative word-of-mouth by dissatisfied consumers: A pilot study. *Journal of Marketing*, 47(1), 68-78.

Richins, M.L., & Root-Shaffer, T. (1988). The role of involvement and opinion leadership in consumer word-of-mouth: an implicit model made explicit. *Advances in Consumer Research*, 15(1), 32-36.

Rohm, A.J., & Swaminathan, V. (2004). A typology of online shoppers based on shopping motivations. *Journal of Business Research*, *57*(7), 748–757.

Sebastianelli, R., Tamimi, N. & Rajan, M. (2007). How Shopping Frequency and Product Type Affect Consumers' Perceptions of e-Tailing Quality. *Journal of Business & Economics Research*, *5*(1), 89-100.

Sen, S., & Lerman, D. (2007). Why are you telling me this? An examination into negative consumer reviews on the web. *Journal of Interactive Marketing*, 21(4), 76–94.

Senecal, S., & Nantel, J. (2004), The Influence of Online Product Recommendations on Consumers' Online Choices, *Journal of Retailing*, 80(2), 159-169.

Sultan, F., Urban, G.L., Shankar, V., & Bart, I.Y. (2002). *Determinants and Role of Trust in E-Business: A Large Scale Empirical Study* (MIT Sloan Working Paper 4282-02). Retrieved on 20, November, 2015, from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=380404

Utz, S., Matzat, U., & Snijders, C. (2009). Online reputation systems: the effects of feedback comments and reactions on building and rebuilding trust in on-line auctions. *International Journal of Electronic Commerce*, *13*(3), 95–118.

Van Noort, G., Kerkhof, P., & Fennis, B. M. (2008). The persuasiveness of online safety cues: the impact of prevention focus compatibility of Web content on consumers' risk perceptions, attitudes, and intentions. *Journal of Interactive Marketing*, 22(4), 58–72.

Vijayasarathy, L.R. (2002). Predicting consumer intentions to use on-line shopping: the case for an augmented technology acceptance model. *Information & Management*, 41(6), 747-762.

Weinberger, M.C. & Dillon, W.R. (1980). The effects of unfavourable product information. *Advances in Consumer Research*, 7(1), 528-532.

Yang, J. & Mai, E. (2010). Experiential goods with network externalities effects: an empirical study of online rating system. *Journal of Business Research*, 63(9), 1050-1057.

Zaichkowsky, J. L. (1985). Measuring the involvement construct. *Journal of Consumer Research*, 12(3), 341-352.

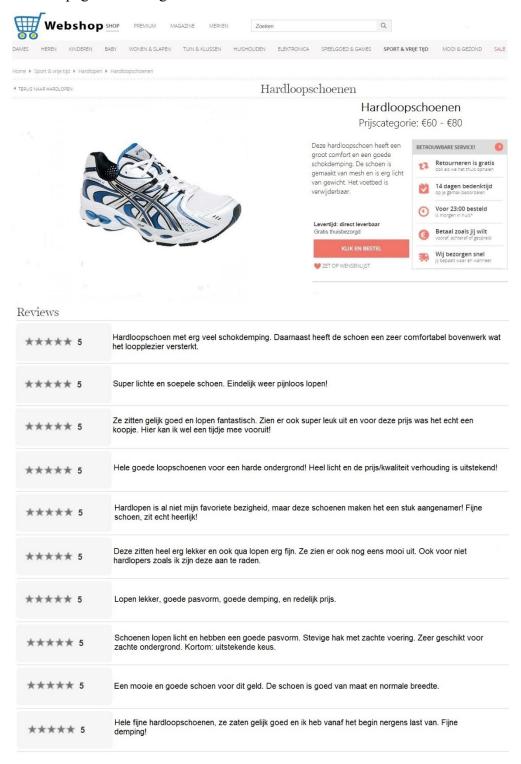
Zeithaml, V.A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52(3), 2–22.

Appendix

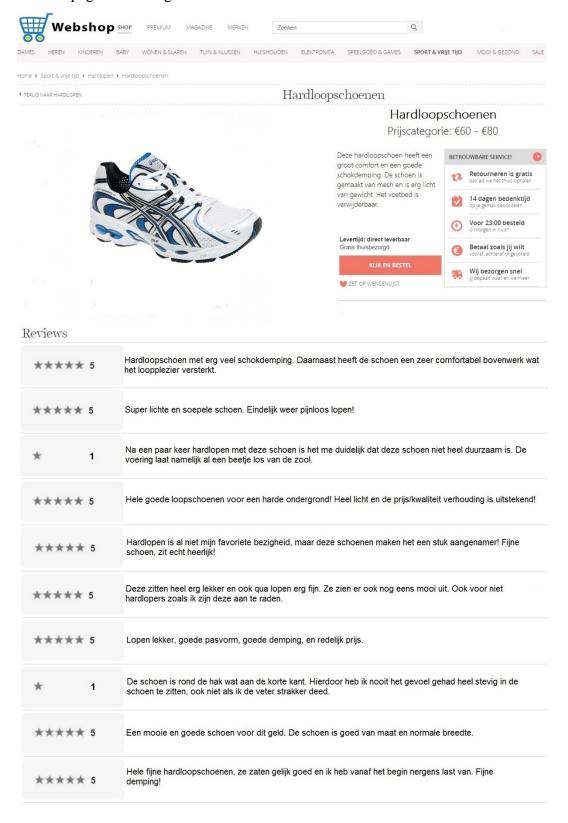
The following stimuli were used for the experiment

Appendix A. Product page

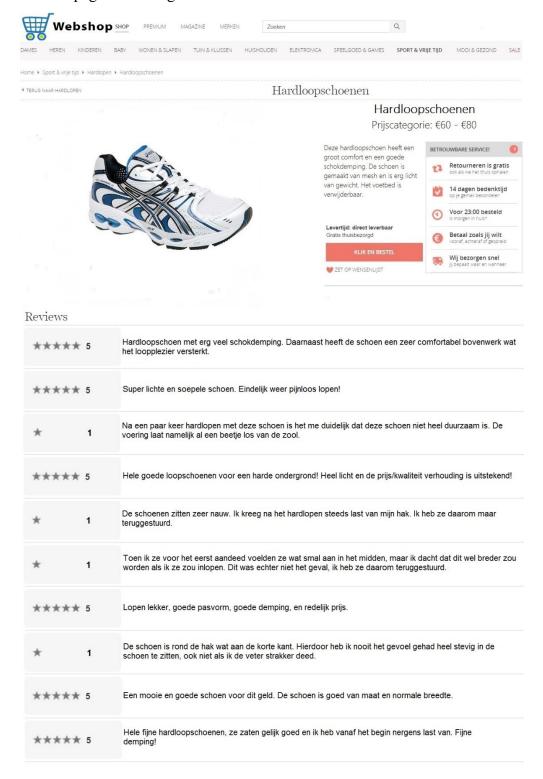
Product page of running shoes with a review ratio of 10:0



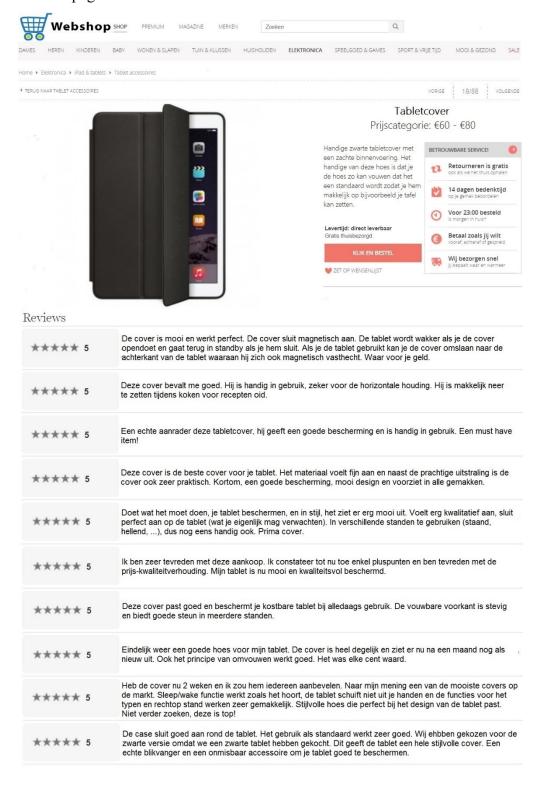
Product page of running shoes with a review ratio of 8:2



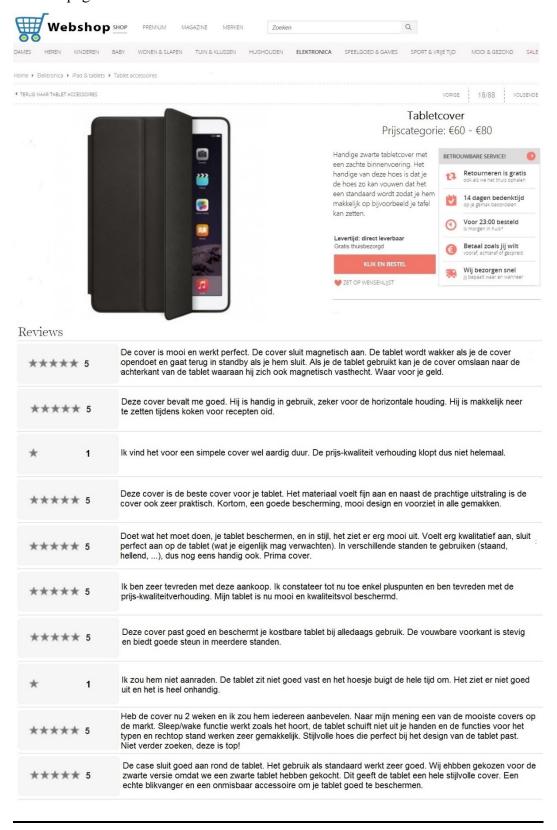
Product page of running shoes with a review ratio of 6:4



Product page of a tablet cover with a review ratio of 10:0



Product page of a tablet cover with a review ratio of 8:2



Product page of a tablet cover with a review ratio of 6:4



Appendix B. Questionnaire

Beste respondent,

Bedankt voor uw deelname aan deze enquête.

In het kader van mijn afstudeeropdracht voor de studie Communication Studies aan de Universiteit Twente voer ik een onderzoek uit naar reviews van producten. SCENARIO: ga ervan uit dat u op zoek bent naar een dergelijk product.

In dit onderzoek wordt u verzocht vragen te beantwoorden over een product, reviews en de website. Het is hierbij belangrijk dat u zich goed concentreert op alle getoonde informatie. Na het zien van de webpagina wordt u doorgestuurd naar een vragenlijst die betrekking heeft op het product.

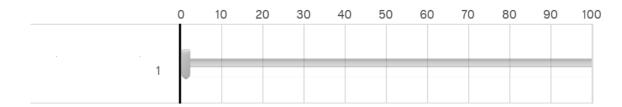
In het belang van het onderzoek wil ik u vriendelijk verzoeken het onderzoek niet vroegtijdig af te breken. De door u verstrekte gegevens zullen anoniem worden verwerkt en uitsluitend voor doeleinden van dit onderzoek worden gebruikt. Deelname aan dit onderzoek zal ongeveer 5 minuten van uw tijd in beslag nemen.

Wat	-		

Man

Vrouw

Wat is uw leeftijd?



Wa	it is je opleidingsnivea	u?						
	Basisonderwijs							
\bigcirc	VMBO							
	HAVO							
	VWO / Gymnasium							
\bigcirc	MBO							
\bigcirc	НВО							
\bigcirc	WO							
	Anders, namelijk:							
Но	e vaak koop je online	een produ	ct?					
	Dagelijks							
	Wekelijks							
	Maandelijks							
	Driemaandelijks							
	Halfjaarlijks							
	Jaarlijks							
	Nooit							
UN	IVERSITY OF TWENT	TE, >// <	X//	114				
[De reviews waren over het a	_	0 0 0) 0 0 (O Pos	sitief		
(Omschrijf in hoeverre u het	eens bent me	et de volge	ende stelling		oroductgroe	p over het	algemeen
		Helemaal mee oneens	Oneens	Gedeeltelijk mee oneens	Niet mee oneens/niet mee eens	Gedeeltelijk mee eens	Eens	Helemaal mee eens
F	De kwaliteit van dit soort oroducten is al voor de aankoop te beoordelen	0	0		0	0	0	
F	De kwaliteit van dit soort producten is pas na de aankoop te beoordelen	0	0	0	0	0	0	0
	Er zit een zeker risico aan het kopen van dit soort producten	0						
F	Bij het kopen van dit soort producten is er sprake van pnzekerheid	0	0	0	0	0	0	0

Omschrijf in hoeverre u het eens bent met de volgende stellingen. Denk daarbij aan het scenario dat u opzoek bent naar een dergelijk product.

	Helemaal mee oneens	Oneens	Gedeeltelijk mee oneens	Niet mee oneens/niet mee eens	Gedeeltelijk mee eens	Eens	Helemaal mee eens
Na het lezen van de reviews wil ik het product hebben	0	0	0	0	0		0
Ik overweeg om het product te kopen na het lezen van de reviews	0	0	0	0	0	0	0
Ik heb de intentie om het product uit te proberen	0		\circ		0		
In de toekomst heb ik niet de intentie om het product online op te zoeken	0	0	0	0	0	0	0
In de toekomst heb ik de intentie om het product te kopen	0	0	0	0	0		0

>>

UNIVERSITY OF TWENTE,

Omschrijf in hoeverre u het eens bent met de volgende stellingen, van volledig oneens tot volledig eens.

	Helemaal mee oneens	Oneens	Gedeeltelijk mee oneens	Niet mee oneens/niet mee eens	Gedeeltelijk mee eens	Eens	Helemaal mee eens
De reviews zijn hulpvol en geven me een betere mogelijkheid de kwaliteit van het product goed in te schatten	0	0	0	0	0		0
De reviewers hebben het product gebruikt en weten waar ze het over hebben	0	0	0	0	0	0	0
De reviewers zijn oprecht	0					\bigcirc	
Ik vertrouw er niet op dat de reviewers eerlijk zijn	0	0	\circ	0	\circ	\circ	0

>>

UNIVERSITY OF TWENTE,

Wat vind je van het product?

Slecht		\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc		Goed
Interessant	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	0	Oninteressant
Onplezierig	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	0	Plezierig
Onbevredigend	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	0	Bevredigend
Onaantrekkelijk	0	\bigcirc	\bigcirc	\bigcirc		\bigcirc		Aantrekkelijk



Wat vind je van het website?

Slecht		\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc		Goed
Interessant	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\circ	Oninteressant
Onplezierig	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc		Plezierig
Onbevredigend	0	\circ	\bigcirc	\circ	\circ	\circ	0	Bevredigend
Onaantrekkelijk		\bigcirc	\bigcirc	\bigcirc		\bigcirc		Aantrekkelijk

>>

UNIVERSITY OF TWENTE,



Wat vind je over het algemeen van de getoonde productsoort? (Dus niet specifiek het getoonde artikel op de webpagina)

Onbelangrijk								Belangrijk
Niet relevant	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\circ	Relevant
Waardeloos	0							Waardevol
Betekent veel voor mij	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\circ	Betekent niks voor mij
Oninteressant								Interessant

UNIVERSITY OF TWENTE,

Omschrijf in hoeverre u het eens bent met de volgende stellingen, van volledig oneens tot volledig

	Helemaal mee oneens	Oneens	Gedeeltelijk mee oneens	Niet mee oneens/niet mee eens	Gedeeltelijk mee eens	Eens	Helemaal mee eens
Ik weet veel over dit product							
Ik beschouw mezelf als een expert over dit product	0	\circ	\circ	0	0	\circ	0
Ik weet minder over dit product dan mijn vrienden			\circ				
Ik besteed veel aandacht aan informatie over dit product	0	0	0	0	\circ	\circ	



Omschrijf in hoeverre u het eens bent met de volgende stellingen, van volledig oneens tot volledig eens

	Helemaal mee oneens	Oneens	Gedeeltelijk mee oneens	Niet mee oneens/niet mee eens	Gedeeltelijk mee eens	Eens	Helemaal mee eens
Ik lees altijd de reviews als ik een product online koop			\circ		0		\circ
Ik vind reviews nutteloos als ik een product online wil kopen	0	\circ	\circ	0	\circ	\circ	\circ
lk ervaar minder risico's wanneer ik online reviews kan lezen over een product	0		0	0	0	0	0
Ik maak me zorgen over mijn keuze als ik niet de mogelijkheid heb gehad om reviews te lezen	0	0	0	0	0	0	0

H