

ENGELSK TITTEL: A Study of Characteristics That Contribute to Online Review Helpfulness

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A Study of Characteristics That Contribute to Online Review Helpfulness



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Foreword

First, I would like to thank my advisor, Professor Dag Osmundsen, for all his help and guidance throughout the work of this bachelor thesis. He has shown interest, enthusiasm and given me good advice throughout this process. My bachelor thesis has been a very long and challenging process, filled with obstacles and setbacks.

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Thank you

Abstract

Online product reviews are an important source of information that facilitates the consumer in the purchase decision process. This study investigates the correlation between three review characteristics and the perceived helpfulness of online reviews. These variables are founded in the theoretical background of information economics. Drawing on the theoretical foundation of information economics these variables are then tested by the product types provided from this theory, namely search goods and experience goods.

An analysis of 120 reviews from three different website across four products indicated that the most significant correlation existed between helpfulness and review length. Review timeliness proved to have an inconsequential effect on helpfulness, while the effect of star rating was dependent on product type. Correlations are then discussed in greater detail, after which a theoretical and practical implications are mentioned. Lastly limitations and future research directions are evaluated and suggested.

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1. Introduction

1.1 Background

Innovation and technological advancements have contributed to major improvements in people's daily lives. One of the advantages of these developments is that it has given people more options to choose from. However, consequently, decisions such as where to eat, which television to buy, picking the best general practitioner or where to travel, has become more complex as the number of choices increase along with the available volume of information. This has led people to look for ways of simplifying the purchase decision process by seeking information that is readily available to them, thereby streamlining the process which eventually will save the consumer time. Additionally, this enhancement will also give an outcome that is better suited to the individual consumer (Zhang, Ye, Law, & Li, 2010).

Electronic-word-of-mouth (eWOM) is one the most influential information sources and online product reviews facilitate most consumers' decision process (Li, Huang, Tan, & Wei, 2013). The interest in online reviews and specifically the helpfulness of them are getting increasing attention as the creation and use of online reviews are growing. Trying to understand these potential consumers and what might influence them are therefore of great interest.

This paper explores the concept of helpfulness in the context of written online reviews and how these facilitate the potential the consumers' decision to purchase a product or service. Numerous studies have previously focused on the influence of online reviews, but there are few studies that examine and analyze the language and information in comments and what exactly makes some more valuable than others. This is a gap which this study is aiming to fill.

1.2 Thesis Statement

The application of user-generated-content (UGC) has risen drastically since the beginning of this century. Dissemination of opinions and information that is now accessible to people worldwide has now been established as a valuable source of information, not only for the seller but also the consumer. As the information is more easily distributed the question has now become; how should consumers navigate through the jungle of information overload to find what can be deemed useful for each of them?

The purpose of this study is to try and identify a few of the specific characteristics of online customer reviews that make some more helpful than others. More specifically, how does review timeliness, review valence, and review length relate to the concept of review helpfulness for both search goods and experience goods?

2. Theoretical Background

Social media and online customer reviews has a major impact on today's marketing strategy and how companies design their products and services. It has given the buyer a much stronger voice that enables them to communicate and spread their opinion and feelings not only to the seller, but also to other potential consumers. An online customer review can be defined as "peer-generated product evaluations posted on company or third party websites" (Mudambi & Schuff, 2010, p. 186). And the importance of online reviews should not be underestimated, as 92.4% of consumers use online reviews to guide them in most of their purchasing decisions (Review Trackers, 2020).

Therefore, trying to understand what makes a review helpful is of great interest to many parties. Past studies reveal that there is no universal consensus on the definition of review helpfulness nor what determinants should be included, although there are certain similarities amongst several researchers. Some studies have investigated the connection between helpfulness and review *diagnosticity*. According to the American Psychology Association (n.d.) diagnosticity refers to "the informational value of an interaction, event, or feedback for someone seeking self-knowledge". Mudambi and Schuff (2010) describe it as a review that helps the consumer in the purchasing decision process, similarly Hu and Yang (2021) also connects it to the review diagnosticity. While others have associated review helpfulness with quantitative factors such star rating, or helpfulness votes (Krishnamoorthy, 2015).

The helpfulness of online review is a multi-faceted concept and trying to pinpoint the determinants are therefore challenging. More recent studies have moved their focus away from only the quantitative measures to look at the qualitative factors as well, which also play a part in determining the helpfulness of a review (Agnihotri & Bhattacharya, 2016; Chua & Banerjee, 2016; Hu & Yang, 2021; Krishnamoorthy, 2015; Li et al., 2013; Mudambi &

Schuff, 2010). The qualitative measures are many such as content, source, product type, review type, reviewer expertise etc. And it is this combination of quantitative and qualitative factors that can help determine which features are the true determinants of review helpfulness.

2.1 Information Economics

The act of making any purchasing decision always involves a certain amount of risks, where most will stem from the uncertainty of not having all the information that might be needed (Kaufmann & Kaufmann, 2015). The purchase decision process aim is to reduce this perceived uncertainty and consumer reviews are therefore an easily available source of information. This process can in many cases be a complicated one, partly due to the number options the consumer has for each decision that must be made. If the decision is complex, for example in cases that involves a substantial amount of money, it can lead to the consumer feeling overwhelmed, as humans have a limited capacity to process information (Kaufmann & Kaufmann, 2015). And since most people are risk averse, they take time to search for information to be able to make the best decision possible. Since this process takes time and effort the total cost of any product should not only include the product cost but also the time and effort put into the search process (Nelson, 1970). According to Mudambi and Schuff (2010) both the efforts from the search and the processing of the information should be considered part of this total cost.

This is where the diagnosticity of online reviews are of interest. Since the informational value of such reviews depends upon the readers effort and ability to evaluate the content of them. Luckily, there are certain aspects that improve the helpfulness of reviews which thereby make the search process easier for the consumer.

2.2 Perceived Review Helpfulness Measurement

A growing number of researchers are paying more attention to review helpfulness and what characteristics makes a review helpful to the consumer. However, a formal definition of what review helpfulness really entails is still missing. According to Mudambi and Schuff (2010) "Review helpfulness is interpreted as the perceived value of a given entry to inform purchase decisions". Similarly Li et al. (2013) defines product review helpfulness as "the extent to which consumers perceive the product as being capable of facilitating judgement or purchase decisions". These statements are quite similar in nature, but there are also other studies that associate the question of review helpfulness more to the aspect of influence and message adoption (J. Lee & Kim, 2020; K.-T. Lee & Koo, 2012). Nevertheless, what all these studies have in common is the fact that they all believe that there are certain characteristics that make online reviews more valuable.

In this paper online review helpfulness will be defined according to Mudambi and Schuff (2010) as this has the perspective and interest of the consumer as its main focus. This As mentioned previously the main objective of this study is to try and determine some of the characteristics that make reviews helpful.

2.3 Review Characteristics

Studies regarding online customer reviews have mostly focused on two areas: first, the effect of online reviews on product sales, and second, other outcomes, especially online review helpfulness. Understanding what attributes makes online reviews helpful for the consumer has been an area of interest for many since the beginning of this century. Some characteristics have been well established as important aspects of the overall helpfulness. However, there is still a lot of conflicting studies in terms of some attribute's exact role. Either way, searching for more answers concerning this question is not only of interest to the consumer, but the seller and manufacturer.

2.3.1 Review Timeliness

Review age or review timeliness refers to the time when the review was posted (Hu & Yang, 2021; Li et al., 2013) Research examining this variable contend that there is a close connection between perceived helpfulness and review timeliness. The findings are however inconsistent and somewhat competing.

Pan and Zhang (2011) argue that reviews that are published soon after product release have more value than more recent reviews. This is explained by the fact that they are more informative since the amount of reviews are limited and the reviewer therefore takes more time and care in writing something that they hope others will find helpful (Lin & Heng, 2015).

In contrast, there are other studies that maintain that consumers are more interested in the newer reviews as they are seen as more relevant and trustworthy (Hu & Yang, 2021; J. Lee & Kim, 2020). Furthermore, as many products have a large amount of reviews consumers tend to only read the most recent ones as a way of avoiding information overload. This is often caused by the website's chronological-review-display mechanism and as a result, the newest reviews gets the most exposure (Luo, Duan, Shang, & Pan, 2021).

Websites have different approaches to specifying the recency of their online reviews. Some will only give an approximate time frame in the sense of month or years that have passed since publication. Others will give the specific date when the review was posted, and some do not provide this information at all.

2.3.2 Review Valence

The review rating or review valence, is the overall perception of a product or service, and can be expressed as positive, neutral, or negative (Zablocki et al., 2019). Many studies have been conducted concerning this aspect of online reviews, (Agnihotri & Bhattacharya, 2016; Hu & Yang, 2021; Luo et al., 2021; Malik & Hussain, 2018; Mudambi & Schuff, 2010; Wang, Wang, & Yao, 2019), where there have been found a significant relationship between review rating and the helpfulness of reviews. However, the findings have been largely inconsistent, and the results from the various studies are conflicting.

For instance, have some studies concluded that negative reviews have a greater impact than positive or neutral entries (Amabile, 1983; Filieri, Raguseo, & Vitari, 2021; Lin & Heng, 2015). Wu (2013) suggest that this can be explained by a basic tenet of psychology that posits that the psychological effects of positive information are outweigh by those of negative information.

Other researchers believe that extreme ratings in either direction may have a greater impact on perceived helpfulness than those with a more moderate view (Mudambi & Schuff, 2010). An extreme rating can be interpreted as more reassuring thereby reducing the uncertainty connected to the purchase of a product or service (Forman, Ghose, & Wiesenfeld, 2008).

In any case, review valance is a qualitative measure that quantifies how satisfied a customer is through a rating scale, usually between 1 and 5 stars, (e.g. Amazon.com, and TripAdvisor.com) or sometimes on a scale from 1 to 10 (e.g. IMDB.com). It is one the

quickest and easiest ways for a consumer to gain information about the product as it is simple and quick to interpret and therefore does not cost a lot of time or effort.

2.3.3 Review Text

Scholars have for a long time stated that the content of the review serves a significant role in the perception of online review helpfulness. The content of the review is multi-faceted and includes among others; readability, linguistic style, depth, and degree of abstractness (Agnihotri & Bhattacharya, 2016; Chua & Banerjee, 2016; Malik & Hussain, 2018; Shin, Chung, Xiang, & Koo, 2019).

Krishnamoorthy (2015) suggests that there are certain linguistic characteristics that partly determines whether a person conceives a review or text as mostly subjective or more objective. More specifically, the text can be analyzed and based on certain words and descriptions it is possible to classify the text as either objective or subjective and thereby helpful for other potential buyers.

There are also studies that have focused on review quality criteria when investigating the significance of the review text (Filieri, 2015; K.-T. Lee & Koo, 2012). Either way, literature has revealed that the review text is one of the most important aspects of the perceived review helpfulness. Although reading review texts are more time consuming, making it more costly, the information should not be underestimated.

2.3.4 Review Length

Another review characteristic that has been of interest to many researchers is the review length. Previous studies done by Hu and Yang (2021) and Luo et al. (2021) suggests that the review quality is dependent on several factors including the length of the review. In most studies review length is linked to the review depth. According to Luo et al. (2021) there are three major advantages to longer reviews. Firstly, the longer reviews tend to provide more information, thereby making it more helpful. They are often more detailed, providing

information that will help the consumer assess the quality of the potential product (Mudambi & Schuff, 2010).

Secondly, longer reviews tend to be more persuasive as they often include both pros and cons of a product(Hu & Yang, 2021). This may help reduce the consumers uncertainty since they can then evaluate which strengths and weakness are applicable to them and their situation.

Thirdly, Hu and Yang (2021) suggest that longer reviews enhance a reviewers credibility. They explain this by the fact that longer reviews are thought to require more effort and expertise, which means that they are more likely to be accepted and trusted (Hu & Yang, 2021).

2.4 Reviewer Characteristic

A majority of the online review research have been concerned with the review characteristics, but now researchers are realizing that certain reviewer characteristics may also be determining factors in the overall perception of review helpfulness. Although this is not the main focus of this study this aspect has had an influence on this studies' sampling process and in the evaluation of the reviews. Furthermore, reviewer characteristics are an integral part the review helpfulness literature.

2.4.1 Reviewer Expertise

A reviewer's credibility and expertise can be difficult to objectively assess in an online environment and consumers must therefore seek peripheral cues for their evaluation of the reviewer (Hu & Yang, 2021). These cues are then used in assessing the helpfulness of the review. Literature investigating reviewer expertise is more limited than other areas pertaining to review helpfulness, but some are still worth mentioning. According to Fang, Ye, Kucukusta, and Law (2016) " an expert refers to the one who masters knowledge in a specific field well". In their study they concluded that online reviews posted by experienced travelers was considered more credible that information posted by novice users on TripAdvisor.

Other studies have investigated how the opinions of experts have compared to that of non-experts. Li et al. (2013) suggests that the review source can have a varying influence on the consumer.

2.5 Moderator

2.5.1 Product Type

Some studies suggest that a key determinant of the overall product cost is determined by the product type that is under consideration (Chua & Banerjee, 2016; Hu & Yang, 2021; Mudambi & Schuff, 2010). More specifically, the nature of the product determines the amount of search effort that is required to perform. According to Nelson (1970) and Mudambi and Schuff (2010) "search goods are those for which consumers have the ability to obtain information on product quality prior to purchase" and "experience goods are products that require sampling or purchase in order to evaluate product quality".

Search products are largely seen as utilitarian in nature and purchased with a specific purpose in mind (Chua & Banerjee, 2016). The product is easy to assess objectively prior to purchase through product specifications and facts and will give a clear picture of its quality. Search goods reviews therefore tend to be factual, goal-oriented, and descriptive in terms of performance of its main purpose. An example of a search good is a camera (Nelson, 1970).

In comparison, experience goods are usually bought for pleasure or enjoyment. This makes these products difficult to evaluate prior to purchase. Product reviews of this type are often more subjective, emotional and the evaluation will often vary more as it is based on personal experience (Chua & Banerjee, 2016). Examples of experience goods include music (Nelson, 1970) and video games (Mudambi & Schuff, 2010).

However, it is important acknowledge that many products contain attributes from both types and the classification can therefore be described as existing along a continues scale (Mudambi & Schuff, 2010).

3. Methodology and Research Design

In this study the goal is to explore the relationship between the concept of online review helpfulness and three of the review characteristics. Thereby clarifying the roles of these variables and try to explain how these can help the consumer in making purchasing decisions. The results are expected to align with the previous studies that are mentioned previously but hopefully with a few new insights

3.1 Design

The data for this research were chosen from three different websites. Two of them are online shopping websites, Komplett.no and Netonnet.no, and the third came from Audible.com. Audible.com were chosen as it one of the largest providers on audiobooks worldwide and therefore has a great number of reviews for most of their items. Komplett.no and Netonnet.no have been among the most popular online shopping websites in Norway for a long time and they offer products from many different categories (Ehandel, 2015). In addition, the sites should also offer a varied range of products that could appeal to all genders. This was taken into consideration in the hopes of reducing potential gender bias. Furthermore, a large range of products also means that the website attracts consumers with diverse needs and interests which would give a more varied data sample. The websites should offer products from at least a few different categories, (i.e. electronics and kitchen appliances, or novels and self-help books), but it could be the same type of goods, as classified by Mudambi and Schuff (2010).

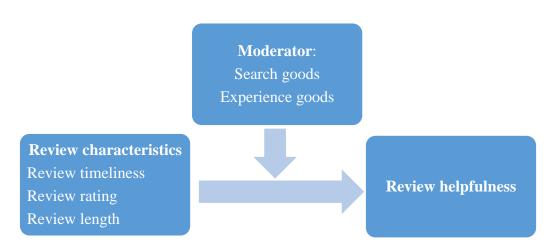
From these websites, four products were chosen based on two criteria. Firstly, the products chosen had to have a relatively large number of reviews. An exploratory search was performed to identify some products that people tended to leave reviews about.

Secondly, both search goods and experience goods were chosen building on the research by Mudambi and Schuff (2010). The final products were chosen mainly based on the number of reviews that were available to ensure a dataset with as much variation as possible.

Data from the product reviews were then collected and cleaned, and from this process the three review characteristics were chosen: review timelines, review star rating, and review length. See chapter 2.3.1, 2.3.2 and 2.3.42.3 for description of the variables.

Figure 1

Research Model



3.2 Sample and Data Collection

The data for this study was collected using online reviews available through NetonNet.no, Komplett.no and Audible.com. Review data on all webpages are provided through the product's page along with specifications and price. Four products were chosen, where two are classified as search goods and the other two are experience goods, see **Table 6** in attachment.

The search products included a computer monitor specifically designed to appeal to computer gamers and a robot vacuum. Both products can be considered highly utilitarian with a clear and specific usage in mind as defined by Nelson (1970). As mentioned in section 2.5.1, experience goods are relatively difficult to fully gauge prior to purchase and are

therefore considered more costly. Their main attributes are very difficult to compare as they are subjective, and an evaluation must often be based on several senses and considerations is required (Mudambi & Schuff, 2010).

The experience goods selected for this study were an audiobook called "Thinking, Fast and Slow" by Kahneman (2011) and a Bluetooth speaker. These products both fulfill the criteria for experience goods as classified by Nelson (1970). Audiobook preferences are highly individual and subjective in nature. Selections are most often based on personal interests and preferences and evaluating the audiobook itself requires the person to listen to it first. A Bluetooth speaker has several practical features, such as dimensions, power, battery life, these are considered as objective and easy to describe. On the other hand, this speaker was promoted as an entertainment speaker, for parties and everyday use. The question of what is considered entertainment and fun is a subjective assessment and requires interaction with the product before final evaluation. Furthermore, the perception of sound and sound quality is also a feature that will vary greatly depending on the individual. See **Table 1** for the specific information about the products. The data collection was based on the criteria mentioned in the previous section, 3.1.

Table 1

Product	Description	Туре	Number of votes
Gaming monitor	AOC 32" Curved gaming monitor	Search	74
	CQ32G1		
Robot vacuum	Roborock S6 MaxV	Search	68
Audiobook	"Thinking, Fast and Slow" by	Experience	16360
	Daniel Kahneman		
Bluetooth speaker	Andersson PYB-5000	Experience	71

Products Used for Study

A total of 120 reviews were collected from the four products where each data set consist of 30 reviews. All products had more than 30 reviews, but only 30 for each product

were chosen to ensure a representative data set for each product. The selection of the 30 reviews for each product were based on review timeliness, review valence, and review length. Reviewer expertise was also a factor here, however since only a few reviews were categorized as "top reviewer" this could not be explored further. Review data was then entered into IBM SPSS Statistics for analysis and interpretation.

A correlation and frequency analysis were performed for each data set. The variable review timeliness was given for all products. However, the date of the reviews for one of the products were not specified, therefore the correlation for review timeliness could not be tested for that product. Review rating was given for all the products across the different websites on a scale from one to five stars. Review length was calculated for each review based on the word count. Only Netonnet.no and Audible.com had set a minimum word requirement for customer reviews, while all website provided customer review guidelines. Review helpfulness was introduced as the dependent variable were the measure is given on a ranked scale from one to four. This ranking is based on a subjective evaluation of the amount and quality of information given in each review see **Table 2**.

Table 2

Score		Description
1	No helpful	The information given in the review is of no use to the consumer as it is not relevant for the product.
2	Somewhat helpful	The information given in the review is of some use the consumer as it has a few pieces of information about the product
3	Helpful	The information given in the review has a several pieces of helpful information about the product
4	Very helpful	The information given in the review is of high quality by covering several sides of the product and is detailed

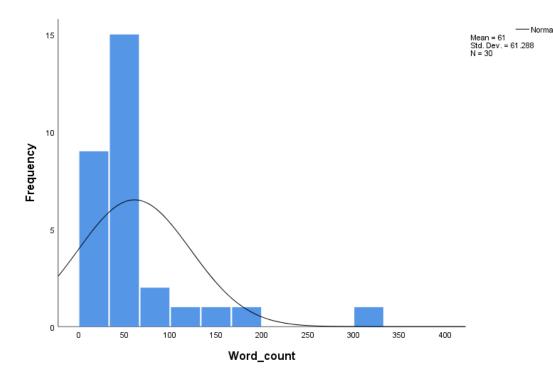
Helpfulness Rating Criteria

3.3 Data Analysis

Spearman's rank-order correlation was used to analyze the correlation between the variables due to the nature of the dependent variable (helpfulness). The variables do not meet all the assumptions required to run the Person's product-moment correlation coefficient, namely, it does not have the correct level of measurement, nor is it normally distributed. This was checked before running the correlations, the data was checked for normal distribution by inspecting the histogram scores on each variable. The histograms showed that the data was skewed for all the independent variables, see example in **Figure 2**.

Figure 2





Each of the products were tested with a frequency analysis before grouping them into product types, search goods and experience goods, to check for outliers and incorrect data input. The Spearman's rank order correlation was then performed for all the independent variables. First the Spearman's correlation was used to explore the relationship between review timeliness and helpfulness rating, see **Table 3**. Next, Spearman's correlation was used to explore the relationship between review star rating and helpfulness rating, see **Table 4**. Finally, Spearman's correlation was used to explore the relationship between review length and helpfulness rating, see **Table 5**.

4. Results

This study has explored the nature and influence of online reviews in relation to how helpful these can be to potential consumers. A preliminary theoretical study was first performed to establish which variables could be of interest to the main study. As there are no consensus as to which exact variables determine the helpfulness of an online review, three of the most mentioned independent variables were chosen for this research.

A correlation analysis was performed for all the pairs of variables to assess if there existed a relationship between them, thereby giving an answer to whether these characteristics are of any interest to the consumer when performing the product search.

4.1 Correlation Between Review Timeliness and Review Helpfulness

Review timeliness is the independent variable that specifies when the specific review was published to the review site. It can be specified by date or month and year(s) since publication, or not at all. When given, the consumer will most often have the option of filtering the reviews by date, thereby reading the reviews that are the most recent.

The relationship between timeliness, as measured by date of publication, and review helpfulness, as measured by subjective ordinal scale, was investigated using Spearman's ranked order correlation. There was no meaningful correlation between the two variables for any of the datasets. The results show that computer monitors had a rho =-.189, n = 30, p < .316, see also scatterplot in Attachment 1. Robot vacuum had a rho = -.226, n = 30, p < .230. Lastly, audiobook had a rho = -.296, n = 30, p < .112.

Table 3

Spearman's Rho Correlation Between Measures of Review Timeliness and Review

Helpfulness

			С	orrelations				
		Gaming monitor Robot vacuum Audiobook						
			Date	Helpfulness	Date	Helpfulness	Date	Helpfulness
Spearman's rho	Date	Correlation Coefficient	1.000	189	1.000	226	1.000	296
		Sig. (2- tailed)		.316		.230		.112
		N	30	30	30	30	30	30
	Helpfulness	Correlation coefficient	189	1.000	226	1.000	296	1.000
		Sig. (2- tailed)	.316		.230		.112	
		N	30	30	30	30	30	30

4.2 Correlation Between Review Valence and Review Helpfulness

The consumers' overall impression of the products in this study is represented by the star rating given by each of them. This is given on a scale from one to five, where three was viewed as the neutral score. And it is this relationship between star rating, as measured by rating given by each reviewer, and review helpfulness, as measured by a subjective ordinal scale, that was investigated using Spearman's ranked order correlation (Pallant, 2010). There were no missing scores from either of the variables and preliminary scatterplot showed that there would most likely be no strong relationship between them. The results showed no correlation between the two variables for search goods. Rho = .217, n = 60, p < .096. On the other hand, there was a strong positive correlation between the two variables when experience goods were tested. Rho = .523, n = 60, p < .001.

Table 4

			Correlation	18			
			Search	goods	Experien	ce goods	
	Star rating Helpfulness Star rating Helpfulness						
Spearman's	Star rating	Correlation	1 000		1.000	20011	
rho		Coefficient	1.000	.217	1.000	.523**	
		Sig. (2-					
		tailed)		.096		.000	
		N	60	60	60	60	
	Helpfulness	Correlation					
	-	coefficient	.217	1.000	.523**	1.000	
		Sig. (2-					
		tailed)	.096		.000		
		N	60	60	60	60	

Spearman's Correlation Between Measures of Star Rating and Review Helpfulness

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

4.3 Correlation Between Review Length and Review Helpfulness

Review length often gives a good indication about the of depth and information volume in the review. As mentioned in section 2.3.4 this has by many researchers been linked to the overall quality of the review which is closely related to the perceived review helpfulness (Hu & Yang, 2021).

The relationship between review length, as measured by the number of words, and review helpfulness, as measured by a subjective ordinal scale, was investigated using Spearman's ranked order correlation (Pallant, 2010). Results from the test indicate a strong, positive correlation between the two variables for search goods, rho = .679, n = 60, p < .001. There was also a medium, positive correlation between the two variables for experience goods, rho = .313, n = 60, p < .015, see **Table 5**.

Table 5

Correlations							
			Search	goods	Experien	ce goods	
			Word Count	Helpfulness	Word Count	Helpfulness	
Spearman's rho	Word count	Correlation Coefficient Sig. (2-	1.000	.679**	1.000	.313*	
		tailed)		.000		.015	
		N	600	60	60	60	
	Helpfulness	Correlation coefficient Sig. (2-	.679**	1.000	.313*	1.000	
		tailed)	.000		.015		
		N	69	60	60	60	

Spearman's Correlation Between Measures of Word Count and Review Helpfulness

* Correlation is significant at the 0.05 level (2-tailed) ** Correlation is significant at the 0.01 level(2_tailed)

5. Discussion

Based on past studies performed across multiple disciplines, such as marketing and psychology, researchers suggest that there are certain characteristics of online reviews that make some more helpful than others (Agnihotri & Bhattacharya, 2016; Chua & Banerjee, 2016; Hu & Yang, 2021; Mudambi & Schuff, 2010; Ngo-Ye, Sinha, & Sen, 2017). As there is multitude of factors that can be linked to determining helpfulness for the consumer, three of the most popular attributes were chosen for this study to explore how they related to the helpfulness variable when controlled for by product type. A model was designed to illustrate and visualize the relationship between the independent variables, the dependent variable, and the moderator. A preliminary study was performed to determine which products should be sampled, results from these searches indicated that there were certain categories that people were more inclined to give feedback on than others. Since the study required a certain amount of reviews to fulfill a satisfactory sample size, the final sampling was largely founded on review availability from the chosen websites.

As consumers' reliance on online reviews are increasing for all their online purchasing decisions, the assumption is that some reviews are of more value thereby increasing the chance of online review adoption.

5.1 Correlation Between Review Timeliness and Review Helpfulness

The results from the review timeliness variable is based on data collected from three out of the four products in this study, namely computer monitor, robot vacuum, and audiobook. Since the date of review publication was not specified for the Bluetooth speaker, this product could not be analyzed for this variable.

As mentioned earlier, the datasets included 30 reviews each, where 60 entries are classified as search products and 30 entries as experience goods. Based on the Spearman's correlation analysis performed for the two variables; a relationship could not be established as

there were no significance between them. Indicating that review timeliness does not affect review helpfulness.

In contrast, some studies have concluded that the review age does play a role in the overall evaluation of the product (Filieri, 2015; Hu & Yang, 2021; Pan & Zhang, 2011). According to Pan and Zhang (2011) the recency effect will influence the choice of reviews that are read; consumers are less likely to read older reviews due to skipping behavior. This can be also be explained by the readers preference to read recent reviews as they are perceived as more relevant and representative of the performance or quality of the product (Hu & Yang, 2021). J. Lee and Kim (2020) on the other hand, found that review age was not important to review adoption.

However, review timeliness was not one of the considerations when assessing and scoring review helpfulness in this study. Furthermore, reviews for this study were sampled and read without discriminating them by review age. These results may also indicate that if you remove people's tendency to prefer a certain review age, they may find the reviews that would be truly the most helpful to them.

In addition, the choice of products may have influenced the significance of the review timeliness in this study. According to J. Lee and Kim (2020) consumers level of trust increase with the timeliness of the review but it is also varies depending on the product category. For example, review timeliness might be more important when deciding on the hotel, where facility, service and quality are constantly changing. The same could be said for products where the life cycle are short and will become outdated quickly. This was not really the case for any of the products chosen for this study, thereby making this variable less relevant.

5.2 Correlation Between Review Rating and Review Helpfulness

The results obtained from these correlation tests are based on the entire sample of 120 cases. As previously mentioned, there are four datasets in total that consists of 30 reviews

each, where 60 entries are classified as search products and 60 entries as experience goods. Based on the Spearman's correlation analysis performed for the two variables; a relationship could not be established for the search goods, as there was no significant correlation between them. From this result it is possible to conclude that review rating does not influence the overall perception of review helpfulness for search goods in this study.

On the other hand, the test did reveal a strong, positive correlation, rho = .523, between the two variables for the experience goods. A statistical significance was given a p < .001, which signifies a high level of confidence in the findings. This result indicates that an increase in the review rating for experience goods will improve the level of perceived review helpfulness. Both of these findings can be supported by previous research.

As mentioned previously, researchers remain split on the question about the relationship between review rating and helpfulness. And the results from various studies are very conflicting. Some researchers maintain that there is a link between review valence and the perceived helpfulness of an online review (Filieri, 2015; Lin & Heng, 2015; Mudambi & Schuff, 2010). The issue here remains that even though they have found a correlation they still do not agree on the exact relationship between these variables. Some believe that negative ratings are more influential and helpful than positive reviews. While others contend that extreme review ratings are more helpful than moderate ones. And even still, there are some researchers that report findings where positive reviews are perceived as more influential than the negative ones (East, Hammond, & Lomax, 2008; Purnawirawan, Eisend, De Pelsmacker, & Dens, 2015; Skowronski & Carlston, 1987).

The study revealed mixed findings in terms of the correlation between these variables. This could signify that the product type does indeed play a moderating role on the relationship between the review rating and the helpfulness score. Therefore, the absence of a strong correlation for the search goods could be because most of the reviews written about these

products were mostly factual despite the score given by the reviewer. The same could not be said about the for the experience goods, where many could be described as highly subjective and personal in their expression. These descriptions align well with previous studies definition the two product groups (Mudambi & Schuff, 2010; Nelson, 1970).

5.3 Correlation Between Review Length and Review Helpfulness

Results from the correlation between these variables are based on the whole sample of 120 cases. Four datasets in total that consists of 30 reviews each, where 60 entries are classified as search products and 60 entries as experience goods. Based on the Spearman 's correlation analysis run for the two variables; a strong positive relationship, rho = .679, was found for the search goods. The statistical significance was given a p < .001, which shows a high level of confidence in the findings. Furthermore, the correlation analysis also revealed a medium, positive correlation, rho = .313, between the two variables for the experience goods. The statistical significance was given a p < .005, which indicates a high level of confidence in the findings. Both results imply that an increase in the number of words will increase the level of perceived review helpfulness.

This result is also reflected in previous studies and is for the most part considered well established (Hu & Yang, 2021; Mudambi & Schuff, 2010; Nelson, 1970; Wang et al., 2019). As discussed in section 2.3.4, review length is considered a proxy for review depth. This relates to how information tends to increase with length of the review thereby becoming more helpful to the consumer's search process.

The findings from this study also align well with Mudambi and Schuff (2010) who also saw a greater increase in the diagnosticity of a search good reviews than that of experience goods. The explanation for this could be because search goods are easier to objectively evaluate and give a description of compared to search goods. Since the search process required for search goods is easier and less costly the product reviews are of greater value. Mudambi and Schuff (2010) also points out that review length cannot replace the value of sampling for experience goods. To put in another way, review length is a smaller part of the total search cost as more impressions are required to try and fully gauge the quality of the product.

6. Contribution

In recent years, the question of what makes an online review helpful, has gotten increasing attention. With the continuous technological advancements and the improvement and availability of the internet and Web 2.0, this is now a topic that is of interest to many groups, among them the consumers themselves.

The aim of this paper has been to shed some new light on the area of online reviews through the perspective of theoretical economics. Kahneman (2011) asserts that when people are put in a position where they must make decision under uncertainty they will partly rely on intuition and heuristics. These rule-of-thumb strategies can be transferred to the purchasedecision-process they go through when deciding on the overwhelming selection of brands and models in everyday life.

6.1 Theoretical Contribution

The research presented in this paper contributes to the literature in two important aspects. First, it adds to the literature about consumer reviews and review helpfulness determinants, by exploring the connection between certain characteristics and product type. Consistent with previous studies, this paper shows that there are differences in what is considered a helpful online review that depends on the product type (Mudambi & Schuff, 2010; Nelson, 1970; Pan & Zhang, 2011; Purnawirawan et al., 2015). The effects of product type are an area that is still relatively unexplored but has proven in present study to be an important moderator of review helpfulness.

Second, this paper draws a connection between the area on online review helpfulness and the paradigm of information economics thereby giving a more holistic understanding of how these concepts interact and work. These are also correlations that are relatively unexplored but has proven in this case to be a useful foundation for this study.

6.2 Practical Contribution

The current study has practical implications for marketing managers, particularly in ecommerce but also other industries. As assumed, review length proved to be a strong indicator of review helpfulness. Therefore, marketing managers should encourage people to write informative and longer reviews that will help alleviate the search cost for other consumers, which will allow them to decide based on fewer reviews. With more detailed and informative reviews comes a greater rate of consumer satisfaction, which is a great advantage for ebusiness firms. Also, by encouraging consumers to write longer reviews companies will reduce the volume of less helpful reviews in long term. Soliciting longer reviews by offering bonus points or similar incentives are practices already being used today. However, this practice varies from website to website. Based on the results in this study this is something that should be established practice in all businesses.

Furthermore, this study found that the correlation between star rating and review helpfulness was dependent on product type. Similarly to Mudambi and Schuff (2010) this proves that online retailers does not necessarily have to fear negative reviews. Given that star rating is only meaningful to the review helpfulness of experience goods marketing managers may be rewarded by arranging and viewing reviews with higher ratings as their first page, rather than organizing them based on timeliness. For search goods the correlation was not significant which means that reviews may prove helpful to the consumer regardless of the star rating. Either way, to help the consumer, the option of filtering the reviews based on star rating should always be made available. This was not the case for all the website in this study.

7. Limitations and future research direction

7.1 Limitations

Like all research studies, the present study has some limitations. First, data was collected from three different websites who operates with varying volume and exposure. Apart from Audible.com which is a part of Amazon.com, the other two websites only represent the Norwegian and Nordic markets which may make any generalization bias.

Second, the sample size for this study is a bit limited to make any broad generalizations from the findings. A larger sample size would greatly improve the confidence in the results, thereby making it easier to see any true correlation. However, due to a limited amount of time and resources this was not feasible for present study.

Third, the method for choosing the products. This was done in a nonordered selection where the final decision for which products that were chosen are mostly based random searches with the criteria being a minimum of 50 written reviews and at least a small variation in ratings. In other words, this may not be the most reliable and ordered process and the end results could therefore be influenced by this decision.

Fourth, the dependent variable in this study was based on subjective criteria rather than objective and formal criteria. As a result, it is not possible to draw any generalization from this study. Furthermore, the definition and effect size of the dependent variable may have played central role on the results, and another way of defining this variable may be required. The criteria set for the helpfulness variable may have been too limited, resulting in missed correlations. Moreover, the subjective nature makes it hard to replicate this exact study.

7.2 Future Research Directions

The present study has a solid theoretical foundation and the variables have been investigated through many previous studies. Building on this, future research might want to explore the moderating effect of product type a little closer with a more extensive sample size. In addition, it could also be interesting to investigate how more and different products compare to those chosen for this study. By expanding the products selected, it would be possible to make a more definitive conclusion on the correlations between product types and the perceived helpfulness of online reviews.

This study only considered the perspective of one person when evaluating the review samples. Future studies could either let this evaluation be done by a sample group or more than one researcher. In this way the definition the dependent variable would become less subjective and the result are given a better chance of being generalized. Another way approaching this would be to perform an exploratory study where the researcher could research what criteria others consider important when evaluating whether a review is perceived as helpful to the individual.

A final area of interest is to reevaluate the variables that did not provide any significant correlation to the review helpfulness variable, as all of them have previously been proven to have some significance for the result in other studies.

8. Conclusion

This study affirms review length as the most valuable variable in terms of the overall perceived helpfulness of a consumer made online review. Furthermore, star rating showed to have a varying effect on the dependent variable, but this relationship proved to be clearly moderated by product type. This is founded on information economics with moderating influence of search goods and experience goods. In contrast, review timeliness proved inconsequential to the helpfulness. Only providing a result that supports one of the sides of the conflicting results from previous studies. In conclusion, this study highlights that some characteristics of online reviews, such as review length differentiates helpful reviews from others.

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10. Tables

Table 1	
Table 2	
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11. Figures

Figure 1	
Figure 2	

12. Attachment

12.1 Attachment 1

Table 6

Online reviews used in this study

Reviewer ID	Review timeliness	Rating	Word count	Helpful- ness rating	Product	Date accessed	Website
G. W.	11/23/2011	3	122	2	Audiobook	May-21	Audible.com
Jeremiah	1/4/2012	2	60	2	Audiobook	May-21	Audible.com
Mike Kircher	1/12/2012	3	321	3	Audiobook	May-21	Audible.com
Paige	1/16/2012	5	232	4	Audiobook	May-21	Audible.com
John	3/1/2012	5	121	2	Audiobook	May-21	Audible.com
Eleanor	12/13/2012	4	132	3	Audiobook	May-21	Audible.com
Lisa	1/22/2013	2	68	2	Audiobook	May-21	Audible.com
careful shopper	2/26/2013	4	101	3	Audiobook	May-21	Audible.com
Anthony A.	7/13/2013	5	194	4	Audiobook	May-21	Audible.com
Tim	10/14/2013	2	175	2	Audiobook	May-21	Audible.com
desert creature	11/7/2015	2	85	1	Audiobook	May-21	Audible.com
Neuron	12/11/2015	5	631	4	Audiobook	May-21	Audible.com
Margaret	2/14/2016	5	216	4	Audiobook	May-21	Audible.com
Bay Area Girl	9/25/2017	1	61	2	Audiobook	May-21	Audible.com
John M.	8/31/2018	1	79	2	Audiobook	May-21	Audible.com
Kira	11/28/2019	4	208	3	Audiobook	May-21	Audible.com
Carlos Marin	9/6/2020	5	36	2	Audiobook	May-21	Audible.com
RealityBuff	10/5/2020	4	105	3	Audiobook	May-21	Audible.com
Pacroban	10/12/2020	4	76	3	Audiobook	May-21	Audible.com
Amazon Customer	12/10/2020	4	67	2	Audiobook	May-21	Audible.com
Mary Stephanie Williams	12/23/2020	2	20	1	Audiobook	May-21	Audible.com
Joanne	12/26/2020	1	36	1	Audiobook	May-21	Audible.com
Miasmas	2/20/2021	4	63	2	Audiobook	May-21	Audible.com
Alex	3/29/2021	5	89	3	Audiobook	May-21	Audible.com
Rony Katalan	4/7/2021	2	31	2	Audiobook	May-21	Audible.com
Farnham & Whale	4/13/2021	1	92	2	Audiobook	May-21	Audible.com
JJS	4/19/2021	3	106	2	Audiobook	May-21	Audible.com
Amazon Customer	5/2/2021	5	377	3	Audiobook	May-21	Audible.com
Justin	5/4/2021	3	72	2	Audiobook	May-21	Audible.com
Anonymous User	5/4/2021	5	28	1	Audiobook	May-21	Audible.com
Bubbla		5	61	3	Party speaker	May-21	NetonNet.no
Dynamiten88		2	318	2	Party speaker	May-21	NetonNet.no
Henke808		5	103	2	Party speaker	May-21	NetonNet.no
TheBassExplorer		1	43	2	Party speaker	May-21	NetonNet.no
zethe		3	41	3	Party speaker	May-21	NetonNet.no
fejset		5	40	4	Party speaker	May-21	NetonNet.no
Tobiass		4	170	2	Party speaker	May-21	NetonNet.no

Reviewer ID	Review	Rating	Word	Helpful-	Product	Date	Website
	timeliness		count	ness rating		accessed	
Bubbla72		5	30	2	Party speaker	May-21	NetonNet.no
Anonomous		4	81	3	Party speaker	May-21	NetonNet.no
Johanskene		4	19	3	Party speaker	May-21	NetonNet.no
Ldaniel		4	38	2	Party speaker	May-21	NetonNet.no
Anonomous		4	65	2	Party speaker	May-21	NetonNet.no
Henry123		4	32	1	Party speaker	May-21	NetonNet.no
Nobigdeal		5	166	3	Party speaker	May-21	NetonNet.no
Bwnnyboy		1	26	1	Party speaker	May-21	NetonNet.no
kongarthur		2	37	2	Party speaker	May-21	NetonNet.no
MRSmith		4	65	2	Party speaker	May-21	NetonNet.no
Henkrkikj92		5	45	4	Party speaker	May-21	NetonNet.no
Anonomous		5	42	3	Party speaker	May-21	NetonNet.no
AlexisRF		5	10	3	Party speaker	May-21	NetonNet.no
Anonomous		5	19	1	Party speaker	May-21	NetonNet.no
TheBorg		4	39	3	Party speaker	May-21	NetonNet.no
Kryckan77		1	38	1	Party speaker	May-21	NetonNet.no
Bogumil		5	81	2	Party speaker	May-21	NetonNet.no
Palekuling		5	42	2	Party speaker	May-21	NetonNet.no
Amiiii		4	23	4	Party speaker	May-21	NetonNet.no
Henrikoj		2	57	1	Party speaker	May-21	NetonNet.no
AnnelieFW		5	43	3	Party speaker	May-21	NetonNet.no
CBPS00448855		1	28	2	Party speaker	May-21	NetonNet.no
Hedgren		5	28	4	Party speaker	May-21	NetonNet.no
Bjørn-Erik	12.05.2020	5	139	3	Gaming monitor	May-21	Komplett.no
Christian	05.09.2020	3	49	2	Gaming monitor	May-21	Komplett.no
christoffer	30.03.2021	4	49	2	Gaming monitor	May-21	Komplett.no
Christoffer	06.05.2021	5	20	2	Gaming monitor	May-21	Komplett.no
Den glade pc-amatør	09.04.2021	5	44	2	Gaming monitor	May-21	Komplett.no
Emil W	08.12.2020	3	715	3	Gaming monitor	May-21	Komplett.no
FPS player	16.12.2019	3	31	2	Gaming monitor	May-21	Komplett.no
Fredrik albrechtsen	21.12.2019	4	51	2	Gaming monitor	May-21	Komplett.no
Håkon	11.04.2021	5	74	2	Gaming monitor	May-21	Komplett.no
Henrik	07.06.2019	5	169	4	Gaming monitor	May-21	Komplett.no
Hjemme pappa	15.05.2021	5	20	1	Gaming monitor	May-21	Komplett.no
John Fredrik Rian	29.12.2020	2	233	3	Gaming monitor	May-21	Komplett.no
Karl J	03.04.2019	4	154	3	Gaming monitor	May-21	Komplett.no
Kasper	23.12.2019	3	69	2	Gaming monitor	May-21	Komplett.no
knut	02.07.2019	5	66	3	Gaming monitor	May-21	Komplett.no
Marius Kristiansen	11.01.2021	2	39	2	Gaming monitor	May-21	Komplett.no
Mariusz	25.03.2019	5	18	1	Gaming monitor	May-21	Komplett.no
melkyrion	15.02.2020	4	319	4	Gaming monitor	May-21	Komplett.no
Morten	07.01.2020	3	120	4	Gaming monitor	May-21	Komplett.no
Ole C	22.03.2021	5	71	2	Gaming monitor	May-21	Komplett.no
Peter Woxblom	30.08.2019	4	87	2	Gaming monitor	May-21	Komplett.no

Reviewer ID	Review timeliness	Rating	Word count	Helpful- ness rating	Product	Date accessed	Website
Simen N	03.06.2019	4	39	2	Gaming monitor	May-21	Komplett.no
Simon Boye	19.05.2021	1	38	2	Gaming monitor	May-21	Komplett.no
Stian	03.01.2020	3	46	1	Gaming monitor	May-21	Komplett.no
Stian	27.10.2020	5	141	3	Gaming monitor	May-21	Komplett.no
Tobias	11.02.2020	1	19	1	Gaming monitor	May-21	Komplett.no
Tor Arne	01.05.2021	5	55	2	Gaming monitor	May-21	Komplett.no
Torstein	09.03.2020	4	58	2	Gaming monitor	May-21	Komplett.no
William	23.02.2021	4	47	2	Gaming monitor	May-21	Komplett.no
Yuri	13.01.2020	3	135	3	Gaming monitor	May-21	Komplett.no
Kristoffer	01.03.2021	5	4	1	Robot vacuum	May-21	Komplett.no
СН	10.05.2021	5	19	2	Robot vacuum	May-21	Komplett.no
Stig	30.04.2021	5	24	3	Robot vacuum	May-21	Komplett.no
Ronny	29.03.2021	5	25	1	Robot vacuum	May-21	Komplett.no
Johannes Mattias Brændeland	18.03.2021	4	34	1	Robot vacuum	May-21	Komplett.no
Trond Thormodsen Skjøren	04.03.2021	5	35	3	Robot vacuum	May-21	Komplett.no
Gunn	02.05.2021	5	36	2	Robot vacuum	May-21	Komplett.no
T Alm	04.03.2021	4	39	2	Robot vacuum	May-21	Komplett.no
Christine	08.03.2021	4	40	3	Robot vacuum	May-21	Komplett.no
Chris	19.03.2021	5	43	2	Robot vacuum	May-21	Komplett.no
Tor Arne	11.04.2021	5	49	2	Robot vacuum	May-21	Komplett.no
Prez	03.03.2021	5	51	4	Robot vacuum	May-21	Komplett.no
Joakim	13.04.2021	3	55	2	Robot vacuum	May-21	Komplett.no
Eivind Daljord	28.04.2021	5	59	3	Robot vacuum	May-21	Komplett.no
Jan	03.03.2021	5	62	3	Robot vacuum	May-21	Komplett.no
Tan_the_man	26.12.2020	5	64	4	Robot vacuum	May-21	Komplett.no
Martin	25.04.2021	5	66	3	Robot vacuum	May-21	Komplett.no
OpiU	20.01.2021	2	68	1	Robot vacuum	May-21	Komplett.no
Karl Fagerholm	03.02.2021	4	70	2	Robot vacuum	May-21	Komplett.no
Ulf	13.04.2021	5	75	3	Robot vacuum	May-21	Komplett.no
Tim	14.05.2021	4	78	2	Robot vacuum	May-21	Komplett.no
Petter	03.03.2021	4	84	3	Robot vacuum	May-21	Komplett.no
30	26.02.2021	5	99	3	Robot vacuum	May-21	Komplett.no
Arne Leonhardsen	26.02.2021	5	109	3	Robot vacuum	May-21	Komplett.no
Magnus Rasmussen	02.07.2020	4	132	2	Robot vacuum	May-21	Komplett.no
Eirik	12.03.2021	4	194	4	Robot vacuum	May-21	Komplett.no
Daniel Marschalek	28.01.2021	5	211	4	Robot vacuum	May-21	Komplett.no
Fred	24.03.2021	5	223	4	Robot vacuum	May-21	Komplett.no
Tony	22.10.2020	3	333	3	Robot vacuum	May-21	Komplett.no
Stein	05.08.2020	5	498	4	Robot vacuum	May-21	Komplett.no