University of Texas at Arlington

MavMatrix

2023

Effects of Personality on the Perceived Helpfulness of Online Reviews

Amal Mosleh Alshamrani

Effects of Personality on the Perceived Helpfulness of Online Reviews

By

Amal Alshamrani

DISSERTATION
Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy at
The University of Texas at Arlington
August 2023

Arlington, Texas

Supervising Committee:
Sridhar Nerur, Supervising Professor
Radha Mahapatra
Mahmut Yasar

Acknowledgments

First and foremost, thanks go to Allah for His mercy and guidance, and peace be upon His messenger.

I would like to express my sincere thanks and appreciation to my advisor, Dr. Sridhar Nerur, for his guidance and support throughout my PhD journey. I am also thankful to my dissertation committee members, Dr. Radha Mahapatra and Dr. Mahmut Yasar, for their valuable input and for generously dedicating their time to serve on my dissertation committee. I am deeply thankful to the Department of Information Systems and Operations Management for their generous funding that played a pivotal role in enabling me to carry out my research successfully.

Lastly, I want to express my heartfelt appreciation to my family for their prayers, encouragement, and understanding. Their belief in me kept me motivated throughout this challenging journey. To my best friend and husband, Abdulaziz, we both know I would not have achieved this goal without your support and sacrifice along the way. Thank you for your love and encouragement, and for being the most amazing father to our children.

To Sarah and Reema, my precious daughters, thank you for your unconditional love throughout this demanding journey. Your smiles and constant support have been a tremendous source of motivation and joy.

Table of Contents

Chapter I

Effect of Reviewer Personality on Review Helpfulness for Search vs. Experience Products

Abstract

With the rapid growth of online shopping, the ability of consumers to publish their reviews has created electronic communities that provide rich texts for analysis. In this paper, I examine the relationship between customers' personality traits and the perceived helpfulness of their online reviews extracted from Amazon. The findings indicate that the personality traits of consumers influence the helpfulness votes that their reviews receive. Specifically, I find that individuals who exhibit high agreeableness and conscientiousness, and low openness and neuroticism tend to provide more helpful reviews. W I then explore the effect of product type (search versus experience products) on the relationship between personality and review helpfulness. The findings indicate that the negative effects of high openness and neuroticism on review helpfulness are more pronounced for experience products than for search products.

1. Introduction

In an increasingly complex world, consumers are presented with myriad choices, rendering the process of buying products or services—online or offline—cumbersome. Consequently, consumers rely not only on the features, price, and photos of the products and/or services they wish to buy but also on the reviews submitted by fellow shoppers online (Salehan & Kim, 2016). In fact, studies have shown that consumers tend to give more attention to the information generated by other customers than by the sellers (Bickart & Schindler, 2001). Furthermore, previous studies have stated that online reviews influence product sales (Duan et al., 2008; Ghose & Ipeirotis, 2010; Cui et al., 2012). Given this backdrop, there is considerable value in analyzing and understanding product reviews and their effects, as evidenced by the growing body of work in both marketing (Godes & Mayzlin, 2004; Chevalier & Mayzlin, 2006; Dellarocas et al., 2007; Pan & Zhang, 2011; Floyd et al., 2014; Purnawirawan et al., 2015; Rosario et al., 2016; Xie et al., 2022) and information systems (Hu, Liu, & Zhang 2008; Duan et al., 2008; Forman et al., 2008; Jabr & Zheng, 2014; Yin et al., 2014; Kuan & Hui, 2015; Shen et al., 2015; Hu et al., 2017; Liu & Karahanna, 2017; Wu, 2017; Siering et al., 2018).

Prior studies have relied on review features, such as the star rating, the helpfulness rating, and the length of the review, rarely incorporating the lexical features of reviews or other characteristics that one might infer from the text. A recent study on online word of mouth encourages IS scholars to focus their research not only on valence and volume but also on the semantic and lexical content of online word of mouth, especially considering the increase in our ability to collect large amounts of unstructured data, such as reviews of products (Jabr et al., 2020). To address this imperative, I investigate the relationship between the personality of

reviewers and the helpfulness of their reviews. In particular, I provide insight into the role of product type (search versus experience) in this relationship. "Review helpfulness" here refers to readers' evaluation of a review in terms of how useful it was to them in assessing the product being reviewed.

One human attribute that has been recently inferred from text is personality. Research has established a consistent and strong connection between language and personality. More specifically, researchers have found that personality is reflected in our use of language (Pennebaker & King, 1999). One of the first findings states that individuals high in neuroticism use first-person singulars, such as I, me, and mine, more than others. In addition, individuals high in agreeableness use more positive words while individuals high in neuroticism use more negative words (Pennebaker & King, 1999; Yarkoni, 2010). Therefore, how frequently I use particular categories of words has proven to reveal clues about our personalities.

The number of studies that predict personality based on language use has increased, as text mining is now a viable alternative to traditional personality questionnaires for inferring personality characteristics. Several studies have found that the use of language when writing blogs, tweets, and Facebook posts can be used to predict personality (Vazire & Gosling, 2004; Marcus et al., 2006; Back et al., 2010; Quercia et al., 2011; Schwartz et al., 2013; Gosling & Mason, 2015; Adamopoulos et al., 2018). In a recent study, Liu et al. (2021) built a deep learning model that uses text in restaurant reviews to infer reviewer's personality. I follow this direction here and infer Amazon reviewers' personalities based on their reviews and assess how this personality affects review helpfulness, while also examining and investigating the role of product type—search versus experience. There have been mixed findings in the literature on

the determinants of review helpfulness. According to Hong et al. (2017), plausible reasons for these mixed findings in the literature are the failure to consider product types and the differences that are likely to exist between reviews from external platforms such as Yelp vis-a-vis internal retail platforms such as Amazon. The difference in product type and review platform may change how personality influences perceived review helpfulness. To draw insights into the helpfulness of reviews, I explicitly address this concern that researchers have expressed regarding how the effects of reviewers' personalities on helpfulness could differ by product type as well as the platform from where the reviews are obtained. This study attempts to fill this gap by answering the following questions: How are reviewers' personality dimensions related to the helpfulness of the reviews they post on an internal platform (i.e., a retailer's website)? Is this relationship between personality and review helpfulness affected by the platform and the type of product being reviewed?

This study offers several contributions to literature and real-world practice. First, there is little doubt that reviews play a key role in shaping consumers' orientation toward particular products. Consequently, there is considerable interest in IS, marketing, and other fields in understanding reviews and how they can help consumers in making their decisions. In this regard, this research contributes to our understanding of online reviews. Specifically, it contributes in the area of personality by looking at how a reviewer's personality affects their review helpfulness. Second, previous research only covered personality, but other elements could affect the relationship between personality and review helpfulness, such as product type and review platform. In this study, I investigate whether reviewers with certain personality traits write more helpful reviews for experience products than search products, or vice versa. I

also study the relationship between personality and review helpfulness in the context of internal review platforms to see whether it confirms or contradicts previous findings related to review helpfulness in external review platforms. I see this as an incremental contribution as I am extending the body of knowledge on this topic.

Third, this study provides practical implications for review platforms. Review platforms are interested in reviews that have a higher chance of being perceived as helpful to their readers, and therefore help those potential customers to make appropriate decisions. For platform designers, knowing that personality matters according to the product type can help them design policies or mechanisms that will intervene should a particular personality not be conducive to helpful reviews. They can use the findings to evolve policies that will facilitate reviews that are perceived to be more helpful. Finally, review platforms can provide tips on writing helpful reviews based on the findings that will enhance the quality of reviews and therefore facilitate reviews that will be perceived as more helpful.

The remainder of the paper is organized as follows: in the next section, I outline the related literature pertinent to this research, then propose a set of hypotheses and a research model. The subsequent section describes the research methodology developed to test these hypotheses, then shows the results. After that, I discuss the findings and outline the theoretical and managerial implications of the findings. Lastly, I conclude with some limitations and directions for future research.

2. Theoretical Background

Language and Personality

It is logical to assume that individuals vary in their use of words and that this could show psychological differences. An individual who speaks using words that show confidence or who speaks using words that show uncertainty is not likely to be doing so randomly; hence, could an individual's choice of words reflect their personality? Funder (1997) defines personality as "an individual's characteristic pattern of thought, emotion, and behavior" (pp. 1–2). On the other hand, language is defined as a means of conveying our thoughts, ideas, and emotions (Sapir, 1921). These two definitions suggest a relationship between personality and language use which answers our question.

Linking language to personality has been demonstrated in several studies where the approach of comparing the use of words with self-reports of personality has been used. Fast and Funder (2008) use samples of written text to predict individual traits. Hu et al. (2007) and Kosinski et al. (2013) use an individual's website browsing behavior to predict their demographics such as age, gender, occupation, and personality. Furthermore, Marcus et al. (2006) and Vazire and Gosling (2004) predicted personality based on personal website content. Additionally, several researchers indicate that Facebook and Twitter profiles can be used to distinguish the personality traits of users (Back et al., 2010; Quercia et al., 2011; Sumner et al., 2011).

One framework for capturing personality traits that is widely recognized in personality research is the Big Five model by McCrae and John (1992). The model consists of five dimensions (OCEAN): Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Table 1 describes the five traits of personality and their high and low associated behaviors. Although individuals can demonstrate all five dimensions, they may score

highly on one or more dimensions and lower on others. Several researchers have used the Big

Five model to extract an individual's personality based on their written texts (Gill et al., 2009;

Back et al., 2010; Liu et al., 2021).

Table 1
Five Traits of Personality and their Associated Characteristics

Trait	Description (Yes/No)	High Behaviors	Low Behaviors
Openness	Is the person inventive and curious versus dogmatic and cautious?	Appreciation for art and ideas; imaginative; more aware of feelings	More straightforward interests; conservative; resistant to change
Conscientiousness	Is the person efficient and organized versus sloppy and careless?	Disciplined; dutiful; persistent; thorough; compulsive perfectionist	Spontaneous; impulsive; less driven by desire for achievement
Extraversion	Is the person outgoing, talkative, and energetic versus reserved and solitary?	Extraverts; warmer; more assertive; action-oriented; talkative; thrill-seeking	Introverts; lowkey; deliberate; require less stimulation
Agreeableness	Is the person trustworthy, straightforward, generous, and modest versus unreliable, complicated, meager, and boastful?	Compassionate; cooperative; considerate; friendly	Suspicious; unfriendly; wary; antagonistic; uncooperative
Neuroticism	Is the person sensitive and nervous versus secure and confident?	Emotional instability; anxious; hostile; prone to depression	Emotional stability; calm; less easily upset

Table recreated from Gill et al. (2009)

Marketing and Personality

Drawing on the marketing literature, the relationship between consumer personality

and marketing has been documented. Hauser et al. (2009) find an increase in a customer's

purchase intention if a website changes its appearance and content according to the customer's

personality type. Also, previous studies have reported that consumers select brands that correspond to their personality characteristics (Milas & Mlačić, 2007; Webb & Gountas, 2006). Hirsh et al. (2012) conduct a study by producing five different advertisements for one product where each advertisement is adjusted to one of the Big Five personality traits. Their results show that if an advertisement is tailored to the customer's personality type it will have more impact on the customer. Thus, I can argue that online platforms could benefit from using online reviews to extract customer's personality traits and accordingly provide better tailored recommendations and review sorting.

Reviews and personality

Most language and personality studies investigate online content generated on social media platforms such as Facebook and Twitter. Collecting users' profiles is accessible due to the nature of those platforms where user content can be retrieved directly from their personal pages. However, online retailers' platforms in which customers publish online reviews (e.g., Amazon, Yelp) do not provide direct access to customers' personal pages. This has resulted in a lack of research that focuses on online review generator's characteristics. However, those platforms have more recently provided academic scholars with access to their online customer review datasets, from which all reviews written by a single customer can be combined, which shows the importance of conducting comprehensive academic research in this area.

Little research has been conducted in the context of online reviews and personality, with the notable exception of the recent study by Liu et al. (2021). In their paper, they test the

possibility of predicting reviewers' helpfulness by extracting their personality traits from previous Yelp reviews and investigating the relationship between personality and review helpfulness. According to their findings, greater review helpfulness is associated with higher levels of openness, conscientiousness, extraversion, and agreeableness, but lower levels of emotional stability. Their analysis was limited to Yelp reviews. Yelp only allows review readers to vote if the review was helpful, while Amazon used to give the reader the option to vote whether a review was helpful or not. This difference in functionality means that existing studies on online reviews are not unified in how they measure helpfulness. Studies that have used Yelp as a data source use the number of helpful votes as a measure while studies that have used Amazon opt to use the ratio of helpful votes to total votes received as the measure of perceived review helpfulness. Ahmad and Laroche (2015) compare the two measurements and find that the helpful vote ratio is a better helpfulness measurement. Furthermore, Hong et al. (2017) state that how we measure helpfulness plays a crucial role in moderating the impact of a range of factors on the helpfulness of reviews, such as review length, readability, star rating, age, reviewer information disclosure, and experience.

Additionally, Liu et al. (2021) limited their analysis to restaurant reviews, while in this paper I expand the analysis of personality and online reviews by looking at reviews that cover more than forty diverse product categories ranging from technology, healthcare, fashion, groceries, books, and more. Categorizing the products will allow us to validate the results for different product types. Liu et al.'s (2021) conclusion could be website, measurement, or product type specific which means it could only be true for Yelp restaurant reviews. According to the meta-analyses of online review helpfulness from Hong et al. (2017) and Wang et al.

(2019), mixed findings in review helpfulness research are moderated by the effect of different studies analyzing different reviews' websites, different product types, or using different measurements of review helpfulness. The current study differs from Liu et al. (2021) in those aspects and sheds additional light on the research area by examining the effect of product type on the relationship between personality and review helpfulness. In the following section, I look at previous research work related to studying product type effect on online review helpfulness.

Product Type and Review Helpfulness

Products are frequently characterized as either search or experience (Nelson, 1970; Mudambi & Schuff, 2010). Search products are defined as products of which customers are able to gather information about the quality before purchase. Experience products are defined as products that customers need to purchase or experience before they can be evaluated. The main distinction between search and experience products is the level of uncertainty about the product's quality before making the purchase. Initial studies that looked at the differences in product types were about offline shopping; however, Girard and Dion (2010) were able to validate the search and experience product classification in the online shopping context and they confirm that the risk associated with experience products is significantly higher than that associated with search products.

Examples of search products include cell phones, printers, and digital cameras (Chen et al., 2015; Huang et al., 2015; Xia & Bechwati, 2008). Examples of experience products include video games, books, and skin care (Bjering et al., 2015; Chen et al., 2015; Cheung et al., 2014;

Mudambi & Schuff, 2010). According to Huang et al. (2009) and Chua and Banerjee (2014), customers process information in distinct ways for search and experience products. Review helpfulness for experience products could be judged subjectively regardless of the quality of the information in a review. On the other hand, consumers tend to agree on the review helpfulness for search products as they can make objective judgments based on the product information provided by the seller.

Several studies investigated the product type moderation effect between online review helpfulness and its determinants such as review star rating, word count, readability, and age (Baek et al., 2012; Lee & Choeh, 2016; Mudambi & Schuff, 2010; Purnawirawan et al., 2015; Siering et al., 2018). Mudambi and Schuff (2010) concluded that product type affected the perceived helpfulness of reviews. They found that product type moderates the effects of review star rating and review length on review helpfulness. Reviews with extreme ratings, whether positive or negative, are less helpful for experience products than reviews with moderate ratings. And for search products, review length has a greater positive effect on helpfulness than for experience products. Both Purnawirawan et al. (2015) and Hong et al. (2017) conducted meta-analyses on the influence of review characteristics on review helpfulness with the use of product type as a moderator. Both studies found that review length and review rating show a larger positive influence on the helpfulness of a review for experience products than for search products. Additionally, Wang et al. (2019) found that product type significantly moderates the effects of review length and star rating. However, they did not find a significant moderation effect on review readability and age.

Consequently, product type could affect how a review helpfulness determinant—reviewer's personality in this study—impacts perceived review helpfulness. Taking into consideration these different strands of the literature, the objective is first to use the review text provided by customers to extract their personalities. Then, I link customers' personality traits with the performance and characteristics of their reviews to study its effect on perceived helpfulness. Lastly, I examine the possible differences in the relationship between personality and review helpfulness between the two product types.

3. Hypotheses Development

In this paper, reviewer personality will be presented using the Big Five personality traits (OCEAN): Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. In this section, I provide related findings about the five personality dimensions that have been demonstrated in previous literature and based on them I hypothesize the relationships between reviewers' personality dimensions and review helpfulness. Then I hypothesize the moderation effect of product type on the relationship between reviewers' personality dimensions and review helpfulness. Figure 1 illustrates the model.
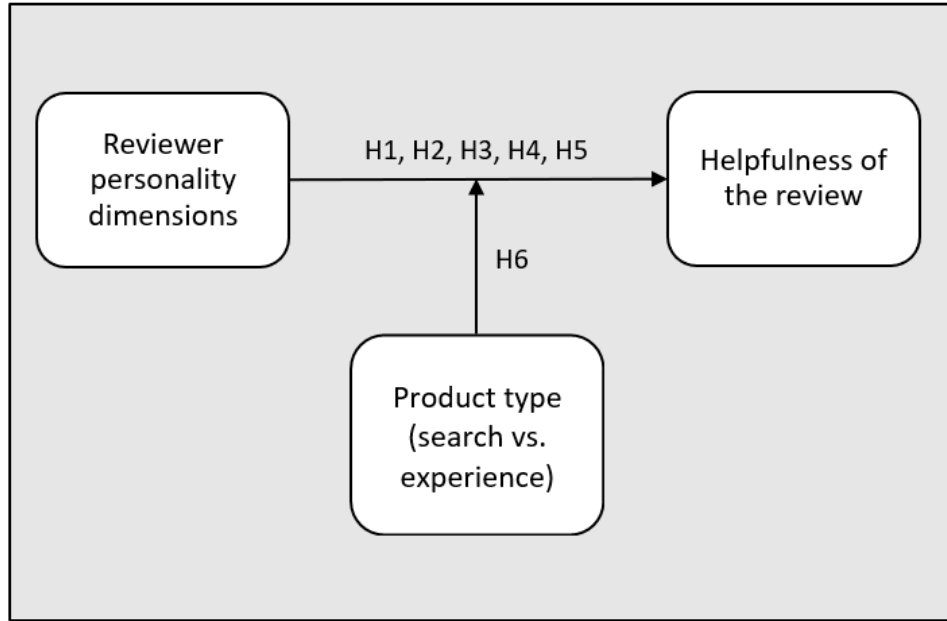
Figure 1. Research Model

Openness has previously been related to higher levels of creativity and innovativeness (DeYoung et al., 2005). Goldsmith (2002) suggests that individuals with high degrees of innovativeness would shop online more than others. McElroy et al. (2007) state that even though computers are widespread nowadays, personality differences still explain the variations in terms of using them. Therefore, I expect reviewers to lean more toward having high openness levels in general.

Wang and Yang (2007) document a positive relationship between this personality trait and knowledge sharing. Additionally, individuals with high openness tend to post comments and updates more actively on social networks (Pagani et al., 2011). Pervin et al. (2004) state that individuals with greater openness take a greater interest in new things. Individuals who take an interest in new things are considered early adopters and consequently will be among

the first to write reviews for a product. Multiple studies have documented a positive

relationship between review age and helpfulness; the older a review is, the greater its

perceived helpfulness (Ghose & Ipeirotis, 2007; Liu & Park, 2015; Pan & Zhang, 2011; Park &

Nicolau, 2015; Racherla & Friske, 2012; Zhu et al., 2014). Therefore, I predict that reviews

written by individuals with higher openness scores would be perceived as more helpful since

those individuals tend to be early adopters and consequently be among the first to write

reviews for a product.

> H1: There is a positive relationship between reviewer openness and review
> perceived helpfulness.

Wang and Yang (2007) also document a positive relationship between the personality

trait of conscientiousness and knowledge sharing. In addition, according to Thompson (2008)

and Pervin et al. (2004), conscientious individuals are extremely careful, thorough, and exhibit a

high level of attention to detail; therefore, I predict their reviews to be longer and include more

meaningful details to readers which will consequently result in them receiving more helpful

votes. Based on Racherla and Friske (2012), longer reviews can receive more attention since

customers may have a higher chance of finding the review content they are looking for in

longer texts.

> H2: There is a positive relationship between reviewer conscientiousness and
> review perceived helpfulness.

Ranjbarian et al. (2013) find that extraverted individuals use more word-of-mouth communication than introverts. Additionally, Mitchellette (2008) concluded after an in-depth analysis of introversion and extraversion that extraverts outperform introverts in terms of communication, interaction skills, and the ability to convince others. In the context of online reviews, this leads us to predict that reviews written by extraverts would have greater influence on readers, which would lead them to receive more helpful votes. Similarly, McCroskey and Richmond (1990) state that extraverts are talkative and have a greater desire to communicate, and longer reviews have been shown in the literature to be perceived as more helpful (Mudambi & Schuff, 2010). Therefore, I hypothesize:

> H3: There is a positive relationship between reviewer extraversion and review perceived helpfulness.

McCrae and John (1992) state that a high score of agreeableness is related to a high score of helpfulness. Furthermore, studies have shown that people with high levels of agreeableness are more inclined to share information, and one of the ways they do so in contemporary society is by writing online reviews (Taggar, 2002; Adamopoulos et al., 2018). Additionally, agreeable people are known for their compromising nature and often prioritize the needs of others over their own (DeYoung et al., 2005). Such a trait could lead agreeable individuals to be more subjective and persuasive when they share information about a product and to try to focus their review on what others might find useful. Therefore, it can be inferred that individuals with agreeable traits are more likely to be motivated to share valuable reviews

to assist future customers in making informed purchasing decisions. Accordingly, I hypothesize that:

> H4: There is a positive relationship between reviewer agreeableness and review perceived helpfulness.

According to Pennebaker and King (1999), individuals with high neuroticism tend to use more negative emotion words. Additionally, neuroticism is the only personality trait that has a negative effect on customer loyalty satisfaction (Karbasi et al., 2014). Compared to emotionally stable individuals, neurotic individuals tend to use more negative words in their communication and have lower satisfaction which make them more prone to publishing negative reviews, and in literature, negative reviews are predicted to have higher perceived helpfulness than positive reviews (Kuan et al., 2015; Cao et al., 2011; Willemsen et al., 2011; Sen & Lerman 2007).

> H5: There is a positive relationship between reviewer neuroticism and review perceived helpfulness.

The literature shows that online customers process product information in different ways depending on whether the product is categorized as a search or an experience product. Customers can evaluate the quality of a search product objectively through its information (Chua & Banerjee, 2016). However, experience product customers usually seek additional information other than that provided by the sellers to reduce the risk and uncertainty associated with these types of products (Huang et al., 2015). Therefore, the difference in product type may affect how reviewer personality traits influence perceived review helpfulness

in the same way the effects of the other review helpfulness determinants were found to be influenced by the product type (Mudambi & Schuff, 2010). In this study context, if a customer writes reviews for both search products and experience products, I expect that the effect of their personality on their reviews' perceived helpfulness will be different across the product types.

> H6: The relationship between personality and review helpfulness is different across product types.

4. Research Methodology

Data

The data used for this study is from Amazon Customer Reviews Datasets that are available through the Amazon Simple Storage Service for academic research (Amazon S3). The data has more than 150 million customer reviews from 1995 until 2015 and is distributed in 46 datasets based on product category for the U.S. marketplace. Liu et al. (2021) used Yelp to extract customers' personalities from their reviews. According to Wang et al. (2019), Yelp is classified as an external review platform as it is a third-party review website, while Amazon is classified as an internal review platform where reviews are obtained from their own customers. They also found that mixed findings in review helpfulness determinates research are moderated by the effect of studies analyzing different review websites. To differentiate this study and ensure robustness, I am collecting the data from which to infer personality from

Amazon, which is another academically popular tool. The results could either affirm Liu et al.'s

(2021) findings or contradict them.

Figure 2. Customer Reviews Dataset

Table 2
Amazon Original Variables Definitions

Variable	Description	Used (Y/N)
Marketplace	Two-letter country code of the marketplace where the review was written. I will use US market reviews.	Y
Customer ID	Random identifier that can be used to aggregate reviews written by a single author.	Y
Review ID	The unique ID of the review.	Y
Product ID	The unique Product ID the review pertains to.	Y
Product Parent	Random identifier that can be used to aggregate reviews for the same product.	N
Product Title	Title of the product.	N
Product Category	Broad product category that can be used to group reviews. (Apparel, Appliance, Auto, Baby, Beauty, Book, Camera, Digital eBook, Digital Music Purchase, Digital Software, Digital Video Download, Digital Video Game, Electronic, Furniture, Gift Card, Grocery, Health Personal Care, Home, Home Entertainment, Home Improvement, Jewelry, Kitchen, Lawn and Garden, Luggage, Mobile Applications, Mobile Electronic, Music, Music Instrument, Office, Outdoors, Personal Care, Personal Computers, Pet, Shoes, Software, Sport, Tools, Toys, Video, Video Games, Watches, Wireless)	Y
Star Rating	The 1–5 star rating of the review.	Y
Helpful Votes	Number of helpful votes.	Y
Total Votes	Number of total votes the review received.	Y
Vine	Review was written as part of the Vine program.	N
Verified Purchase	Dummy variable that equals 1 for a review on a verified purchase and 0 otherwise.	Y
Review Headline	The title of the review.	Y
Review Body	The full review texts. These will be used to extract reviewer personality.	Y
Review Date	The date the review was written.	Y

Figure 2 shows a snapshot of the customer reviews dataset. Table 2 lists the variables in Amazon's original dataset, their definitions, and whether the variable will be used in this study or not. I explain the procedure and define the variables I used in the analysis in the following section.

Procedure and Variables

As a measure to improve the analysis by obtaining the dependent and independent variables from different sets of reviews, I randomly split the dataset into two sections. I use the first section of the dataset in the process of personality extraction. Reviews in the first section are used to collect customer reviews text body which then will be used in the personality extraction step. For each customer ID, I compile the review texts that the customer wrote in one full text.

The second part of the original dataset is used to extract the dependent variable and control variables that are defined in Table 3. In the analysis, I follow previous research that examined review helpfulness, and control for a series of relevant variables, such as star rating, star rating squared, review age, review length, review reading level, purchase verification, and review ranks based on reviewer and product.

In review helpfulness studies, review depth—also referred to as review length—is one of the major positive determinants of perceived helpfulness (Baek et al., 2012; Fang et al., 2016; Kuan et al., 2015; Salehan & Kim, 2016; Wu, 2013; Yin et al., 2016; Zhang et al., 2010). Also, according to Yin et al. (2014), if a review is long, it receives more helpful votes solely

because readers consider it more informative; therefore, I control for this possible effect by calculating the total number of words in a review text. I additionally control for star rating as it has been an important predictor of review helpfulness in previous literature (e.g., Baek et al., 2012; Chua & Banerjee, 2016; Huang et al., 2015; Lu et al., 2018). I also control for the square of the star rating to account for the possibility of a nonlinear relationship between helpfulness and star rating (Mudambi & Schuff, 2010; Danescu-Niculescu-Mizil et al., 2009). Following Ghose and Ipeirotis (2011) and Yin et al. (2014), I measure a review reading level using the Coleman–Liau Index to control for how the difficulty a reader had in reading a review impacted their helpfulness vote.

Since earlier reviews, in general, tend to collect more helpful votes (Ghose & Ipeirotis, 2007; Liu & Park, 2015; Pan & Zhang, 2011; Park & Nicolau, 2015; Racherla & Friske, 2012; Zhu et al., 2014), I control for how long a review exists by calculating the number of days between the date the review was published and the date the data was collected in 2015. I also control for whether Amazon verified that the person writing the review purchased the product on Amazon. I add this control variable to account for the possible effect on readers who might think reviews with the "Amazon Verified Purchase" mark are more trustworthy and therefore more helpful (Craciun et al., 2020).

The last two control variables that I include in the analysis are related to the order of a review among all the reviewer's published reviews and all the product's reviews. These two variables allow us to control for two factors: first, a reviewer's experience in writing reviews, as it is possible that reviewers could benefit from their experience in writing reviews to gain more helpful votes. Second, the factor of review rank among other product reviews. Early product

reviews could receive more helpful votes simply because they were there when new possible

customers explored a product (Godes & Silva, 2012).

For each review, I calculate the ratio of helpful votes to total votes the review received

(DV). I used the helpfulness ratio to represent the dependent variable—review perceived

helpfulness—following Mudambi and Schuff (2010) and Ghose and Ipeirotis (2011). Although

there are studies that use the number of helpful votes as a measure of perceived review

helpfulness, I opt for the helpfulness ratio, as Ahmad and Laroche (2015) find that the helpful

vote ratio is a better helpfulness measure compared to the total number of votes.

In total, I had 212,170 reviews written by the randomly selected 5,692 Amazon

customers. The descriptive statistics for the variables in the dataset are included in Table 3. In

the sample, the average number of words in a review is 122 words, the average review stars is

4.20, and the average readability index is 7, which means that on average, reviews in the

sample were written at a reading age of 7th grade in the US schooling system.

Table 3
Research Variables

Variable	Description	Mean	SD
	Dependent variable		
Helpfulness ratio (DV)	Ratio of helpful votes out of the total votes a review received ($\frac{Helpful\ votes}{Total\ votes}$)*	.75	.34
	Independent variables		
Product type	Product category type dummy: 0 = search 1 = experience	.46	.50
Agreeableness	Customer's agreeableness percentile score	.524	.08
Conscientiousness	Customer's conscientiousness percentile score	.523	.07
Openness	Customer's openness percentile score	.509	.06
Extraversion	Customer's extraversion percentile score	.546	.08
Neuroticism	Customer's neuroticism percentile score	.408	.07

Control variables			
Star rating	Customer overall satisfaction with the product. Rating ranges from 1 to 5 where 1 is low and 5 is high (demeaned)	0	1.08
Star rating squared	Square of (demeaned) star rating to account for the possibility of a nonlinear relationship between helpfulness and star rating (Mudambi & Schuff, 2010)	1.16	2.10
Review age	Number of days between the date the review was published and the date the data was collected in 2015. To control for how long a review exists since earlier reviews might collect more helpful votes.	1056	1153
Word count	Number of words in the review. Longer reviews may contain more information which leads to more helpful votes (Yin et al., 2014)	122	166
Readability index	The Coleman–Liau Readability Index score for the review. To control for reading difficulty impact on review helpfulness.	7	2.7
Verified purchase	A dummy variable that equals 1 if the review is on a verified purchase or 0 if otherwise.	.71	.45
Review rank user	Order of the review among all reviewer's reviews. To control for reviewer's expertise in writing reviews.	45	82
Review rank product	Order of the review among all product's reviews. To control for reviews' sequential effects (Godes & Silva, 2012).	190	1010

* Before mid-2018, Amazon used to give users the option to choose whether a review is "Helpful" or "Unhelpful" to them (Appendix 1).

Personality Extraction

We use Receptiviti API to extract customers' personality traits from the text of their reviews. Receptiviti is a language analysis platform that has been extensively validated and utilized to comprehend human psychology, including personality, emotions, motivation, and other related aspects, through analyzing language. Receptiviti's minimum word count to be able to extract personality is 350 words, and based on two samples from the original data (1 million reviews), the average length of a review is 70 words. With text cleaning that would decrease to about 50; therefore, if I need a minimum of 350 words in the text sample per

reviewer, I need a minimum of 7 reviews on average to extract personalities. The outcome of the service is a comma-separated file that contains the personality profile of each customer. The personality profile includes the customer percentile in each one of the Big Five traits (OCEAN). For example, customer A personality analysis returned an extraversion value of 0.60022836. This result shows that customer A scored in the 60th percentile; customer A is more open than 59 percent of the population and less open than 39 percent of the population. The last step is to compile the customer's personality results into one file that has a customer ID, agreeableness score, conscientiousness score, extraversion score, neuroticism score, and openness score. Figure 3 below shows the distributions of reviewers' personalities. There are more instances of people with some personality traits such as agreeableness and conscientiousness than others such as neuroticism. This indicates that individuals with certain personalities may be more willing to write product reviews.
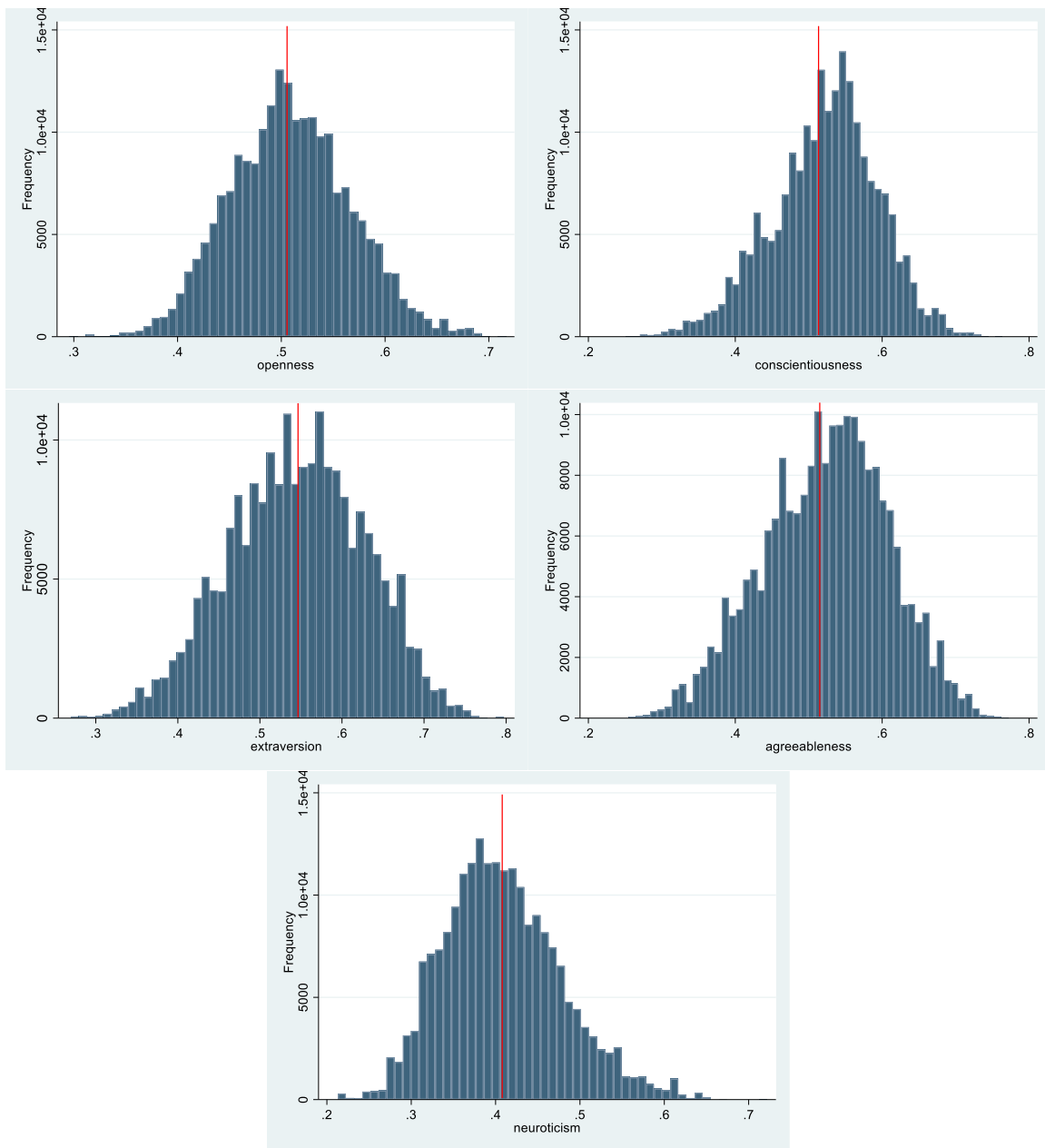
Figure 3. Distributions of Reviewers' Personalities

Product Type

In order to understand how the product type may affect the findings related to personality and perceived review helpfulness, I categorize multiple product categories into search or experience product types. I follow previous literature regarding product type

classification. I choose Camera, Jewelry, Mobile Electronics, Office Products, PC (Personal

Computers), Shoes, Toys, Watches, Wireless as the search products and Beauty, Video, Video

Games, Music, and Music Instruments as the experience products, as shown in Table 4 (Baek et

al., 2012; Bjering et al., 2015; Chen et al., 2015; Chen et al., 2008; Im et al., 2016; Korfiatis et al.,

2012; Nelson, 1970; Weathers et al., 2015). The characteristics and performance of search

products can be described online, while the characteristics and quality of experience products

are hard to communicate, which leads consumers to face a high degree of information

asymmetry (Lal & Sarvary, 1999; Nelson, 1970). As a result, online consumers for experience

products face more uncertainty about product quality (Weathers et al., 2007).

Following Mudambi and Schuff (2010) and Hong et al. (2017), I create two subsamples

to further examine the product type effect. The first subsample includes 38,529 reviews that

belong to the search product category and the second subsample includes 32,952 reviews that

belong to the experience product category.

Table 4
Search and Experience Products Selection

Product Type	Product	Source
Search	Camera	Chen et al. (2015); Chen et al. (2008); Huang et al. (2015); Xia & Bechwati (2008)
	Jewelry	Baek et al. (2012); Nelson (1970)
	Mobile Electronics	Kapoor et al. (2021); Chen et al. (2015); Chen et al. (2008); Krishnamoorthy (2015); Weathers et al. (2007)
	Office Products	Baek et al. (2012)
	Shoes	
	PC	Weathers et al. (2015)
	Toys	Im et al. (2016)
	Watches	Nelson (1970)
	Wireless	Chen et al. (2015); Chen et al. (2008); Krishnamoorthy (2015); Weathers et al.(2007)

Experience	Beauty	Bjering et al. (2015); Cheung et al. (2014); Willemsen et al. (2011)
	Video Video Games Music Instruments	Baek et al. (2012)
	Music	Huang et al. (2015); Krishnamoorthy (2015); Mudambi & Schuff (2010)

Analysis Method

We apply the regression model below to test how the big five personality traits influence the dependent variable, review helpfulness, which responds to the first five hypotheses:

$$Helpfulness_{ij} = \beta_0 + \beta_1 Agreeableness_i + \beta_2 Conscientiousness_i + \beta_3 Extraversion_i + \beta_4 Neuroticism_i + \beta_5 Openness_i + \beta_{6-11} control\ variables_{ij} + e_{ij}$$

Our analysis is on the customer review level. Helpfulness indicates the ratio of helpful votes out of the total votes received for a review written by reviewer *i* for product *j*. The control variables are also specific to review$_{ij}$, written by reviewer *i* for product *j*. The big five personality traits variables represent reviewer *i's* personality profile received from Receptiviti API. Thus, each reviewer has the same set of personality traits across their published reviews. To test for the sixth hypothesis, I run the above regression model for each product category subsample. In the next section, I report the model results.

In H6, I hypothesize that the effect of reviewer's personality on review helpfulness will be different between product types. To test this hypothesis, I apply the following interaction model:

$$Helpfulness_{ij} = \beta_0 + \beta_1 Product\ Type_i + \beta_2 Agreeableness_i + \beta_3 Conscientiousness_i +$$
$$\beta_4 Extraversion_i + \beta_5 Neuroticism_i + \beta_6 Openness_i + \beta_7 Agreeableness\ X\ Product\ Type_i +$$
$$\beta_8 Conscientiousness\ X\ Product\ Type_i + \beta_9 Extraversion\ X\ Product\ Type_i + \beta_{10} Neuroticism\ X$$
$$Product\ Type_i + \beta_{11} Openness\ X\ Product\ Type_i + \beta_{12-19} control\ variables_{ij} + e_{ij}$$

5. Results

Table 5 shows the main regression analysis results that test for the first five hypotheses. Four of the Big Five personality traits are significantly related to helpfulness at the 0.01 level. I found positive relationships between conscientiousness and agreeableness with review helpfulness in addition to negative relationships between openness and neuroticism with review helpfulness. These results mean that the reviewer helpfulness will increase the more the reviewer is conscientious or agreeable and the reviewer helpfulness will decrease the more the reviewer is open or neurotic. In more detail, a one-point increase in a reviewer's agreeableness would increase their review helpfulness by .19 points. Therefore, I found support for two hypotheses: there are positive relationships between reviewer conscientiousness and agreeableness and review perceived helpfulness. However, I did not find support for the hypothesis which states that there is a positive relationship between extraversion and review perceived helpfulness.

Two of the results are consistent with the findings of Liu et al. (2021). Both this study

and that of Liu et al. (2021) found positive relationships between conscientiousness and

agreeableness with review helpfulness. Regarding extraversion, Liu et al. (2021) predict and find

a positive relationship with review helpfulness. I hypothesize the same relationship; however, I

found a positive but insignificant relationship in the analysis. Regarding openness and

neuroticism, Liu et al. (2021) predicts and finds a positive relationship between openness and

review helpfulness and a negative relationship between emotional stability, which contrasts

with neuroticism, and review helpfulness. I hypothesized the same directional relationships but

find the opposite direction in the result as I find negative relationships between openness and

neuroticism with review helpfulness.

In terms of the control variables, most are significant and have the expected

relationship with helpfulness consistent with prior studies. According to the results, several

factors increase review helpfulness, such as writing a longer review, a higher readability level, a

verified purchase mark, and being a later review written by the reviewer. However, if a product

had already received a large number of reviews, a new review would have a lower chance of

being voted as helpful.

Table 5
Main Analysis Regression Result

Helpfulness Ratio	Coefficient	Standard Error	t-value	p-value	[95% conf.	interval]	Sig
OPENNESS	-0.0614	0.0205	-2.99	0.003	-0.1017	-0.0211	***
CONSCIENTIOUSNESS	0.0468	0.0190	2.46	0.014	0.0095	0.0840	**
EXTRAVERSION	0.0045	0.0176	0.26	0.796	-0.0299	0.0390	
AGREEABLENESS	0.1868	0.0189	9.90	0.000	0.1498	0.2238	***
NEUROTICISM	-0.1316	0.0172	-7.65	0.000	-0.1652	-0.0979	***
STAR_RATING	0.0561	0.0013	42.88	0.000	0.0536	0.0587	***

STAR RATING SQ	-0.0009	0.0007	-1.38	0.166	-0.0022	0.0004	
WORDCOUNT	0.0002	0.000006	26.02	0.000	0.0001	0.0002	***
READABILITY	0.0056	0.0005	11.78	0.000	0.0047	0.0066	***
REVIEW_AGE	-0.000002	0.000001	-2.21	0.027	-0.000004	-0.0000002	**
VERIFIED PURCHASE	0.0168	0.0025	6.72	0.000	0.012	0.022	***
USER RANK	0.00004	0.00001	3.03	0.002	0.00001	0.00006	***
PRODUCT RANK	-0.000018	0.000002	-8.19	0.000	-0.00002	-0.00001	***
_CONS	0.6555	0.0173	37.95	0.000	0.622	0.689	***

To control for homoscedasticity assumption in the regression I run the model using robust standard errors. To detect multicollinearity, I check the correlation matrix in Table 6, and all values are below the threshold of 0.8 (Judge et al., 1988, p. 868). In addition, a variance inflation factor (VIF) test was conducted, and the results are shown in Table 7. VIF values are less than 10, the tolerance values are greater than .1, and the average inflation factor is not substantially greater than 1; this indicates that I do not have a multicollinearity problem in the analyses.

Table 6
Correlation Matrix

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) helpfulness ratio	1												
(2) openness	0.005	1											
(3) conscientiousness	0.031	-0.196	1										
(4) extraversion	0.039	0.160	0.483	1									
(5) agreeableness	0.053	0.079	0.551	0.638	1								
(6) neuroticism	-0.055	0.010	-0.218	-0.345	-0.44	1							
(7) star rating	0.203	0.019	-0.001	0.013	0.01	-0.0132	1						
(8) star rating squared	-0.160	-0.040	-0.046	-0.091	-0.09	0.0846	-0.72	1					
(9) wordcount	0.082	0.052	-0.132	-0.069	-0.12	0.0159	0.016	-0.042	1				
(10) readability	0.053	0.202	-0.133	-0.032	-0.11	-0.0496	0.048	-0.055	0.150	1			
(11) review age	-0.001	0.162	-0.139	-0.049	-0.13	0.0225	0.040	-0.008	0.126	0.131	1		
(12) verified purchase	0.008	-0.135	0.115	-0.004	0.077	-0.032	0.023	-0.013	-0.246	-0.141	-0.377	1	
(13) user rank	0.027	0.038	-0.013	0.020	-0.015	-0.006	0.020	-0.060	0.181	0.040	-0.126	-0.148	1
(14) product rank	-0.042	-0.021	0.006	0.005	0.004	0.011	-0.027	0.028	-0.009	-0.026	-0.056	0.037	-0.009

Table 7

Variance Inflation Factor

Variable	VIF	1/VIF
agreeableness	2.24	0.447
extraversion	1.88	0.532
conscientiousness	1.7	0.588
neuroticism	1.29	0.774
verified purchase	1.28	0.780
review age	1.27	0.789
openness	1.23	0.811
wordcount	1.12	0.892
readability	1.11	0.904
user rank	1.1	0.911
star rating	1.01	0.992
product rank	1	0.995
Mean VIF	1.35	

To test Hypothesis 6, I examine the interaction of personality and product type. Does the product type difference in helpfulness differ based on the personality trait level? The interaction term indicates how the effect of personality on review helpfulness varies across product types. If the interaction term is significant and positive, this would suggest that the effect of personality traits on review helpfulness is stronger for the experience product type than for the search product type. On the other hand, if the interaction term is significant and negative, this would suggest that the effect of personality on review helpfulness is weaker for experience product type than for search product type.

As shown in Table 8, holding all other variables constant, there is a 0.184 unconditional impact of Product Type on review helpfulness. The Product Type x Extraversion interaction is significantly negative, revealing a stronger effect of the extraversion personality trait for search products than for experience products. This suggests that for every 1 percentile increase in the

extraversion score, an experience product review is expected to be -0.22 less in the helpfulness

ratio. In other words, the increase in the helpfulness ratio for having a higher extraversion

differs for search and experience products. Another way to explain this result is that the

difference in the helpfulness ratio between search and experience products widens as the

extraversion score increases.

Additionally, both the openness and the Product Type x Openness effects are significant,

revealing a stronger effect of the openness personality trait for search products than for

experience products. The Product Type x Neuroticism interaction is significantly negative,

revealing a stronger effect of the neuroticism personality trait for search products than for

experience products. Conscientiousness has a significant positive main effect for search

products.

Table 8
Personality x Product Type Interaction Regression Result

Helpfulness Ratio	Coefficient	Standard Error	t-value	p-value	Sig
PRODUCT TYPE	0.184	0.055	3.34	0.001	***
OPENNESS	0.139	0.051	2.71	0.007	***
CONSCIENTIOUSNESS	0.119	0.049	2.42	0.016	**
EXTRAVERSION	0.033	0.046	0.72	0.473	
AGREEABLENESS	0.160	0.047	3.42	0.001	***
NEUROTICISM	0.010	0.046	0.23	0.819	
PRODUCT TYPE X OPENNESS	-0.127	0.069	-1.84	0.066	*
PRODUCT TYPE X CONSCIENTIOUSNESS	-0.074	0.066	-1.11	0.267	
PRODUCT TYPE X EXTRAVERSION	-0.220	0.063	-3.51	0	***
PRODUCT TYPE X AGREEABLENESS	0.086	0.062	1.38	0.167	
PRODUCT TYPE X NEUROTICISM	-0.311	0.058	-5.33	0	***
STAR_RATING	0.061	0.002	28.88	0	***
STAR RATING SQ	0.000005	0.001	0	0.996	
WORDCOUNT	0.0002	0.000	20.18	0	***
READABILITY	0.007	0.001	7.98	0	***
REVIEW AGE	0.00002	0.000	11.22	0	***
VERIFIED PURCHASE	0.017	0.004	3.91	0	***
USER RANK	0.0001	0.000	2.26	0.024	**

PRODUCT RANK	-0.00003	0.000	-6.55	0	***
CONSTANT	0.451	0.042	10.72	0	***

*** p<.01, ** p<.05, * p<.1

Tables 9 and 10 show separate regressions for each product category to help interpret and explain the interaction. The subgroup result in Table 9 is for the search product category and the subgroup result in Table 10 is for the experience product category. For search products, openness, conscientiousness, and agreeableness are the personality dimensions that are significant in predicting review helpfulness. In Figure 4, I plot simple slopes of the effect of product type on review helpfulness at low and high levels of extraversion and neuroticism. The difference between the two slopes is significant, with the relationship between extraversion and helpfulness positive for Search products and negative for Experience products. The relationship between Extraversion and helpfulness changes direction based on the product type. If someone were to ask whether an introvert or an extravert would receive higher helpfulness votes, we would respond, "It depends." In this case, it depends on the product type. We cannot answer the question about personality without knowing the product type. The results align with the literature that says the influence of determinants such as review star rating and length of the review on review helpfulness is stronger for experience products than for search products.
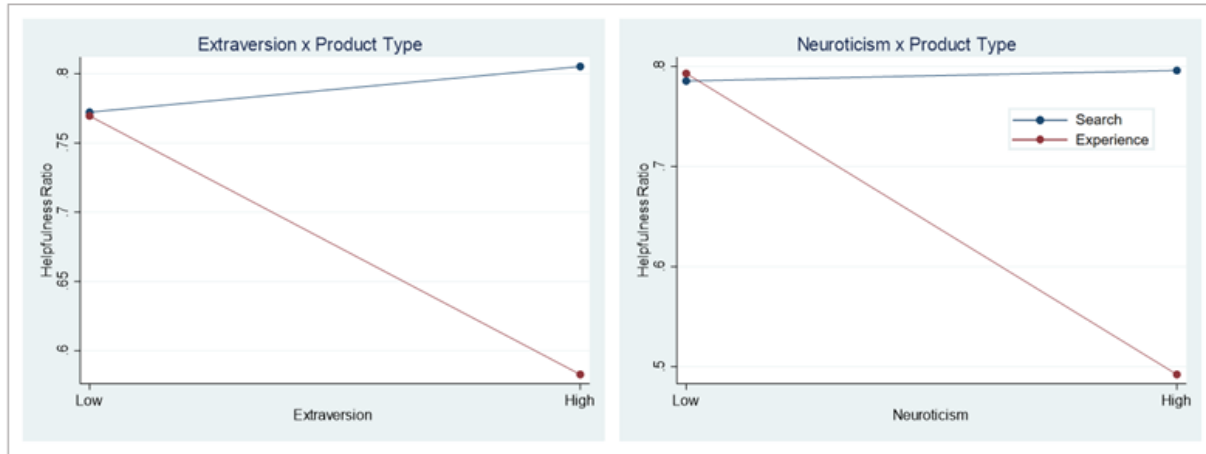
Figure 4. Simple Slopes of the Effect of Product Type on Review Helpfulness

Table 9

Search Subgroup Analysis Regression Result

helpfulness_ratio	Coefficient	Standard Error	t-value	p-value	[95% conf.	interval]	Sig
OPENNESS	0.140	0.051	2.74	0.006	0.040	0.241	***
CONSCIENTIOUSNESS	0.127	0.049	2.57	0.01	0.030	0.223	**
EXTRAVERSION	0.028	0.046	0.62	0.536	-0.061	0.118	
AGREEABLENESS	0.142	0.047	3.02	0.003	0.050	0.234	***
NEUROTICISM	-0.019	0.046	-0.42	0.674	-0.110	0.071	
STAR_RATING	0.053	0.003	17.11	0	0.047	0.060	***
STAR RATING SQ	0.002	0.002	1.12	0.261	-0.001	0.005	
WORDCOUNT	0.0001	0.00001	11.82	0	0.0001	0.0002	***
READABILITY	0.004	0.001	2.99	0.003	0.001	0.007	***
REVIEW_AGE	0.00003	0.000003	11.05	0	0.00002	0.00003	***
VERIFIED PURCHASE	0.015	0.006	2.37	0.018	0.003	0.028	**
USER RANK	-0.00003	0.00004	-0.74	0.457	-0.0001	0.00004	
PRODUCT RANK	-0.00001	0.000004	-3.45	0.001	-0.00002	-0.00001	***
_CONS	0.477	0.044	10.81	0	0.390	0.563	***

Table 10

Experience Subgroup Analysis Regression Result

helpfulness_ratio	Coefficient	Standard Error	t-value	p-value	[95% conf.	interval]	Sig
OPENNESS	-0.0124	0.0478	-0.26	0.796	-0.106	0.081	
CONSCIENTIOUSNESS	0.0268	0.0445	0.6	0.547	-0.060	0.114	
EXTRAVERSION	-0.1673	0.0428	-3.91	0	-0.251	-0.083	***
AGREEABLENESS	0.2607	0.0431	6.05	0	0.176	0.345	***

NEUROTICISM	-0.2704	0.0375	-7.22	0	-0.344	-0.197	***
STAR_RATING	0.0671	0.0029	23.35	0	0.061	0.073	***
STAR RATING SQ	-0.0023	0.0014	-1.57	0.118	-0.005	0.001	
WORDCOUNT	0.0002	0.0000	16.25	0	0.0002	0.0002	***
READABILITY	0.0084	0.0011	7.46	0	0.006	0.011	***
REVIEW_AGE	0.00001	0.000002	6.68	0	0.00001	0.00001	***
VERIFIED PURCHASE	0.0134	0.0057	2.33	0.02	0.002	0.025	**
USER RANK	0.0001	0.00003	3.92	0	0.0001	0.0002	***
PRODUCT RANK	-0.0001	0.00001	-8.6	0	-0.0001	-0.0001	***
_CONS	0.6299	0.0393	16.05	0	0.553	0.707	***

For the experience product type, extraversion, agreeableness, and neuroticism are statically significant at the 0.01 level in predicting review helpfulness. The findings regarding the control variables relationships with review helpfulness in experience and search product subgroups are in line with previous literature findings.

6. Discussion

In this paper, I examine the relationship between a reviewer's personality and their reviews' perceived helpfulness in the context of internal review platforms. I then investigate the effect of product type on this relationship. According to the results, four out of the Big Five personality traits are significantly related to a reviewer's helpfulness rate. I conclude that in general, a review's perceived helpfulness is positively related to the reviewer's conscientiousness and agreeableness traits. On the other hand, a review's perceived helpfulness is negatively correlated with the reviewer's openness and neuroticism traits. Consequently, we can say that in the context of internal review platforms, reviewers high in

conscientiousness and agreeableness write more helpful reviews while reviewers high in openness and neuroticism write less helpful reviews.

Even though I hypothesized that neuroticism would have a positive relationship with helpfulness, the result shows the opposite. A possible explanation for the finding could be that neuroticism is found to be positively related to the expression of anger in online posts (Bai et al., 2012), and according to Yin et al. (2014), reviews expressing anger are perceived as less helpful than reviews expressing anxiety. Additionally, I hypothesized that openness would have a positive relationship with helpfulness, but the result shows the opposite. Fifty percent of the reviews in Amazon's original review dataset were submitted by customers who only wrote one review during the data collection period from 1995 to 2015. Receptiviti, the tool I used to extract personality from review text, requires a minimum of 350 words to be able to extract the customer's personality. To meet this requirement, I only considered customers who submitted a minimum of ten reviews. Therefore, there is a chance that they are in any case more open than most of the population.

Another insight from the results is that the relationship between reviewer personality and review helpfulness is different between the two product types. As indicated by the results, reviewers with high openness, extraversion, and neuroticism receive more helpful votes when they review search products than experience products. This conclusion advises review platforms to try and attract customers with relatively high openness, extraversion, and neuroticism to write reviews for search products. Furthermore, according to the product type subgroup analyses, openness and conscientiousness personality traits can predict who writes more helpful reviews for search products but not for experience products. In a similar fashion,

agreeableness and extraversion can predict who writes more helpful reviews for experience

products but not for search products. The agreeableness personality trait can help in both

product types. To validate the findings, the influence I find of the other review helpfulness

determinates (e.g., star rating and readability) are stronger for experience products than search

products, which is consistent with the literature. Zhu and Zhang (2010) and Park and Park

(2013) both state that online consumers face more uncertainty when they shop for experience

products than search products. To reduce the higher uncertainty level, experience product

consumers are more motivated to explore online reviews than search products consumers, who

pay less attention to online reviews (Hong et al., 2017; Park et al., 2012).

The findings of this study offer several implications for scholarship and practice.

Previous studies examined the possibility of extracting users' personalities from online content

such as blogs, tweets, and Yelp reviews. I follow their direction and investigate the possibility of

extracting online customers' personalities from their reviews. This study contributes to the

body of knowledge on the topic of review helpfulness by examining the effect of personality on

helpfulness in general and for each product type.

The literature shows the importance of considering the differences in product types

when studying online review helpfulness determinates. To fill this gap in the context of

reviewer personality as a review helpfulness determinant, I explore the effect of product type—

search versus experience products—on the relationship between personality and review

helpfulness. Among the five personalities, I identify the importance of perceived extraversion

and agreeableness on experience product reviews, adding to the literature on personality

perception. In addition to the new insights, I have confirmed previous findings regarding the

control variables' impact on experience vs. search product reviews, which adds to this study's robustness.

Practically, the findings tell platform designers that personality does matter in the review process. These platforms could enrich models that already consider other consumer factors by including their personalities. On the other hand, I advise review platforms to consider the findings when they design their review helpfulness assessment system. A platform designer who is aware of the differences in the effects of personality traits on helpfulness based on product type can now actually provide targeted incentives for consumers to provide reviews in one product type or the other, depending on which would be more helpful. According to the results, reviewers high in extraversion provide more helpful reviews for experience products; therefore, platform designers can now nudge consumers to ask them to provide reviews for the experience product they have purchased. Additionally, the theoretical connection between language, personality, and review helpfulness adds to the literature that shows the importance of how consumers verbalize their reviews. Review platforms can use this connection and introduce helpful tips on how their consumers can write better and more helpful reviews.

As with any study, this paper is subject to some limitations that present opportunities for future research. First, as in previous research (e.g., Liu et al., 2021), I collected the data from one large retailer that offers various product categories online. Although this method provides us with different product types, the results obtained from one review platform cannot represent the review helpfulness behavior of all platforms. Future research can collect data from internal and external review platforms that provide reviews of different product types to enhance the generalizability of the findings.

Second, products that fall within the categories of search and experience at the same time were not taken into consideration. Future research could include such product items to get fuller insights. Third, even though the dataset has more than 150 million reviews, I only used a random sample of 5692 consumers in this study due to the limit of the subscription with the Receptiviti personality service. An avenue for future work is to extend the data and include more consumers.

Fourth, most of the results are consistent with previous research findings in personality; which supports the validity of the analytical technique used. However, investigating the relationship between personality and review helpfulness in a controlled environment such as online or field experiments would increase the results' validity and generalizability and allow us to infer causality. Another possible direction for future research could be investigating the relationship between the personalities of the reviewers and the readers. Through the lens of similarity-attraction theory from the psychology literature which states that similar people are more likely to be attracted to each other than dissimilar people, I could test the possibility of a relationship between the personalities of the reviewer who wrote the review and the reader who will assess its helpfulness.

7. Conclusion

In this paper, I examine the relationship between consumers' personalities and the perceived helpfulness of their online reviews extracted from Amazon. More specifically, I explore the effect of product type—search versus experience products—on the relationship

between personality and review helpfulness. I conclude that a consumer's personality influences their reviews' perceived helpfulness. In particular, I conclude that reviewers who show high conscientiousness and agreeableness, and low openness and neuroticism have a tendency to provide more helpful reviews. I also conclude that the negative effects of high openness, extraversion, and neuroticism on review helpfulness are more pronounced for experience products than for search products.

Appendix

Appendix 1. Amazon helpfulness before mid 2018

★★★★★ **No more winning for you, Mr. Banana!** March 3, 2011
By SW3K

For decades I have been trying to come up with an ideal way to slice a banana. "Use a knife!" they say. Well...my parole officer won't allow me to be around knives. "Shoot it with a gun!" Background check...HELLO! I had to resort to carefully attempt to slice those bananas with my bare hands. 99.9% of the time, I would get so frustrated that I just ended up squishing the fruit in my hands and throwing it against the wall in anger. Then, after a fit of banana-induced rage, my parole officer introduced me to this kitchen marvel and my life was changed. No longer consumed by seething anger and animosity towards thick-skinned yellow fruit, I was able to concentrate on my love of theatre and am writing a musical play about two lovers from rival gangs that just try to make it in the world. I think I'll call it South Side Story.

Banana slicer...thanks to you, I see greatness on the horizon.

251 Comments   Was this review helpful to you? Yes   No

15,341 of 15,490 people found the following review helpful

★★★★★ **Saved my marriage** July 30, 2012
By Mrs Toledo

What can I say about the 571B Banana Slicer that hasn't already been said about the wheel, penicillin, or the iPhone.... this is one of the greatest inventions of all time. My husband and I would argue constantly over who had to cut the day's banana slices. It's one of those chores NO ONE wants to do! You know, the old "I spent the entire day rearing OUR children, maybe YOU can pitch in a little and cut these bananas?" and of course, "You think I have the energy to slave over your damn bananas? I worked a 12 hour shift just to come home to THIS?!" These are the things that can destroy an entire relationship. It got to the point where our children could sense the tension. The minute I heard our 6-year-old girl in her bedroom, re-enacting our daily banana fight with her Barbie dolls, I knew we had to make a change. That's when I found the 571B Banana Slicer. Our marriage has never been healthier, AND we've even incorporated it into our lovemaking. THANKS 571B BANANA SLICER!

49 Comments | Was this review helpful to you? Yes   No

References

Adamopoulos, P., Ghose, A., & Todri, V. (2018). The impact of user personality traits on word of mouth: Text-mining social media platforms. *Information Systems Research*, *29*(3), 612-640.

Ahmad, S. N., & Laroche, M. (2015). How do expressed emotions affect the helpfulness of a product review? Evidence from reviews using latent semantic analysis. *International Journal of Electronic Commerce*, 20(1), 76-111.

Arnoux, P. H., Xu, A., Boyette, N., Mahmud, J., Akkiraju, R., & Sinha, V. (2017, May). 25 tweets to know you: A new model to predict personality with social media. In *Eleventh International AAAI Conference on Web and Social Media*.

Back, M. D., Stopfer, J. M., Vazire, S., Gaddis, S., Schmukle, S. C., Egloff, B., & Gosling, S. D. (2010). Facebook profiles reflect actual personality, not self-idealization. *Psychological Science*, *21*(3), 372-374.

Baek, H., Ahn, J., & Choi, Y. (2012). Helpfulness of online consumer reviews: Readers' objectives and review cues. *International Journal of Electronic Commerce*, *17*(2), 99-126.

Bai, S., Zhu, T., & Cheng, L. (2012). Big-five personality prediction based on user behaviors at social network sites. *arXiv preprint arXiv:1204.4809*.

Bickart, B., & Schindler, R. M. (2001). Internet forums as influential sources of consumer information. *Journal of Interactive Marketing*, *15*(3), 31-40.

Bjering, E., Havro, L. J., & Moen, Ø. (2015). An empirical investigation of self-selection bias and factors influencing review helpfulness. *International Journal of Business and Management*, *10*(7), 16.

Cao, Q., Duan, W., & Gan, Q. (2011). Exploring determinants of voting for the "helpfulness" of online user reviews: A text mining approach. *Decision Support Systems*, *50*(2), 511-521.

Chen, P. Y., Dhanasobhon, S., & Smith, M. D. (2008). All reviews are not created equal: The disaggregate impact of reviews and reviewers at amazon. com. *Com (May 2008)*.

Chen, Y., Chai, Y., Liu, Y., & Xu, Y. (2015). Analysis of review helpfulness based on consumer perspective. *Tsinghua Science and Technology*, *20*(3), 293-305.

Cheung, C. M., Xiao, B. S., & Liu, I. L. (2014). Do actions speak louder than voices? The signaling role of social information cues in influencing consumer purchase decisions. *Decision support systems*, *65*, 50-58.

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.

Chua, A. Y., & Banerjee, S. (2014). Developing a theory of diagnosticity for online reviews. In *Proceedings of the international multiconference of engineers and computer scientists* (Vol. 1).

Chua, A. Y., & Banerjee, S. (2016). Helpfulness of user-generated reviews as a function of review sentiment, product type and information quality. *Computers in Human Behavior*, *54*, 547-554.

Craciun, G., Zhou, W., & Shan, Z. (2020). Discrete emotions effects on electronic word-of-mouth helpfulness: The moderating role of reviewer gender and contextual emotional tone. *Decision Support Systems*, 130, 113226.

Cui, G., Lui, H. K., & Guo, X. (2012). The effect of online consumer reviews on new product sales. *International Journal of Electronic Commerce*, *17*(1), 39-58.

Danescu-Niculescu-Mizil, C., Kossinets, G., Kleinberg, J., & Lee, L. (2009, April). How opinions are received by online communities: a case study on amazon. com helpfulness votes. In *Proceedings of the 18th international conference on World wide web* (pp. 141-150). ACM.

Dellarocas, C., Zhang, X., & Awad, N. F. (2007). Exploring the value of online product reviews in forecasting sales: The case of motion pictures. *Journal of Interactive Marketing*, *21*(4), 23-45.

DeYoung, C. G., Peterson, J. B., & Higgins, D. M. (2005). Sources of openness/intellect: Cognitive and neuropsychological correlates of the fifth factor of personality. *Journal of Personality*, *73*(4), 825-858.

Duan, W., Gu, B., & Whinston, A. B. (2008). Do online reviews matter?—An empirical investigation of panel data. *Decision Support Systems*, *45*(4), 1007-1016.

Fang, B., Ye, Q., Kucukusta, D., & Law, R. (2016). Analysis of the perceived value of online tourism reviews: Influence of readability and reviewer characteristics. Tourism Management, 52, 498-506.

Fast, L. A., & Funder, D. C. (2008). Personality as manifest in word use: correlations with self-report, acquaintance report, and behavior. *Journal of Personality and Social Psychology*, *94*(2), 334.

Floyd, K., Freling, R., Alhoqail, S., Cho, H. Y., & Freling, T. (2014). How online product reviews affect retail sales: A meta-analysis. *Journal of Retailing*, *90*(2), 217-232.

Forman, C., Ghose, A., & Wiesenfeld, B. (2008). Examining the relationship between reviews and sales: The role of reviewer identity disclosure in electronic markets. *Information Systems Research*, *19*(3), 291-313.

Funder, D. C. (1997). *The personality Puzzle*. WW Norton & Co.

Gill, A. J., Nowson, S., & Oberlander, J. (2009, May). What Are They Blogging About? Personality, Topic and Motivation in Blogs. In *ICWSM*.

Girard, T., & Dion, P. (2010). Validating the search, experience, and credence product classification framework. *Journal of Business Research*, *63*(9-10), 1079-1087.

Ghose, A., & Ipeirotis, P. G. (2007, August). Designing novel review ranking systems: predicting the usefulness and impact of reviews. In *Proceedings of the Ninth International Conference on Electronic Commerce* (pp. 303-310).

Ghose, A., & Ipeirotis, P. G. (2010). Estimating the helpfulness and economic impact of product reviews: mining text and reviewer characteristics. *IEEE Transactions on Knowledge and Data Engineering, 23*(10), 1498–1512.

Ghose, A., & Ipeirotis, P. G. (2011). Estimating the helpfulness and economic impact of product reviews: Mining text and reviewer characteristics. *IEEE Transactions on Knowledge and Data Engineering*, *23*(10), 1498-1512.

Godes, D., & Mayzlin, D. (2004). Using online conversations to study word-of-mouth communication. *Marketing Science*, *23*(4), 545-560.

Godes, D., and Silva, J. C. 2012. "Sequential and Temporal Dynamics of Online Opinion," *Marketing Science* (31:3), pp. 448-473.

Goldsmith, R. E. (2002). Explaining and predicting consumer intention to purchase over the internet: an exploratory study. *Journal of Marketing Theory and Practice*, *10*(2), 22-28.

Gosling, S. D., & Mason, W. (2015). Internet research in psychology. *Annual review of psychology*, *66*, 877-902.

Hanzaee, K. H., & Farzaneh, S. (2012). Exploring the Role of Personality Traits and Perceived Expertise as Antecedents of Relationship Marketing in Service Context. *Research Journal of Applied Sciences, Engineering and Technology*, *4*(19), 3723-3731.

Hauser, J. R., Urban, G. L., Liberali, G., & Braun, M. (2009). Website morphing. *Marketing Science*, *28*(2), 202-223.

Hirsh, J. B., Kang, S. K., & Bodenhausen, G. V. (2012). Personalized persuasion: Tailoring persuasive appeals to recipients' personality traits. *Psychological Science*, *23*(6), 578-581.

Hong, H., Xu, D., Wang, G. A., & Fan, W. (2017). Understanding the determinants of online review helpfulness: A meta-analytic investigation. *Decision Support Systems*, *102*, 1-11.

Hu, J., Zeng, H. J., Li, H., Niu, C., & Chen, Z. (2007, May). Demographic prediction based on user's browsing behavior. In *Proceedings of the 16th international conference on World Wide Web* (pp. 151-160). ACM.

Hu, N., Liu, L., & Zhang, J. J. (2008). Do online reviews affect product sales? The role of reviewer characteristics and temporal effects. *Information Technology and Management*, *9*(3), 201-214.

Hu, N., Pavlou, P. A., & Zhang, J. J. (2017). On self-selection biases in online product reviews. *MIS Quarterly.*, *41*(2), 449-471.

Huang, A. H., Chen, K., Yen, D. C., & Tran, T. P. (2015). A study of factors that contribute to online review helpfulness. *Computers in Human Behavior, 48*(C), 17–27.

Huang, P., Lurie, N. H., & Mitra, S. (2009). Searching for experience on the web: An empirical examination of consumer behavior for search and experience goods. *Journal of marketing*, *73*(2), 55-69.

Im, I., Jun, J., Oh, W., & Jeong, S. O. (2016). Deal-Seeking Versus Brand-Seeking. *MIS Quarterly*, *40*(1), 187-204.

Jabr, W., Liu, B., Yin, D., Zhang, H. "Online Word-of-Mouth," in MIS Quarterly Research Curations, Ashley Bush and Arun Rai, Eds., http://misq.org/research-curations, November 23, 2020.

Jabr, W., & Zheng, Z. (2014). Know yourself and know your enemy. *MIS Quarterly*, *38*(3), 635-A10.

Judge, George G., Rufus Carter Hill, William E. Griffiths, Helmut Lütkepohl, and Tsoung-Chao Lee (1988), *Introduction to the Theory and Practice of Econometrics*, 2nd ed., Hoboken, NJ: John Wiley & Sons

Kapoor, P. S., Balaji, M. S., Maity, M., & Jain, N. K. (2021). Why consumers exaggerate in online reviews? Moral disengagement and dark personality traits. *Journal of Retailing and Consumer Services*, *60*, 102496.

Karbasi, A., Jamshidi, B. & Hashemi, S. R., 2014. The influence of personality traits of customers on their loyalty A case study of private banks of Kermanshah. *International Research Journal of Applied and Basic Sciences Vol, 8 (2),* pp. 241-245.

Korfiatis, N., García-Bariocanal, E., & Sánchez-Alonso, S. (2012). Evaluating content quality and helpfulness of online product reviews: The interplay of review helpfulness vs. review content. *Electronic Commerce Research and Applications*, *11*(3), 205-217.

Kosinski, M., Stillwell, D., & Graepel, T. (2013). Private traits and attributes are predictable from digital records of human behavior. *Proceedings of the National Academy of Sciences*, 201218772.

Krishnamoorthy, S. (2015). Linguistic features for review helpfulness prediction. *Expert Systems with Applications*, *42*(7), 3751-3759.

Kuan, K. K., Hui, K. L., Prasarnphanich, P., & Lai, H. Y. (2015). What makes a review voted? An empirical investigation of review voting in online review systems. Journal of the Association for Information Systems, 16(1), 1.

Lal, R., & Sarvary, M. (1999). When and how is the Internet likely to decrease price competition?. *Marketing Science*, *18*(4), 485-503.

Lee, S., & Choeh, J. Y. (2016). The determinants of helpfulness of online reviews. *Behaviour & Information Technology*, *35*(10), 853-863.

Liu, A. X., Li, Y., & Xu, S. X. (2021). Assessing the unacquainted: Inferred reviewer personality and review helpfulness. *MIS Quarterly*, 45(3), 1113–1148.

Liu, Q. B., & Karahanna, E. (2017). The dark side of reviews: The swaying effects of online product reviews on attribute preference construction. *MIS Quarterly.*, *41*(2), 427-448.

Liu, Z., & Park, S. (2015). What makes a useful online review? Implication for travel product websites. *Tourism management*, *47*, 140-151.

Lu, S., Wu, J., & Tseng, S. L. A. (2018). How online reviews become helpful: A dynamic perspective. *Journal of Interactive Marketing*, *44*, 17-28.

Marcus, B., Machilek, F., & Schütz, A. (2006). Personality in cyberspace: personal Web sites as media for personality expressions and impressions. *Journal of Personality and Social Psychology*, 90(6), 1014.

McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality*, *60*(2), 175-215.

McCroskey, J. C., & Richmond, V. P. (1990). Willingness to communicate: A cognitive view. *Journal of Social Behavior and Personality*, *5*(2), 19.

McElroy, J. C., Hendrickson, A. R., Townsend, A. M., & DeMarie, S. M. (2007). Dispositional factors in internet use: personality versus cognitive style. *MIS quarterly*, 809-820.

Milas, G., & Mlačić, B. (2007). Brand personality and human personality: Findings from ratings of familiar Croatian brands. *Journal of Business Research*, *60*(6), 620-626.

Mitchellette, R. J. (2008). *Entrepreneurial Decision Making: a must-read for every aspiring entrepreneur*. Xlibris Corporation.

Mudambi, S., & Schuff, D. (2010). Research Note: What Makes a Helpful Online Review? A Study of Customer Reviews on Amazon.com. *MIS Quarterly, 34*(1), 185-200. doi:10.2307/20721420

Nelson, P. (1970). Information and consumer behavior. *Journal of Political Economy*, *78*(2), 311-329.

Pagani, M., Hofacker, C. F., & Goldsmith, R. E. (2011). The influence of personality on active and passive use of social networking sites. *Psychology & Marketing*, *28*(5), 441-456.

Pan, Y., & Zhang, J. Q. (2011). Born unequal: a study of the helpfulness of user-generated product reviews. *Journal of retailing*, *87*(4), 598-612.

Park, J., Gu, B., & Lee, H. (2012). The relationship between retailer-hosted and third-party hosted WOM sources and their influence on retailer sales. *Electronic Commerce Research and Applications*, *11*(3), 253-261.

Park, S., & Nicolau, J. L. (2015). Asymmetric effects of online consumer reviews. *Annals of Tourism Research*, *50*, 67-83.

Park, S. B., & Park, D. H. (2013). The effect of low-versus high-variance in product reviews on product evaluation. *Psychology & Marketing*, *30*(7), 543-554.

Pennebaker, J. W., & King, L. A. (1999). Linguistic styles: Language use as an individual difference. *Journal of Personality and Social Psychology*, *77*(6), 1296.

Pervin, L. A., Cervone, D., & John, O. P. (2004). *Personality: Theory and research* (9th ed.). Hoboken, NJ: John Wiley and Sons.

Purnawirawan, N., Eisend, M., De Pelsmacker, P., & Dens, N. (2015). A meta-analytic investigation of the role of valence in online reviews. *Journal of Interactive Marketing*, *31*, 17-27.

Quercia, D., Kosinski, M., Stillwell, D., & Crowcroft, J. (2011, October). Our twitter profiles, our selves: Predicting personality with twitter. In *2011 IEEE third international conference on privacy, security, risk and trust and 2011 IEEE third international conference on social computing* (pp. 180-185). IEEE.

Racherla, P., & Friske, W. (2012). Perceived 'usefulness' of online consumer reviews: An exploratory investigation across three services categories. *Electronic Commerce Research and Applications*, *11*(6), 548-559.

Ranjbarian, B., Forghani, M. H., & Ghafari, M. (2013). Personality traits and the use of word-of-mouth communication as a source of travel information among inbound tourists who visited Isfahan. *International Journal of Academic Research in Economics and Management Sciences*, *2*(3), 20.

Babić Rosario, A., Sotgiu, F., De Valck, K., & Bijmolt, T. H. (2016). The effect of electronic word of mouth on sales: A meta-analytic review of platform, product, and metric factors. *Journal of Marketing Research*, *53*(3), 297-318.

Salehan, M., & Kim, D. J. (2016). Predicting the performance of online consumer reviews: A sentiment mining approach to big data analytics. *Decision Support Systems*, *81*, 30-40.

Sapir, E. (1921). An introduction to the study of speech. *Language*, *1*.

Schwartz, H. A., Eichstaedt, J. C., Kern, M. L., Dziurzynski, L., Ramones, S. M., Agrawal, M., & Ungar, L. H. (2013). Personality, gender, and age in the language of social media: The open-vocabulary approach. *PloS One*, *8*(9), e73791.

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.

Shen, W., Hu, Y. J., & Ulmer, J. R. (2015). Competing for attention. *MIS Quarterly*, *39*(3), 683-696.

Siering, M., Muntermann, J., & Rajagopalan, B. (2018). Explaining and predicting online review helpfulness: The role of content and reviewer-related signals. Decision Support Systems, 108, 1-12.

Sumner, C., Byers, A., & Shearing, M. (2011). Determining personality traits & privacy concerns from facebook activity. Black Hat Briefings, 11, 197-221.

Taggar, S. (2002). Individual creativity and group ability to utilize individual creative resources: A multilevel model. *Academy of management Journal*, *45*(2), 315-330.

Thompson, E. R. (2008). Development and validation of an international English big-five mini-markers. *Personality and Individual Differences*, *45*(6), 542-548.

Vazire, S., & Gosling, S. D. (2004). e-Perceptions: Personality impressions based on personal websites. *Journal of Personality and Social Psychology*, *87*(1), 123.

Wang, C. C., & Yang, Y. J. (2007). Personality and intention to share knowledge: An empirical study of scientists in an R&D laboratory. *Social Behavior and Personality: an international journal*, *35*(10), 1427-1436.

Wang, Y., Wang, J., & Yao, T. (2019). What makes a helpful online review? A meta-analysis of review characteristics. *Electronic Commerce Research*, *19*(2), 257-284.

Weathers, D., Sharma, S., & Wood, S. L. (2007). Effects of online communication practices on consumer perceptions of performance uncertainty for search and experience goods. *Journal of retailing*, *83*(4), 393-401.

Weathers, D., Swain, S. D., & Grover, V. (2015). Can online product reviews be more helpful? Examining characteristics of information content by product type. *Decision Support Systems*, *79*, 12-23.

Webb, B., & Gountas, J. (2006). An Integrative Model of Brand Personality, Self–Concept and Consumer Personality Orientations. ANZMAC 2006-Advancing Theory, Maintaining Relevance, 4-6.

Willemsen, L. M., Neijens, P. C., Bronner, F., & De Ridder, J. A. (2011). "Highly recommended!" The content characteristics and perceived usefulness of online consumer reviews. *Journal of Computer-Mediated Communication*, *17*(1), 19-38.

Witt, L. A., Burke, L. A., Barrick, M. R., & Mount, M. K. (2002). The interactive effects of conscientiousness and agreeableness on job performance. *Journal of applied psychology*, *87*(1), 164.

Wu, J. (2017). Review popularity and review helpfulness: A model for user review effectiveness. *Decision Support Systems*, *97*, 92-103.

Wu, P. F. (2013). In search of negativity bias: An empirical study of perceived helpfulness of online reviews. *Psychology & Marketing*, *30*(11), 971-984.

Xia, L., & Bechwati, N. N. (2008). Word of mouse: the role of cognitive personalization in online consumer reviews. *Journal of interactive Advertising*, *9*(1), 3-13.

Xie, Z., Yu, Y., Zhang, J., & Chen, M. (2022). The searching artificial intelligence: Consumers show less aversion to algorithm-recommended search product. *Psychology & Marketing*, *39*(10), 1902-1919.

Yarkoni, T. (2010). Personality in 100,000 words: A large-scale analysis of personality and word use among bloggers. *Journal of research in personality*, *44*(3), 363-373.

Yin, D., Bond, S. D., & Zhang, H. (2014). Anxious or angry? Effects of discrete emotions on the perceived helpfulness of online reviews. *MIS quarterly*, *38*(2), 539-560.

Yin, D., Mitra, S., & Zhang, H. (2016). Research note—When do consumers value positive vs. negative reviews? An empirical investigation of confirmation bias in online word of mouth. Information Systems Research, 27(1), 131-144.

Zhang, J. Q., Craciun, G., & Shin, D. (2010). When does electronic word-of-mouth matter? A study of consumer product reviews. *Journal of Business Research*, *63*(12), 1336-1341.

Zhu, F., & Zhang, X. (2010). Impact of online consumer reviews on sales: The moderating role of product and consumer characteristics. *Journal of marketing*, *74*(2), 133-148.

Zhu, L., Yin, G., & He, W. (2014). Is this opinion leader's review useful? Peripheral cues for online review helpfulness. *Journal of Electronic Commerce Research*, *15*(4), 267.

Chapter II

Effects of Personality Similarity Between a Review Reader and Writer on Its Perceived Helpfulness

Abstract

Due to their rapid dissemination through the internet, online product reviews are considered a primary source of information for consumers. The main goal of this study is to examine the effect of personality similarity between writers and readers of online reviews on the review's perceived helpfulness. This study focuses on whether personality similarity between writers and readers of online reviews affects the way readers evaluate the helpfulness of the review. Based on the psychology and communication literature, the study proposes a positive relationship between writer and reader personality similarity and review helpfulness. Specifically, consumers are expected to perceive reviews written by similar users as more helpful than reviews written by dissimilar users. Furthermore, the study aims to understand the effects of product type (search vs. experience product) and the gender of the reader on the relationship between personality similarity and review helpfulness.

1. Introduction

As the world becomes more complex, consumers are faced with numerous product options, making the process of purchasing products or services both online and offline increasingly difficult. When deciding what to buy, consumers now consider not only the features, price, and images of the products and/or services they want to purchase but also reviews provided by other online shoppers (Salehan & Kim, 2016). Interestingly, research has shown that consumers pay more attention to information provided by other customers than that provided by the sellers (Bickart & Schindler, 2001). Additionally, previous studies have indicated that online reviews have a significant impact on product sales (Cui et al., 2012; Duan et al., 2008; Ghose & Ipeirotis, 2010). Therefore, it is essential to analyze and comprehend product reviews and their effects, as shown by the increasing number of research works in both marketing (Chevalier & Mayzlin, 2006; Dellarocas et al., 2007; Floyd et al., 2014; Godes & Mayzlin, 2004; Pan & Zhang, 2011; Purnawirawan et al., 2015; Rosario et al., 2016; Xie et al., 2022) and information systems (Forman et al., 2008; Hu et al., 2008; Hu et al., 2017; Jabr & Zheng, 2014; Kuan & Hui, 2015; Liu & Karahanna, 2017; Nie et al., 2022; Siering et al., 2018; Wang et al., 2022; Yin et al., 2014; Yin et al., 2021).

Online reviews play a vital role in helping customers make informed decisions when shopping online. Due to the rapid increase in the quantity of online reviews, it has become challenging for users to distinguish those that are useful, which has led to an increase in research aimed at automatically identifying helpful reviews. The majority of studies on the helpfulness of online reviews assume that it is independent of the characteristics of the reader

of the review. When previous studies have investigated this field to determine the factors influencing review helpfulness, they have mostly examined the review characteristics such as review valence, readability, and sentiment (Chua & Nanerjee, 2016; Mudambi & Schuff, 2010; Salehan et al., 2018); the reviewer characteristics such as their gender, ethnicity, or personality (Liu, 2021); or reader characteristics such as gender, race, and age (Chan et al., 2017). However, it is important to consider that the helpfulness of a review may also depend on a combined perspective that captures the congruence between reviewers and readers. This research takes a more holistic approach by considering a wider range of variables in understanding the determinants of review helpfulness. In this study, I propose that the perceived helpfulness of a review may vary based on the degree of personality similarity between the writer and the reader. By examining the impact of personality similarity, along with considering the effects of product type and reader gender, a more comprehensive understanding of the factors influencing review helpfulness can be gained.

Psychology and communication literature provide a strong foundation for this research. The literature shows that when two individuals share similar characteristics such as personality traits, it can lead to better communication and more predictable behaviors (Adamopoulos et al., 2018). The similarity-attraction theory suggests that individuals tend to show preference towards people who share similarities with them (Byrne, 1971). It is believed that people who are similar also share similar preferences and needs (Feldman & Spencer 1965; Festinger 1954). Previous studies on the impact of interpersonal similarity on personality reveal that individuals base their personal relationships with others on how similar they are across personality dimensions such as agreeableness, conscientiousness, extraversion, emotional stability, and

openness to experience (Botwin et al., 1997). The theory of interpersonal similarity suggests that social attraction increases with the increased similarities between two individuals (Byrne & Griffitt, 1969; Byrne et al., 1968; Singh & Ho, 2000). The similarity could be in their demographics, attitude, religion, communication style, political orientation, or in other aspects such as personalities. On the other hand, a greater number of differences between two individuals can lead to avoidance behavior and increase aversion between them (Singh & Ho, 2000; Tan & Singh, 1995). In a study of an offline setting, Lichtenthal and Tellefsen (2001) find that when a salesperson and a customer share internal characteristics, one of which is personality, it can increase the customer's trust and willingness to follow the salesperson's advice. This leads to the assumption that this similarity in personality could affect one of the ways individuals communicate nowadays, which is through online reviews.

Based on the theories mentioned above, I examine the effect of personality similarity between writers and readers of online reviews on their perceived helpfulness and also investigate whether this relationship is different based on the gender of the reader. Additionally, based on the findings of Essay I of the dissertation, I aim to investigate the role of product type—search versus experience—on the relationship between personality similarity and review helpfulness. This study attempts to answer the following questions:

Research Question 1: Does personality similarity between the reader and the writer of a product review affect its perceived helpfulness?

Research Question 2: Is there a difference in the effect of personality similarity between the review reader and writer on the review's perceived helpfulness if the review is for a search or experience product?

Research Question 3: Is there a difference in the effect of personality similarity between the review reader and the writer on the review's perceived helpfulness based on the reader's gender?

This study employed a quantitative research approach to examine the relationship between personality similarity and the perceived helpfulness of online reviews. An online experiment methodology was used to gather data from a diverse range of participants. The experiment encompassed various measures, including assessments of participants' personality traits, perceptions of review helpfulness, and relevant demographic information. Participants were instructed to evaluate the helpfulness of a series of online reviews, written for both search and experience products, while also providing details about their own personality traits. The collected data were subjected to statistical analysis to investigate the association between personality similarity and perceived review helpfulness. This methodological approach facilitated a comprehensive exploration of the research questions, enabling valuable insights into the impact of personality similarity on the perceived helpfulness of online reviews, while considering the influence of the factors of product type and reader gender.

This study will provide a significant advancement in the research area of user characteristics that influence the helpfulness of online reviews. It is the first study to examine

the impact of personality similarity between writers and readers of online reviews on their

perceived helpfulness. Additionally, this study takes a broader perspective on the factors that

enhance online review helpfulness by analyzing the pairwise characteristics of both the writer

and reader of online reviews, rather than just focusing on the review, reviewer, or reader

factors independently. I also shed light on the possible influence of product type and reader

gender in this relationship. Gaining insights into the influence of writer-reader similarities on

consumers can have significant implications for online websites. Retailers and online review

platforms stand to benefit from understanding the impact of incorporating personality

similarity between writers and readers in their business models. Based on the findings of this

study, presenting consumers with reviews written by individuals who exhibit personality

similarity can enhance the perceived helpfulness of the reviews. This in turn facilitates a more

positive shopping experience for consumers. Moreover, given that similar individuals often

share similar preferences, incorporating personality similarity in recommendation systems can

play a vital role in tailoring product suggestions to individual consumer interests and

preferences. In the vast landscape of online product options, enhancing consumers' exposure

to products aligned with their preferences can further assist their decision-making process

while simultaneously contributing to improved sales for businesses (Forman et al., 2008).

Additionally, this study addresses the call by Awad and Ragowsky (2008) to better understand

the interaction between gender and online reviews within the context of e-commerce, as the

findings shed light on the differential impact of personality similarity on review helpfulness for

male and female readers. This contributes to a more comprehensive understanding of the

gender dynamics in online review perception and highlights the importance of considering a

reader's gender as a factor in the design and implementation of online review systems.

The remainder of the study is organized as follows: the next section outlines the related

literature pertinent to this research and proposes a set of hypotheses. Following that, the

research methodology developed to test these hypotheses is described, then the results are

presented. The subsequent section discusses the findings and highlights the theoretical and

managerial implications derived from the results. Lastly, the study concludes with its limitations

and directions for future research.

2. Literature Review

Studying the effects of personality similarity on review helpfulness between online

review writers and readers draws upon a wide spectrum of literature areas. In this literature

review, I examine the related research on similarity and text, the effects of personality

similarity, and similarity and gender. First, I answer whether personality can be conveyed in

text. In the first essay of this dissertation, the general relationship between an individual's

personality and the way they communicate in their text has been established by exploring

previous literature that links language to personality (Back et al., 2010; Fast & Funder, 2008; Hu

et al., 2007; Kosinski et al., 2013; Marcus et al., 2006; Quercia et al., 2011; Sumner et al., 2011;

Vazire & Gosling, 2004). In a meta-analysis, Tskhay and Rule (2014) synthesized studies that

explored readers' agreement in inferring the Big Five personality traits based on the textual

content of social networking sites and other online platforms such as blogs. The meta-analysis

revealed that there is agreement among readers when assessing extraversion, openness,

agreeableness, and conscientiousness. On the other hand, the agreement was lower for judging

neuroticism. Collectively, these studies provide evidence that readers are capable of assessing a

writer's personality through text. Closer to the domain of this study, the findings in the first

essay highlight the significant possibility of predicting online review helpfulness based on writer

personality traits extracted from their review text. The goal of this essay is to ascertain whether

an increase in personality similarities between the writer and reader would lead to more

helpful reviews. The following sections highlight the related theory and empirical evidence that

support the claim.

Similarity and Text

This section aims to examine existing research on similarity and text and its impact on

text reader response within the framework of reader-response theory. By adopting a reader-

oriented perspective, we can gain valuable insights into the subjective and interpretive nature

of the reading process, and how personality similarity may contribute to the reader's evaluation

of online reviews. Reader-response theory focuses on how readers interpret a text. The theory

explores the interactive and dynamic nature of engaging with a text rather than focusing only

on the features of the text itself (Tyson, 2014). Fish (1970) proposed that a reaction to a text is

divided between a general and an individual response. The general response to a text is

influenced by shared linguistic rules, leading to a uniform interpretation among readers. On the

other hand, the individual response to a text is influenced by each reader's unique interests and separately by the interplay between their own characteristics and those of the writer. Furthermore, Iser (1974) argues that the relationship between a text and its reader depends on their convergence. As a result, different readers may have different responses to a text. In this study, I claim that a reader's response to an online review could be influenced by their personality similarity with the review writer.

Additionally, Auden (1989) states that positive outcomes occur when writers and readers have common interests. Common interests could be one of several personal characteristics that explain positive outcomes. However, in this study, it is argued that writer and reader personality similarity is also important in explaining positive outcomes. Similarity-attraction theory suggests that people tend to show preference towards others who are similar to them (Byrne, 1971). Therefore, this study examines whether a greater similarity between writer's and reader's personalities will lead to a more helpful review.

Effects of Personality Similarity

In recent years, there has been a growing focus on investigating the impact of personality similarity between two individuals across different domains. Luo and Klohnen (2005) examined the effect of personality similarity between couples and found that personality similarity was positively associated with satisfaction. Gaunt (2006) reached a similar conclusion, observing that increased levels of satisfaction and reduced negative affect within marital relationships were associated with increased personality similarity between partners. In

another context, Schaubroeck and Lam (2002) demonstrated that in highly individualistic work environments, individuals who displayed greater personality similarity with their peers were more likely to receive promotions. On the other hand, in highly collectivistic work settings, the similarity in personality between supervisors and subordinates appeared as a significant predictor of career advancement. In the context of personality similarity and negotiation, Wilson et al. (2016) found that negotiators who share a greater similarity in both agreeableness and extraversion traits tend to reach agreements faster, encounter less conflict in their relationships, and form more positive impressions of their negotiation partners. In a more closely related context of testing writer-reader personality similarity, Li and Chignell (2010) examined how personality similarity influenced blog writing and reading. Their findings indicate a significant preference among blog readers for blog writers with similar personalities. In addition, Belzak (2017) found that greater personality similarity between poem writers and their readers is positively correlated with increased levels of reader inspiration. Across all these different domains, there is a consensus suggesting that positive outcomes are associated with higher personality similarity between two people.

Prior research has shed light on the influence of personality similarity between individuals in various contexts. In the realm of online reviews, this study examines the relationship between the personality similarity of review writers and readers. The aim is to explore the effects of personality similarity on the perceived helpfulness of online reviews. Specifically, I test the following hypothesis:

H1: There is a positive association between the degree of personality similarity between the review writer and reader, and the level of perceived helpfulness attributed to the review.

Factors Affecting Personality Similarity and Review Helpfulness

According to Nelson (1970), products are often categorized as either search or experience products. Search products refer to those for which customers can gather information about their quality before making a purchase. On the other hand, experience products are defined as those that customers must buy or experience first in order to evaluate them. The primary difference between search and experience products lies in the level of uncertainty regarding the product's quality prior to purchase. While initial research on product types focused on offline shopping, Girard and Dion (2010) validated the classification of search and experience products in the context of online shopping. Their findings confirmed that in online settings as with offline settings, the risk associated with experience products is significantly higher than that associated with search products. Cell phones, printers, and digital cameras are examples of search products (Chen et al., 2015; Huang et al., 2015; Xia & Bechwati, 2008). On the other hand, video games, books, and skin care products are examples of experience products (Bjering et al., 2015; Chen et al., 2015; Cheung et al., 2014; Mudambi & Schuff, 2010). According to Huang et al. (2009) and Chua and Banerjee (2014), customers process information differently depending on whether the review is for a search or experience product. With experience products, review helpfulness is often evaluated subjectively,

regardless of the quality of the information provided. However, for search products, consumers tend to agree on the helpfulness of reviews, as they can make objective judgments based on the product information supplied by the seller.

The impact of product type on the relationship between online review helpfulness and its determinants, such as review star rating, word count, readability, and age, has been examined in a range of studies (Baek et al., 2012; Lee & Choeh, 2016; Mudambi & Schuff, 2010; Purnawirawan et al., 2015; Siering et al., 2018). Mudambi and Schuff (2010) determined that product type influenced the perceived helpfulness of reviews. They discovered that product type moderates the effects of review star rating and review length on review helpfulness. In the case of experience products, reviews with extreme ratings (either highly positive or highly negative) are less helpful compared to reviews with moderate ratings. Furthermore, review length has a more significant positive impact on helpfulness for search products than for experience products. Both Purnawirawan et al. (2015) and Hong et al. (2017) conducted meta-analyses on the influence of review characteristics on review helpfulness, utilizing product type as a moderator. Both studies concluded that review length and review rating have a greater positive influence on the helpfulness of a review for experience products than for search products. Additionally, Wang et al. (2019) found that product type significantly moderates the effects of review length and star rating, but they did not observe a significant moderation effect regarding review readability and age.

In the context of this dissertation, the findings of the first essay show that product type moderates the relationship between a writer's personality and the helpfulness of their reviews. More specifically, openness, conscientiousness, and agreeableness are the significant

personality dimensions that positively affect review helpfulness for search products. On the other hand, agreeableness positively predicts helpfulness, while extraversion and neuroticism negatively influence review helpfulness for experience products. Consequently, the type of the product being reviewed can influence how the determinants of review helpfulness, such as the personality similarity between the review writer and reader in this study, impact the perceived helpfulness of the review. Considering the various findings in the literature, this study aims to examine the possible differences in the relationship between writer and reader personality similarity and review helpfulness between the two product types. Therefore, I hypothesize:

> H2: There are differences in the relationship between the similarity of personality traits between the writer and reader and the perceived helpfulness of reviews for the two different product types.

The second factor that could influence the relationship between writer and reader personality similarity and review helpfulness is the gender of the reader. Research has shown that males and females often have different information processing patterns (Putrevu, 2001). The selectivity hypothesis provides a significant theory by which to explain the difference in responses of females and males during information processing (Richard, Chebat, Yang, & Putrevu, 2010). The theory describes women as comprehensive processors and men as selective processors (Meyers-Levy & Stemthal, 1991). Women, who are identified as comprehensive processors, tend to treat all information equally. In contrast, men, as selective processors, tend to process information selectively, focusing primarily on what they find most

interesting and important. These differences in information processing patterns between males and females, as described by the selectivity hypothesis, have the potential to influence the effect of personality similarity on review helpfulness.

In the context of online shopping, several studies have shown gender differences in online shopping behavior (Rodgers & Harris, 2003; Slyke et al., 2010). Garbarino and Strahilevitz (2004) investigate the differences between men and women concerning their perceptions of risks linked to online shopping. Their findings indicate that women tend to perceive a greater level of risk when it comes to online purchases compared to men. Also, according to Awad and Ragowsky (2008), the relationship between review quality and trust is more pronounced among men compared to women. Conversely, the relationship between trust and the intention to shop online is more pronounced among women than men. Additionally, Zhang et al. (2014) study the gender differences in the relationship between inconsistent reviews (the presence of both negative and positive reviews) and online shopping behavior. Their results indicate that the positive moderation effect of inconsistent reviews varies between men and women. Specifically, women consumers exhibit a higher level of responsiveness towards a combination of positive and negative reviews. Their finding aligns with the notion that women can be characterized as comprehensive processors, while men can be seen as selective processors (Meyers-Levy & Stemthal, 1991). Taken together, these findings indicate that gender plays a role in how consumers interact with online reviews.

On both theoretical and practical bases, it is important to understand how gender differences work together with additional factors that could influence review helpfulness, which in this study is the writer-reader personality similarity. Moreover, evidence from gender

differences in information processing and decision-making suggests the notion that the

expected positive effect of writer-reader personality similarity on review helpfulness could be

more pronounced for men than for women, regardless of the gender of the writer. In light of

the existing literature and evidence, I propose the following hypothesis:

> H3: The positive effect of writer-reader personality similarity on review
>
> helpfulness will be more pronounced when a reader is a man compared to when a
>
> reader is a woman.

By investigating this potential gender-based variation, we can gain insights into the

nuanced mechanisms underlying the influence of personality similarity on review evaluations

and contribute to a more comprehensive understanding of the factors shaping consumer

responses to online reviews. Table 1 summarizes the focus of prior studies on review

helpfulness and identifies the gap in the literature that this study aims to fill.

Table 1
Literature Review

Studies	Context	Rating	Length	Readability	Emotion	Verified Purchase	Reputation	Past review	Personality	Race, gender, age	Personality Similarity	Product Type
		Review Characteristics					Reviewer Characteristics			Writer-Reader		Product Characteristics
Baek et al. (2012)	Amazon	√	√		√		√	√				
Cao et al. (2011)	CNET	√	√	√	√							
Chua and Nanerjee (2016)	Amazon	√	√		√	√						
Forman et al. (2008)	Amazon	√					√					
Mudambi and Schuff (2010)	Amazon	√		√			√	√				√
Karimi and Wang (2017)	Google Play	√	√					√				
Kwok and Xie (2016)	TripAdvisor	√	√	√			√					
Salehan et al. (2018)	Amazon	√	√	√	√	√						√
Yang et al. (2017)	Yelp	√	√		√							
Zhang and Lin (2020)	Yahoo!	√	√		√		√	√				
Liu et al (2021)	Yelp	√	√	√	√		√	√	√			
Chan et al. (2017)		√								√		
Adamopoulos et al. (2018)	Twitter										√	
Current Study	Amazon	√	√	√	√	√	√	√	√		√	√

3. Research Methodology

This section outlines the methodology employed to investigate the impact of personality similarity between writers and readers of online reviews on the perceived helpfulness of such reviews. The study utilized an online experiment to collect data from a diverse pool of participants. This section presents the research model, design, participants, and the procedure followed during the experiment.

Model

The regression equation below is applied to test how the personality similarity between a review's writer and reader influences the dependent variable—review helpfulness—which responds to the first research question:

$$Helpfulness_{ij} = \beta_0 + \beta_1 \text{ writer-reader personality similarity} + \beta_{2-9} control$$

$$variables_j + e_{ij}$$

The analysis is on the writer-reader review level. Helpfulness indicates reader i's assessment of review j. The computation of the helpfulness measure is explained in the measurement section below.

Research Design

A within-subjects design was employed for this study. Participants were randomly assigned to either the "search product" condition or the "experience product" condition at first. Each participant was then exposed to reviews written for the assigned product type before being presented with reviews for the other product type. The independent variable is the level of personality similarity between the writer of the online review and the participant. The dependent variable is the perceived helpfulness of the online review. The paragraph entitled "Measures" provides a detailed explanation of the measures used to assess the participants'

answers. By employing this research design, the aim is to investigate whether personality

similarity influences the perceived helpfulness of online reviews.

The study used a sample of 123 reviews, extracted from Amazon's original reviews used

in Essay I of this dissertation. The sample included genuine reviews for both search and

experience products. Following Weathers et al. (2015), reviews written for six products with

different search qualities (DVD players, laptop computers, and digital camcorders) and

experience qualities (vacuum cleaners, outdoor grills, and skin care products) have been

extracted and used in the experiment to manipulate product type. Table 2 shows a general

description of the sample.

Table 2

Reviews Description

Product Type	# of reviews	readability	wordcount	helpfulness	extraversion	openness	conscientiousness	neurotic
Experience	66	6.20	114.74	0.70	0.50	0.51	0.50	(
Search	57	6.80	130.44	0.68	0.49	0.50	0.50	(
All	212170	6.86	121.51	0.75	0.54	0.51	0.52	(

To ensure the generalization of the reviews and eliminate any potential brand influence

on participants' assessments, minimal modifications were made, specifically the removal of

brand and company names. The 123 reviews selected for the experiment belonged to writers

who exhibited a diverse range of personalities. More specifically, the reviews were carefully

selected based on all possible 32 different personality conditions, ensuring a broad

representation of personalities. This approach allowed for the provision of reviews written by diverse personalities, thereby increasing the chances of participants reading and evaluating reviews written by reviewers with both similar and dissimilar personalities to their own.

The selected reviews had an average length and readability score, ensuring that they were comparable in terms of complexity and comprehensibility. By maintaining consistency in these factors, the aim was to minimize potential confounding effects and ensure that any observed differences in perceived helpfulness could be attributed to personality similarity rather than variations in review length or readability.

The order of the reviews within a product type was random. Participants were exposed to positive and negative reviews as this is the normal user experience in online review platforms. During their first task in the second section, subjects were randomly assigned to either search or experience products, and they were assigned to the remaining product type for their second task. All subjects read three reviews in each task, totaling six reviews, and answered questions related to the review's helpfulness after each review.

Participants

Participants were recruited from Prolific, an exceptionally effective online platform for connecting researchers with participants for academic studies. Researchers are encouraged to recruit their samples using Prolific over other alternatives as studies consistently report that participants recruited through Prolific exhibit significantly greater engagement, evidenced by their higher rates of passing attention checks, providing meaningful responses, and following

instructions. These findings highlight Prolific's unique ability to attract and retain motivated

individuals, making it a preferred choice for researchers seeking highly engaged participants

(Adams et al., 2020; Douglas et al., 2023; Eyal et al., 2021). Participants were prescreened

following three criteria: older than 18 years of age, located in the U.S., and possessing a

minimum approval rate of 98%. This approval rate shows how well the participant performed in

past studies.

A sample of 450 participants were recruited to take part in the study. The study was

distributed evenly to male and female participants. The study included a diverse sample of

participants across various age ranges. The largest group consisted of individuals aged 25–34,

with 144 participants. There were also 54 participants in the 18–24 age range, 106 participants

aged 35–44, 74 participants aged 45–54, 44 participants aged 55–64, and 28 participants aged

65 and above. This diverse age distribution among the participants contributes to a broader

understanding of the impact of personality similarity on the perceived helpfulness of online

reviews across different stages of life.

The study encompassed participants from multiple ethnic backgrounds. The majority,

comprising 73% of the participants, identified as White. Additionally, 12% of the participants

identified as Black, 6% as Asian, and 4% as Hispanic. The remaining participants identified with

other ethnic backgrounds. The vast majority of participants, 97%, reported English as their first

language. In regard to participants' education, 8% held a 2-year college degree, 40% had a 4-

year college degree, 18% held a graduate-level degree, 11% had a high school diploma (or GED),

21% had completed some college education but did not obtain a degree, and 2% had some high

school education but did not have a diploma.

When participants were asked about their online shopping behavior, 95.11% stated that they actively engage in online shopping and 96.66% claimed that they regularly read online reviews. Such statements show relevance and generalizability to the larger population of online shoppers. This enhances the external validity of the study findings and increases the potential applicability of the research results. Overall, having participants who actively shop online and read online reviews provides a valuable and relevant sample for the study, allowing us to gain insights into the relationship between personality similarity and the perceived helpfulness of online reviews in a context that closely aligns with real-world consumer behaviors. Table 3 presents demographic factors of participants.

Table 3

Demographic Factors of Participants

Variable	Level	Frequency	Percent
Age	18-24	54	12%
	25-34	144	32%
	35-44	106	24%
	45-54	74	16%
	55+	72	16%
Education level	High school	51	11%
	Associate degree or some college	93	21%
	College degree	215	48%
	Graduate degree	83	18%
Income level	Less than $19,999	49	11%
	$20,000-$59,999	150	33.3%
	$60,000-$99,999	106	23.6%
	$100,000-$139,000	62	13.8%
	$140,000-$179,000	46	10.2%
	$180,000 or more	24	5.3%

Procedure

The study was conducted using QuestionPro after participants signed up and were redirected from Prolific. QuestionPro is an online survey platform that is licensed and recommended by UTA (University of Texas at Arlington). In Prolific, interested and qualified participants received detailed information about the different sections of the experiment, instructions for accessing the experiment on QuestionPro, the compensation amount, and an estimated time to complete the study. Interested participants accepted the task and proceeded to access the experiment on QuestionPro by following the provided link. Upon clicking the link, a new page appeared with the informed consent information. Participants acknowledged their consent by accepting the terms of the experiment. The study sections included demographic questions, online review behavior, the reviews assessment, and a personality test.

The first section of the study focused on gathering demographic information from the participants. In the subsequent section, participants were presented with statements related to their Online Shopping Behavior. This section aimed to capture participants' feedback on various aspects of their online purchasing activities, including their engagement with writing and reading online reviews, as well as the impact of online reviews on their decision-making and purchasing confidence. To assess their responses, participants used a 6-point Likert-type scale, where a rating of 1 indicated "Strongly disagree" and a rating of 6 indicated "Strongly agree". Notably, participants were initially asked about their general shopping behavior before being exposed to the task of reading reviews. This approach was implemented to minimize potential question order bias stemming from the influence of reading the study's sample of reviews on participants' responses regarding their regular online shopping habits.

70

In the reviews assessment section, participants were asked to imagine that they wanted to buy a product online, such as a new laptop, and they were reading online reviews regarding that product. Subsequently, they were informed that in the next part of the study, they would read six reviews regarding different products. Following the reading of each review, participants were required to provide their feedback on statements regarding the perceived helpfulness of the respective review. The presentation order of the search product reviews and experience product reviews was randomized for each participant.

After reading and assessing reviews, participants were asked to complete the personality test. More specifically, they were instructed to indicate how accurately 50 phrases described them, using a 5-point Likert-type scale. Each item is a phrase describing a behavior (e.g., "I am the life of the party"). The test adopted the 50-item IPIP (International Personality Item Pool) representation of the Goldberg (1999) markers for the Big Five factor structure used in several studies to measure an individual's Big Five personality traits. Following completion of these tasks, the participants were thanked for their time and redirected back to Prolific. Participants received monetary compensation at a rate of 12 USD per hour.

Measures

Personality

Writers' personality traits were measured in Essay I of this dissertation using Receptiviti, a language analysis tool. The generated dataset from the first essay is similar to Table 4 below where the customer's review and his/her personality traits have been extracted based on his or her reviews. The Big Five personality profile represents the writer's percentile score in each one

of the personality traits. For example, writer A personality extraction returned an extraversion value of 0.6. This result shows that customer A scored in the 60th percentile; customer A is more open than 59 percent of the population and less open than 39 percent of the population.

To measure the review reader's personality, participants in the study were asked to complete the 50-item version of the IPIP. The International Personality Item Pool (IPIP) is a personality assessment tool based on the five-factor model, which is available to the public. It was created by a team of researchers led by Lewis R. Goldberg from the Oregon Research Institute. The main goal behind the creation of the IPIP was to facilitate the progress of personality research. As a result, items, scales, and scoring keys for the IPIP can be accessed online at no cost through http://ipip.ori.org/ipip/. The IPIP consists of brief verbal phrases (items) used to assess the Big Five personality traits. Previous studies have demonstrated that the IPIP exhibits internal consistency, reliability, and concurrent validity of its scores (Donnellan et al., 2006; Goldberg, 1999; Gow et al., 2005). Additionally, it has been positively evaluated as a valuable and valid online inventory for assessing personality traits (Johnson, 2005). Cronbach's alphas showed excellent to good reliability for the Big Five trait scales (Agreeableness: Cronbach's alpha=0.87, Consciousness: Cronbach's alpha=0.85, Extraversion: Cronbach's alpha=0.90, Neuroticism: Cronbach's alpha=0.91, Openness: Cronbach's alpha=0.79).

There are differences in how writer and reader personalities are measured. These two are measured differently but the writer personality measure, extracted from text, is actually based on the validation of the reader personality measure, extracting personality from instruments. Accordingly, I do not anticipate a problem in this regard. Additionally, writer

personality is reported in a percentile format while reader personality is a raw score. Ideally, I

would send readers' personality raw scores to Receptiviti and request them to retrieve readers'

percentiles compared to their corpus; however, such service is not provided by the platform. A

possible option is to normalize readers' personality scores using available data archives. A well-

known source is The Open-Source Psychometrics Project, which includes raw personality data

gathered online from various population samples. The dataset contains raw personality scores

collected from more than one million individuals worldwide. I normalized readers' personality

raw scores extracted from this study by comparing it to raw personality scores of U.S.

individuals only.

Table 4
Example of First Essay Dataset

Amazon Review Data		Big Five Personality Traits (Extracted from Review text)				
Customer ID	Review	EXT	OP	CO	NEU	AGR*
41953604	The DVD player I had before this was so loud it was terribly annoying. This product is quiet, has no bright lights (it's for the bedroom) and is very compact. It fits on top of my dresser which is nice. Nice cheap DVD player.	0.50313	0.494198	0.518479	0.516204	0.32842

*EXT = Extraversion, OP = Openness, CO = Conscientiousness, NEU = Neuroticism, AGR = Agreeableness

Writer-Reader Personality Similarity

The cosine similarity method is utilized to measure the personality similarity between a

review's writer and reader following Adamopoulos et al. (2018). Cosine similarity is a commonly

used method to measure similarity between two vectors and can be applied to the Big Five

personality scores. To use cosine similarity, each individual's Big Five personality score is represented as a vector in a five-dimensional space, where each dimension represents one of the five personality traits. Then, the cosine of the angle between the two vectors is calculated. A cosine similarity of 1 indicates perfect similarity between the two individuals' scores, while a cosine similarity of 0 indicates no similarity and a cosine similarity of -1 indicates perfect dissimilarity. Detail of the calculations can be found here: https://www.learndatasci.com/glossary/cosine-similarity/.

Helpfulness

Following Purnawirawan et al. (2012) in measuring perceived review helpfulness, participants in the study were asked to provide feedback on four statements related to the perceived helpfulness of each review they encountered. The statements were as follows: "I found the review useful," "It helped me shape my attitude toward the product," "It can be helpful in my decision regarding this product," and "The information in this review contributed to my knowledge of the product." The internal consistency of these statements was assessed using Cronbach's alpha, resulting in a value of 0.7628. To rate their agreement with each statement, participants utilized a 7-point Likert-type scale. A rating of 1 corresponded to "Strongly disagree," while a rating of 7 corresponded to "Strongly agree." To calculate the helpfulness score for each review, the average of the scores given by participants for the four statements was calculated. This average score represents the perceived helpfulness of the review.

4. Results

Table 5 shows the main regression analysis results that test for a relationship between writer-reader personality similarity and review helpfulness. The regression results indicate a positive and statistically significant association between personality similarity and the perceived helpfulness of online reviews. Specifically, as the similarity score between the writer and reader of the review increases, there is an observed increase in the perceived helpfulness of the review, holding all other variables constant. The coefficient of 1.573 quantifies the strength of this association. For each unit increase in personality similarity, the perceived helpfulness of the review is expected to increase by 1.573 points, on average. This suggests that when there is a higher degree of similarity in personality traits between the writer and reader, the review is more likely to be perceived as helpful by the reader.

Table 5
Personality Similarity

Helpfulness	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
personality similarity	1.573	.302	5.20	0.000	.98	2.166	***
star rating	-.064	.038	-1.70	.089	-.139	.01	*
star rating sq	.133	.018	7.45	0.000	.098	.168	***
wordcount	.002	0	3.82	0.000	.001	.002	***
readability	.047	.014	3.29	.001	.019	.075	***
review age	0.0001	0	4.10	0.000	0	0	***
verified purchased	.002	.052	0.05	.962	-.1	.105	
user rank	.001	0	3.44	.001	.001	.002	***
product rank	0.0001	0	2.05	.041	0	0	**

Constant	3.501	.283	12.39	0.000	2.947	4.056	***

To control for a homoscedasticity assumption in the regression I ran the model using robust standard errors. To detect multicollinearity, I checked the correlation matrix in Table 6, and all values are below the threshold of 0.8 (Judge et al., 1988, p. 868). In addition, a variance inflation factor (VIF) test was conducted, and the results are shown in Table 7. VIF values are less than 10, the tolerance values are greater than .1, and the average inflation factor is not substantially greater than 1. These results indicate that I do not have a multicollinearity problem in the analyses.

Table 6
Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) helpfulness	1.000								
(2) personality similarity	0.104	1.000							
(3) star_rating	-0.002	0.014	1.000						
(4) star rating sq	0.101	-0.024	0.298	1.000					
(5) wordcount	0.103	0.008	-0.027	-0.062	1.000				
(6) readability	0.078	0.000	-0.171	-0.096	0.221	1.000			
(7) review_age	0.093	0.005	0.035	0.199	0.048	0.122	1.000		
(8) verified purchase	-0.031	0.036	0.062	-0.126	0.044	-0.087	-0.140	1.000	
(9) user rank	0.069	-0.020	0.025	0.089	0.162	-0.088	-0.175	-0.206	1.000
(10) product rank	0.009	-0.016	0.003	-0.056	-0.075	-0.164	-0.145	0.148	0.113

Table 7
Variance Inflation Factor

	VIF	1/VIF
user rank	1.19	.84
star rating sq	1.187	.842
verified purchase	1.148	.871
readability	1.143	.875
review age	1.142	.875
star rating demeaned	1.133	.882
wordcount	1.12	.893
product rank	1.084	.923
personality similarity	1.003	.997
Mean VIF	1.128	.

In Table 8, a reviewer (writer) fixed effect is included in the model. The fixed effect captures the individual differences among reviewers that are constant across all reviews written by the same reviewer. This helps control for potential biases or unobserved factors associated with each reviewer when examining the relationship between writer-reader personality similarity and review helpfulness. The relationship between personality similarity and review helpfulness showed a slight change when the reviewer fixed effect was included in the regression model. The coefficient for personality similarity decreased from 1.57268 to 1.422567. However, it is worth noting that despite this change, the coefficient remains statistically significant, indicating that there is still a positive and meaningful association between personality similarity and review helpfulness. Therefore, while there was a slight alteration in the estimated effect size, the overall conclusion regarding the relationship between personality similarity and review helpfulness remains consistent.

Table 8
Reviewer Fixed Effect

Helpfulness	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
personality similarity	1.423	.267	5.33	0.000	.899	1.946	***
star rating	-.069	.062	-1.12	.262	-.191	.052	
star rating sq	.204	.073	2.80	.005	.061	.347	***

	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
wordcount	.003	.002	1.48	.14	-.001	.007	
readability	-.001	.051	-0.02	.986	-.102	.1	
review age	0	0	-2.13	.033	-.001	0	**
verified purchase	.064	.246	0.26	.794	-.418	.546	
user rank	-.009	.004	-2.47	.014	-.017	-.002	**
product rank	0	0	0.30	.766	0	.001	
Constant	4.499	.67	6.71	0	3.185	5.813	***

*** p<.01, ** p<.05, * p<.1

Table 9
Product Type x Personality Similarity Regression Result

Helpfulness	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
personality similarity	1.458	.449	3.25	.001	.578	2.339	***
product type	-.075	.534	-0.14	.889	-1.123	.973	
product type **x** personality similarity	.223	.606	0.37	.713	-.965	1.41	
star rating	-.068	.038	-1.77	.078	-.143	.007	*
star rating sq	.127	.018	6.93	0	.091	.163	***
wordcount	.002	0	3.92	0	.001	.002	***
readability	.051	.014	3.55	0	.023	.08	***
review age	0	0	4.42	0	0	0	***
verified purchase	.011	.052	0.22	.827	-.091	.114	
user rank	.001	0	3.37	.001	.001	.002	***
product rank	0	0	1.63	.104	0	0	
Constant	3.493	.407	8.59	0	2.695	4.29	***

*** p<.01, ** p<.05, * p<.1

Table 9 shows the regression model examining the interaction between product type and personality similarity on online review helpfulness. The 0.713 p-value for the interaction term (product type x personality similarity) indicates that the interaction term is not statistically significant, suggesting that there is no strong evidence of an interaction effect between product type and personality similarity on the perceived helpfulness of online reviews. The coefficient for personality similarity (1.458) is statistically significant with a p-value of 0.001, indicating that it has a significant impact on review helpfulness. This finding suggests that the level of personality similarity between reviewers and readers is a significant factor in determining the perceived helpfulness of online reviews, regardless of the specific product type being reviewed. In summary, the results indicate that personality similarity has a significant positive effect on

review helpfulness, whereas product type does not have a significant effect. Additionally, there

is no significant interaction effect between product type and personality similarity on review

helpfulness. Tables 10 and 11 below show the subgroup regressions for search and experience

product reviews.

Table 10
Search Subgroup Analysis Regression Result

Helpfulness	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
personality similarity	1.46	.451	3.24	.001	.576	2.344	***
star rating	.049	.091	0.54	.588	-.129	.228	
star rating sq	.326	.059	5.55	0	.211	.441	***
wordcount	.001	.001	1.30	.195	0	.002	
readability	.081	.019	4.29	0	.044	.118	***
review age	.0001	0	4.33	0	0	0	***
verified purchase	-.019	.084	-0.23	.818	-.184	.145	
user rank	.001	.001	2.10	.036	0	.003	**
product rank	.0001	0	1.08	.279	0	0	
Constant	3.333	.419	7.96	0	2.511	4.155	***

*** p<.01, ** p<.05, * p<.1

Table 11
Experience Subgroup Analysis Regression Result

Helpfulness	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
personality similarity	1.609	.405	3.97	0.00	.814	2.404	***
star rating	-.044	.051	-0.85	.397	-.144	.057	
star rating sq	.12	.023	5.23	0.00	.075	.166	***
wordcount	.003	.001	4.72	0.00	.001	.004	***
readability	.021	.023	0.92	.357	-.024	.066	
review age	.0005	0	0.14	.889	0	0	
verified purchase	.081	.068	1.18	.236	-.053	.215	
user rank	.001	0	1.94	.052	0	.002	*
product rank	.0003	0	0.62	.533	0	0	
Constant	3.628	.384	9.46	0.00	2.875	4.381	***

*** p<.01, ** p<.05, * p<.1

Table 12
Gender x Personality Similarity Regression Result

Helpfulness	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
personality similarity	1.847	.356	5.19	0	1.149	2.545	***
gender	1.161	.467	2.49	.013	.245	2.076	**
gender x personality similarity	-1.163	.537	-2.17	.03	-2.215	-.11	**
star rating	-.061	.062	-0.99	.322	-.182	.06	
star rating sq	.21	.073	2.89	.004	.068	.353	***
wordcount	.003	.002	1.41	.16	-.001	.007	
readability	-.006	.051	-0.12	.906	-.107	.095	
review age	0	0	-2.28	.023	-.001	0	**
verified purchase	.036	.245	0.15	.884	-.445	.516	
user rank	-.01	.004	-2.62	.009	-.017	-.003	***
product rank	0	0	0.17	.863	0	.001	
constant	4.179	.696	6.01	0	2.815	5.542	***

*** p<.01, ** p<.05, * p<.1

Table 12 shows the regression model examining the interaction between the reader's gender and personality similarity on online review helpfulness. The interaction term (gender x personality similarity) represents the effect of the interaction between gender and personality similarity on review helpfulness. The p-value of 0.03 indicates that the interaction term is statistically significant, providing evidence of an interaction effect between gender and personality similarity on the perceived helpfulness of online reviews. The coefficient of -1.163 for the interaction term (gender x personality similarity) suggests that the effect of personality similarity on review helpfulness differs depending on the gender of the reader. Specifically, when the personality similarity increases and the reader is a woman (gender = 1), the review helpfulness is expected to decrease by -1.163 points compared to when the personality similarity increases for men (gender = 0). When writer-reader personality similarity is the max, one, the differences between the two genders on how they perceive review helpfulness is almost zero. Additionally, helpfulness is higher for women readers, and that seems to become even higher with more writer-reader personality dissimilarity.

5. Discussion

The objective of this essay is to examine the effect of personality similarity between writers and readers of online reviews on the reviews' perceived helpfulness, and whether this relationship is different based on the product type or gender of the reader. The results demonstrate a significant and positive relationship between personality similarity and the perceived helpfulness of online reviews. As the level of similarity in personality traits between the writer and reader increases, there is a corresponding increase in the perceived helpfulness of the review. This finding suggests that readers are more likely to find reviews helpful when they perceive a greater alignment in personality with the writer. The results demonstrate a significant and positive relationship between personality similarity and the perceived helpfulness of online reviews, providing support for the first hypothesis. As the level of similarity in personality traits between the writer and reader increases, there is a corresponding increase in the perceived helpfulness of the review. The results align with prior research that has emphasized the importance of personal relevance and relatability in information processing and decision-making. When readers perceive a similarity in personality traits with the writer, they may perceive the review as more relevant and trustworthy, leading to a higher perceived level of helpfulness. In terms of the product type, the findings suggest that there is no strong evidence of an interaction effect between product type and personality similarity on the perceived helpfulness of online reviews. For both product types, personality similarity has a significant impact on review helpfulness. This result contrasts with the initial hypothesis that proposed differences in the impact of personality similarity on review helpfulness between the two product types. However, this finding highlights the importance of personality similarity

between reviewers and readers in determining the perceived helpfulness of online reviews, regardless of the specific product type being reviewed.

Moving on to the interaction between a reader's gender and personality similarity, the findings indicate that the effect of personality similarity on review helpfulness does differ depending on the gender of the reader. While personality similarity has a generally positive effect on review helpfulness, this effect is diminished for women compared to men. Therefore, for women readers, the increase in personality similarity may not have as strong an impact on perceived review helpfulness as it does for men readers. Specifically, as personality similarity increases and the reader is a man, the review helpfulness is expected to increase by an additional 1.163 points compared to when personality similarity increases for women. This finding suggests that the influence of personality similarity on review helpfulness is gender dependent. This result aligns with the gender differences observed by Putrevu (2001, 2004), where men tend to rely on their skills to efficiently navigate websites and extract specific information, while women enjoy engaging with the challenges and undertake comprehensive searches to gather all relevant information before making a decision. According to Richard et al. (2010), women tend to actively seek information while men tend to focus on piecemeal information. In comparison to women, men are more inclined to limit their information gathering to cues that are immediately relevant to their needs. As a result, men are more likely to end their exploratory behavior once they have obtained the information they were seeking. Conversely, women tend to exhibit a greater propensity for continued exploration in search of other related information. These points could explain the finding that for women readers, the increase in personality similarity may not have as strong of an impact on perceived review

helpfulness as it does for men readers. The comprehensive information processing style of women, characterized by their preference for reading all relevant information, may lead them to consider a wider range of reviews when evaluating a product. In contrast, men, who tend to extract specific information, may focus on and benefit more from reviews written by individuals who exhibit similar personality traits. Therefore, the specific information sought by men in this study aligns with the importance they place on personality similarity, resulting in a stronger impact on perceived review helpfulness. In summary, the findings demonstrate that personality similarity has a significant positive effect on the perceived helpfulness of online reviews, whereas product type does not exert a significant effect. Additionally, there is a significant interaction effect between a reader's gender and personality similarity on review helpfulness. These results underscore the importance of considering both personality similarity and reader gender when examining the impact of online reviews.

The findings of this study have important implications for both research and practice in the field of online reviews and consumer behavior. This study provides a significant advancement in the field of research into the user characteristics that influence the helpfulness of online reviews. It is the first study to examine the impact of personality similarity between writers and readers of online reviews on its perceived helpfulness. Additionally, this study takes a broader perspective on the factors that enhance online review helpfulness by analyzing the pairwise characteristics of both the writer and reader of online reviews, rather than just focusing on review, reviewer, or reader factors independently. The positive association between personality similarity and review helpfulness suggests that online platforms and recommendation systems could benefit from incorporating measures of personality traits to

enhance the relevance and usefulness of reviews. By matching readers with reviews from writers who exhibit higher levels of personality similarity, the perceived helpfulness of the reviews may be increased, leading to improved decision-making for consumers and reducing the effect of information overload (Besbes & Scarcini, 2018; Furner & Zinko, 2017; Singh et al., 2017). In addition, given the enormous number of online reviews available for customers, improving their exposure to more helpful reviews tailored to their personalities should assist customers in better decision-making and businesses in improving their sales (Forman et al., 2008). Furthermore, similar individuals tend to share similar preferences, which could play a significant role in websites' recommendation systems.

Awad and Ragowsky (2008) emphasized the importance of understanding the interaction between gender and online reviews within the context of e-commerce. In line with their emphasis, the findings indicate that the impact of personality similarity on review helpfulness varies between genders. Male consumers benefit more from providing reviews written by writers with similar personalities. This empirical evidence supports the notion that women tend to process information comprehensively, while men adopt a more selective processing approach (Meyers-Levy & Stemthal, 1991). The observed interaction effect between a reader's gender and personality similarity highlights the importance of considering gender differences in the design and implementation of online review systems. Practitioners should be aware that the impact of personality similarity on review helpfulness differs between male and female readers. Therefore, targeted strategies should be developed to cater to the specific information processing patterns and preferences of each gender group, especially since gender is a valuable market segmentation tool that is easily accessible and identifiable (Simon, 2000).

It is important to recognize the limitations inherent in this study. Firstly, the research focused on two particular types of product, namely search and experience products, which may not provide a comprehensive representation of the wide range of products available in the online marketplace. As such, generalizing the findings to other product categories should be done with caution. Secondly, the study relied on self-reported measures and subjective perceptions of review helpfulness. These measures are susceptible to biases and individual interpretations, which may introduce some degree of measurement error and affect the accuracy of the results. Furthermore, the study employed distal variables, specifically the personality similarity of the writers and readers, to predict review helpfulness. It is important to note that the writers and readers did not have direct interaction with each other, apart from their engagement through the writers' reviews. As a result, expecting large effects for variables such as personality traits, given their distal nature, may not be entirely appropriate.

In light of these limitations, future research should aim to encompass a wider range of product categories, employ more objective measures of review helpfulness, and consider additional variables that may mediate or moderate the relationship between personality similarity and review helpfulness. Investigating the underlying mechanisms that explain the observed gender differences in the impact of personality similarity on review helpfulness would provide valuable insights. This could involve exploring cognitive processes, information processing strategies, and the influence of social and cultural factors. Additionally, extending the analysis to incorporate other contextual factors, such as product involvement or purchase motivations, would provide a more comprehensive understanding of the dynamics between personality similarity and review helpfulness. Furthermore, exploring the role of other

individual characteristics, such as age or cultural background, may shed light on the complexity of consumer responses to online reviews. Also, further research could delve into the underlying mechanisms and psychological processes to gain a deeper understanding of why personality similarity has a consistently positive effect on review helpfulness across different product types. Exploring how individuals perceive and evaluate online reviews in relation to their own personality traits and product preferences could provide valuable insights into the nuanced dynamics at play in the context of online consumer behavior. Lastly, conducting longitudinal studies could help establish causal relationships and determine the temporal dynamics of the relationship between personality similarity and review helpfulness. Longitudinal research would enable the examination of how changes in personality similarities between various writers and readers affect review perceptions and purchase intentions. Overall, by addressing these limitations and pursuing these future research directions, a more comprehensive understanding of the dynamics between personality similarity, review helpfulness, and online consumer behavior can be achieved.

6. Conclusion

In conclusion, this research explored the relationship between writer-reader personality similarity and the perceived helpfulness of online reviews. The findings provide valuable insights into the influence of personality similarity on review helpfulness and shed light on the different effects based on reader gender. The results demonstrate a positive and statistically significant association between personality similarity and the perceived helpfulness of online reviews. A higher degree of similarity in personality traits between the writer and reader leads

to an increased perception of review helpfulness. This suggests that incorporating measures of

personality traits in online platforms and recommendation systems can enhance the relevance

and usefulness of reviews, ultimately aiding consumers in their decision-making processes.

Furthermore, the study revealed an interaction effect between reader gender and personality

similarity. Specifically, the positive effect of personality similarity was found to be significant for

male readers, while no significant effect was observed for female readers. These gender

differences emphasize the importance of considering the distinct information processing

patterns and preferences of male and female consumers when designing online review

systems. Regarding product type, the study did not find a significant interaction effect with

personality similarity on review helpfulness. This implies that the impact of personality

similarity on review helpfulness is consistent across different product types, suggesting the

generalizability of the findings.

Appendix

<u>Study Material:</u>

Consent Form

TITLE OF RESEARCH PROJECT: Examining the Relationship Between Personality and Online Review Helpfulness

RESEARCH TEAM

Amal Alshamrani, amalmosleh.alshamrani@mavs.uta.edu

Dr. Sridhar Nerur, snerur@uta.edu

Department of Information Systems and Operations Management

701 S. West Street, Room 535

Box 19437

Arlington, Texas 76019

Direct: 817-272-3502

IMPORTANT INFORMATION ABOUT THIS RESEARCH PROJECT

The research team above is conducting a research study about the possible relationship between individual's personality and how they evaluate online reviews. It is expected that the information gained in this study will benefit the scientific research community by enriching our understanding of what makes online reviews helpful. You can choose to participate in this research study if you are a resident of the United States and are 18 years of age or older.

In this study, you will provide your demographic information at the beginning. Then you will be asked to read six online reviews about random products and assess their helpfulness. You will read one review at a time and for each review you will be asked to evaluate its helpfulness. After completing the review assessments, you will be asked to complete a survey consisting of three parts: questions related to your online shopping behavior, personality, and decision-making style.

Your participation in this study will take approximately 20 minutes. The research team is committed to protecting your rights and privacy as a research subject. No personally identifiable

information will be collected, and your response will be collected anonymously. All data collected from this study will be kept confidential, only used for research purposes, and stored in a secure UTA server for at least three (3) years after the end of this research.

While absolute confidentiality cannot be guaranteed, the research team will make every effort to protect the confidentiality of your records as described here and to the extent permitted by law.

COMPENSATION

You will receive $4 for successfully participating in this research study. Your response will be reviewed within three days of submission and you will receive the payment through Prolific once approved. To ensure successful completion of the survey, please carefully enter your Prolific ID at the beginning of the survey and click on the link provided at the end of the survey to be redirected back to Prolific. Additionally, there are three attention checks included in the survey. If you fail to provide your Prolific ID or answer two of the three attention checks incorrectly, your participation will be rejected, and you will not receive compensation. There are no alternative options to this research project. The Internal Revenue Service (IRS) considers all payments made to research subjects to be taxable income; this may require additional information to be collected from you for tax purposes, such as your social security number.

CONTACT FOR QUESTIONS

Questions about this research study or reports regarding an injury or other problem may be directed to amalmosleh.alshamrani@mavs.uta.edu. Any questions you may have about your rights as a research subject or complaints about the research may be directed to the Office of Research Administration; Regulatory Services at 817-272-3723 or regulatoryservices@uta.edu. Thank you very much for your support.

Please check the box below to accept the terms and continue with the survey:

□ I Agree

Section 1 – Demographics

What is your age?

```
[                    ]
```

What is your birth year?

[ ]

What is your gender?

1. Female
2. Male
3. Prefer not to say

What is your marital status?

1. Not married
2. Married
3. Divorced
4. Separated
5. Widowed

How many children do you currently parent or serve as a guardian for in your household (aged 17 or younger only)?

1. None
2. 1
3. 2
4. 3
5. 4
6. More than 4

What is your race or ethnicity?

1. Asian
2. Black or African American
3. Hispanic or Latino
4. Middle Eastern or North African
5. Multiracial or Multiethnic
6. Native American or Alaska Native
7. Native Hawaiian or other Pacific Islander
8. White
9. Other
10. Prefer not to say

Is English your first language?

1. Yes
2. No

What is your annual household income? (before taxes)

1. Less than $19,999
2. $20,000 to $39,999
3. $40,000 to $59,999
4. $60,000 to $79,999
5. $80,000 to $99,999
6. $100,000 to $119,999
7. $120,000 to $139,999
8. $140,000 to $159,999
9. $160,000 to $179,999
10. $180,000 to $199,999
11. $200,000 or More
12. Prefer not to say

What is the highest level of school that you have completed?

1. Primary school
2. Some high school, but no diploma
3. High school diploma (or GED)
4. Some college, but no degree
5. 2-year college degree
6. 4-year college degree
7. Graduate-level degree
8. None of the above

Section 2 – Review Assessment

Imagine that you want to buy a product online, such as a new laptop, and you are reading online reviews regarding that product. In the next part of this study, you will be asked to read reviews

for different products. After reading each review, we will ask you a few questions to assess how helpful you found the review.

Review

Product: Laptop Computer

Review:
'I had this product for two years and in the first year the hard drive died and I had to send it in to be fixed. The second year the same thing happen and the operating system went out as well. It took the company 3 months to tell me if they were going to fix it. They never did and exchanged it for a better pc with a brand name that I heard off. I will stay away from brand X products because they don't last long and it is a waste of money.'

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
I found the review useful	❏	❏	❏	❏	❏	❏	❏
It helped me to shape my attitude toward the product	❏	❏	❏	❏	❏	❏	❏
It can be helpful in my decision regarding this product	❏	❏	❏	❏	❏	❏	❏
Information in this review contributed to my knowledge of the product	❏	❏	❏	❏	❏	❏	❏
Overall, I felt that this reviewer experience with the product was more positive than negative	❏	❏	❏	❏	❏	❏	❏

Section 3 – Online Shopping Behavior

The following statements are about your online shopping behavior. Please indicate the extent to which you agree with each statement:

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agre e	Strongly agree
I often buy products online	❏	❏	❏	❏	❏	❏
When I buy a product online, I often write a review about it	❏	❏	❏	❏	❏	❏
When I buy a product online, I always read reviews that are presented on the website	❏	❏	❏	❏	❏	❏
When I buy a product online, the reviews presented on the website are helpful for my decision-making	❏	❏	❏	❏	❏	❏
When I buy a product online, the reviews presented on the website make me confident in purchasing the product	❏	❏	❏	❏	❏	❏
If I don't read the reviews presented on the website when I buy a product online, I worry about my decision	❏	❏	❏	❏	❏	❏

Section 4 – Personality Assessment

Below are phrases describing people's behaviors. Please use the rating scale next to each phrase to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then click the circle that corresponds to the accuracy of the statement. Indicate for each statement whether it is 1. Very Inaccurate, 2. Moderately Inaccurate, 3. Neither Accurate Nor Inaccurate, 4. Moderately Accurate, or 5. Very Accurate as a description of you.

	Very Inaccurate	Moderately Inaccurate	Neither Accurate Nor Inaccurate	Moderately Accurate	Very Accurate
Am the life of the party.	❏	❏	❏	❏	❏
Feel little concern for others.	❏	❏	❏	❏	❏
Am always prepared.	❏	❏	❏	❏	❏
Get stressed out easily.	❏	❏	❏	❏	❏
Have a rich vocabulary.	❏	❏	❏	❏	❏
Don't talk a lot.	❏	❏	❏	❏	❏
Am interested in people.	❏	❏	❏	❏	❏
Leave my belongings around.	❏	❏	❏	❏	❏
Am relaxed most of the time.	❏	❏	❏	❏	❏
Have difficulty understanding abstract ideas.	❏	❏	❏	❏	❏

Please select very accurate for quality purposes.	❏	❏	❏	❏	❏
Feel comfortable around people.	❏	❏	❏	❏	❏
Insult people.	❏	❏	❏	❏	❏
Pay attention to details.	❏	❏	❏	❏	❏
Worry about things.	❏	❏	❏	❏	❏
Have a vivid imagination.	❏	❏	❏	❏	❏
Keep in the background.	❏	❏	❏	❏	❏
Sympathize with others' feelings.	❏	❏	❏	❏	❏
Make a mess of things.	❏	❏	❏	❏	❏
Seldom feel blue.	❏	❏	❏	❏	❏
Am not interested in abstract ideas.	❏	❏	❏	❏	❏
Start conversations.	❏	❏	❏	❏	❏
Am not interested in other people's problems.	❏	❏	❏	❏	❏
Get chores done right away.	❏	❏	❏	❏	❏
Am easily disturbed.	❏	❏	❏	❏	❏
Have excellent ideas.	❏	❏	❏	❏	❏
Have little to say.	❏	❏	❏	❏	❏
Have a soft heart.	❏	❏	❏	❏	❏
Often forget to put things back in their proper place.	❏	❏	❏	❏	❏
Get upset easily.	❏	❏	❏	❏	❏
Do not have a good imagination.	❏	❏	❏	❏	❏

Talk to a lot of different people at parties.	❏	❏	❏	❏	❏
Am not really interested in others.	❏	❏	❏	❏	❏
Like order.	❏	❏	❏	❏	❏
Change my mood a lot.	❏	❏	❏	❏	❏
Am quick to understand things.	❏	❏	❏	❏	❏
Don't like to draw attention to myself.	❏	❏	❏	❏	❏
Take time out for others.	❏	❏	❏	❏	❏
Shirk my duties.	❏	❏	❏	❏	❏
Have frequent mood swings.	❏	❏	❏	❏	❏
Use difficult words.	❏	❏	❏	❏	❏
Don't mind being the center of attention.	❏	❏	❏	❏	❏
Feel others' emotions.	❏	❏	❏	❏	❏
Follow a schedule.	❏	❏	❏	❏	❏
Get irritated easily.	❏	❏	❏	❏	❏
Spend time reflecting on things.	❏	❏	❏	❏	❏
Am quiet around strangers	❏	❏	❏	❏	❏
Make people feel at ease.	❏	❏	❏	❏	❏
Am exacting in my work.	❏	❏	❏	❏	❏
Often feel blue.	❏	❏	❏	❏	❏
Am full of ideas.	❏	❏	❏	❏	❏

References

Adamopoulos, P., Ghose, A., & Todri, V. (2018). The impact of user personality traits on word of mouth: Text-mining social media platforms. *Information Systems Research*, *29*(3), 612-640.

Adams, T. L., Li, Y., & Liu, H. (2020). A replication of beyond the turk: Alternative platforms for crowdsourcing behavioral research–sometimes preferable to student groups. *AIS Transactions on Replication Research*, *6*(1), 15.

Auden, W. H. (1989). *The dyer's hand and other essays*. New York: Vintage Books.

Awad, N. F., & Ragowsky, A. (2008). Establishing trust in electronic commerce through online word of mouth: An examination across genders. *Journal of management information systems*, *24*(4), 101-121.

Back, M. D., Stopfer, J. M., Vazire, S., Gaddis, S., Schmukle, S. C., Egloff, B., & Gosling, S. D. (2010). Facebook profiles reflect actual personality, not self-idealization. *Psychological Science*, *21*(3), 372-374.

Baek, H., Ahn, J., & Choi, Y. (2012). Helpfulness of online consumer reviews: Readers' objectives and review cues. *International Journal of Electronic Commerce*, *17*(2), 99-126.

Belzak, W. C. M. (2017). *Literary Theory within a Cross-Classified Multilevel Framework: Personality Similarity between Writers and Readers Predicts Reader Inspiration.* (Publication No. 1516639571) [Master dissertation, The College of William & Mary]. Dissertations, Theses, and Masters Projects.

Besbes, O., & Scarsini, M. (2018). On information distortions in online ratings. *Operations Research*, *66*(3), 597-610.

Bickart, B., & Schindler, R. M. (2001). Internet forums as influential sources of consumer information. *Journal of Interactive Marketing*, *15*(3), 31-40.

Bjering, E., Havro, L. J., & Moen, Ø. (2015). An empirical investigation of self-selection bias and factors influencing review helpfulness. *International Journal of Business and Management*, *10*(7), 16.

Botwin, M. D., Buss, D. M., & Shackelford, T. K. (1997). Personality and mate preferences: Five factors in mate selection and marital satisfaction. *Journal of Personality*, *65*(1), 107-136.

Byrne, D. E. (1971). *The attraction paradigm* (Vol. 462). Academic press.

Byrne, D., & Griffitt, W. (1969). Similarity and awareness of similarity of personality characteristics as determinants of attraction. *Journal of Experimental Research in Personality*.

Byrne, D., London, O., & Reeves, K. (1968). The effects of physical attractiveness, sex, and attitude similarity on interpersonal attraction. *Journal of Personality*.

Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, *39*(5), 752.

Chan, I. C. C., Lam, L. W., Chow, C. W., Fong, L. H. N., & Law, R. (2017). The effect of online reviews on hotel booking intention: The role of reader-reviewer similarity. *International Journal of Hospitality Management*, *66*, 54-65.

Chen, Y., Chai, Y., Liu, Y., & Xu, Y. (2015). Analysis of review helpfulness based on consumer perspective. *Tsinghua Science and Technology*, *20*(3), 293-305.

Cheung, C. M., Xiao, B. S., & Liu, I. L. (2014). Do actions speak louder than voices? The signaling role of social information cues in influencing consumer purchase decisions. *Decision support systems*, *65*, 50-58.

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.

Chua, A. Y., & Banerjee, S. (2014). Developing a theory of diagnosticity for online reviews. In *Proceedings of the international multiconference of engineers and computer scientists* (Vol. 1).

Chua, A. Y., & Banerjee, S. (2016). Helpfulness of user-generated reviews as a function of review sentiment, product type and information quality. *Computers in Human Behavior*, *54*, 547-554.

Cui, G., Lui, H. K., & Guo, X. (2012). The effect of online consumer reviews on new product sales. *International Journal of Electronic Commerce*, *17*(1), 39-58.

Dellarocas, C., Zhang, X., & Awad, N. F. (2007). Exploring the value of online product reviews in forecasting sales: The case of motion pictures. *Journal of Interactive Marketing*, *21*(4), 23-45.

Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: tiny-yet-effective measures of the Big Five factors of personality. *Psychological assessment*, *18*(2), 192.

Douglas, B. D., Ewell, P. J., & Brauer, M. (2023). Data quality in online human-subjects research: Comparisons between MTurk, Prolific, CloudResearch, Qualtrics, and SONA. *Plos one*, *18*(3), e0279720.

Duan, W., Gu, B., & Whinston, A. B. (2008). Do online reviews matter?—An empirical investigation of panel data. *Decision Support Systems*, *45*(4), 1007-1016.

Eyal, P., David, R., Andrew, G., Zak, E., & Ekaterina, D. (2021). Data quality of platforms and panels for online behavioral research. *Behavior Research Methods*, 1-20.

Fast, L. A., & Funder, D. C. (2008). Personality as manifest in word use: correlations with self-report, acquaintance report, and behavior. *Journal of Personality and Social Psychology*, *94*(2), 334.

Feldman SP, Spencer MC (1965) *The Effect of Personal Influence on the Selection of Consumer Services* (Center for Regional Studies, Lawrence, KS).

Festinger L (1954) A theory of social comparison processes. *Human Relations* 7(2):117–140.

Festinger, L. (1957). Social comparison theory. *Selective Exposure Theory*, *16*, 401.

Fish, S. (1970). Literature in the reader: Affective stylistics. *New literary history*, *2*(1), 123-162.

Floyd, K., Freling, R., Alhoqail, S., Cho, H. Y., & Freling, T. (2014). How online product reviews affect retail sales: A meta-analysis. *Journal of Retailing*, *90*(2), 217-232.

Forman, C., Ghose, A., & Wiesenfeld, B. (2008). Examining the relationship between reviews and sales: The role of reviewer identity disclosure in electronic markets. *Information Systems Research*, *19*(3), 291-313.

Furner, C. P., & Zinko, R. A. (2017). The influence of information overload on the development of trust and purchase intention based on online product reviews in a mobile vs. web environment: an empirical investigation. *Electronic Markets*, *27*, 211-224.

Garbarino, E., & Strahilevitz, M. (2004). Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation. *Journal of Business Research*, *57*(7), 768-775.

Gaunt, R. (2006). Couple similarity and marital satisfaction: Are similar spouses happier?. *Journal of personality*, *74*(5), 1401-1420.

Ghose, A., & Ipeirotis, P. G. (2010). Estimating the helpfulness and economic impact of product reviews: mining text and reviewer characteristics. *IEEE Transactions on Knowledge and Data Engineering,* *23*(10), 1498–1512.

Girard, T., & Dion, P. (2010). Validating the search, experience, and credence product classification framework. *Journal of Business Research*, *63*(9-10), 1079-1087.

Godes, D., & Mayzlin, D. (2004). Using online conversations to study word-of-mouth communication. *Marketing Science*, *23*(4), 545-560.

Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. *Personality psychology in Europe*, *7*(1), 7-28.

Gow, A. J., Whiteman, M. C., Pattie, A., & Deary, I. J. (2005). Goldberg's 'IPIP' Big-Five factor markers: Internal consistency and concurrent validation in Scotland. *Personality and Individual Differences*, *39*(2), 317-329.

Hong, H., Xu, D., Wang, G. A., & Fan, W. (2017). Understanding the determinants of online review helpfulness: A meta-analytic investigation. *Decision Support Systems*, *102*, 1-11.

Hu, J., Zeng, H. J., Li, H., Niu, C., & Chen, Z. (2007, May). Demographic prediction based on user's browsing behavior. In *Proceedings of the 16th international conference on World Wide Web* (pp. 151-160). ACM.

Hu, N., Liu, L., & Zhang, J. J. (2008). Do online reviews affect product sales? The role of reviewer characteristics and temporal effects. *Information Technology and Management*, *9*(3), 201-214.

Hu, N., Pavlou, P. A., & Zhang, J. J. (2017). On self-selection biases in online product reviews. *MIS Quarterly.*, *41*(2), 449-471.

Huang, A. H., Chen, K., Yen, D. C., & Tran, T. P. (2015). A study of factors that contribute to online review helpfulness. *Computers in Human Behavior, 48*(C), 17–27.

Huang, P., Lurie, N. H., & Mitra, S. (2009). Searching for experience on the web: An empirical examination of consumer behavior for search and experience goods. *Journal of marketing*, *73*(2), 55-69.

Iser, W. (1978). The implied reader: Patterns of communication in prose fiction from Bunyan to Beckett. Baltimore and London: The Johns Hopkins University Press.

Jabr, W., & Zheng, Z. (2014). Know yourself and know your enemy. *MIS Quarterly*, *38*(3), 635-A10.

Johnson, J. A. (2005). Ascertaining the validity of individual protocols from web-based personality inventories. *Journal of research in personality*, *39*(1), 103-129.

Kosinski, M., Stillwell, D., & Graepel, T. (2013). Private traits and attributes are predictable from digital records of human behavior. *Proceedings of the National Academy of Sciences*, 201218772.

Kuan, K. K., Hui, K. L., Prasarnphanich, P., & Lai, H. Y. (2015). What makes a review voted? An empirical investigation of review voting in online review systems. Journal of the Association for Information Systems, 16(1), 1.

Lichtenthal, J. D., & Tellefsen, T. (2001). Toward a theory of business buyer-seller similarity. *Journal of Personal Selling & Sales Management*, *21*(1), 1-14.

Lee, S., & Choeh, J. Y. (2016). The determinants of helpfulness of online reviews. *Behaviour & Information Technology*, *35*(10), 853-863.

Li, J., & Chignell, M. (2010). Birds of a feather: How personality influences blog writing and reading. *International Journal of Human-Computer Studies*, *68*(9), 589-602.

Liu, Q. B., & Karahanna, E. (2017). The dark side of reviews: The swaying effects of online product reviews on attribute preference construction. *MIS Quarterly.*, *41*(2), 427-448.

Luo, S., & Klohnen, E. C. (2005). Assortative mating and marital quality in newlyweds: A couple-centered approach. *Journal of Personality and Social Psychology, 88,* 304-326.

Marcus, B., Machilek, F., & Schütz, A. (2006). Personality in cyberspace: personal Web sites as media for personality expressions and impressions. *Journal of Personality and Social Psychology*, 90(6), 1014.

Menon, T., & Blount, S. (2003). The messenger bias: A relational model of knowledge valuation. *Research in Organizational Behavior*, *25*, 137-186.

Meyers-Levy, J., & Sternthal, B. (1991). Gender differences in the use of message cues and judgments. *Journal of marketing research*, *28*(1), 84-96.

Mudambi, S., & Schuff, D. (2010). Research Note: What Makes a Helpful Online Review? A Study of Customer Reviews on Amazon.com. *MIS Quarterly, 34*(1), 185-200. doi:10.2307/20721420

Nelson, P. (1970). Information and consumer behavior. *Journal of Political Economy*, *78*(2), 311-329.

Nie, C., Zheng, Z. E., & Sarkar, S. (2022). Competing With the Sharing Economy: Incumbents' Reaction on Review Manipulation. *MIS Quarterly*, *46*(3).

Pan, Y., & Zhang, J. Q. (2011). Born unequal: a study of the helpfulness of user-generated product reviews. *Journal of retailing*, *87*(4), 598-612.

Purnawirawan, N., Dens, N., & De Pelsmacker, P. (2012). Balance and sequence in online reviews: The wrap effect. *International Journal of Electronic Commerce*, *17*(2), 71-98.

Purnawirawan, N., Eisend, M., De Pelsmacker, P., & Dens, N. (2015). A meta-analytic investigation of the role of valence in online reviews. *Journal of Interactive Marketing*, *31*, 17-27.

Putrevu, S. (2001). Exploring the origins and information processing differences between men and women: Implications for advertisers. *Academy of marketing science review*, *10*(1), 1-14.

Quercia, D., Kosinski, M., Stillwell, D., & Crowcroft, J. (2011, October). Our twitter profiles, our selves: Predicting personality with twitter. In *2011 IEEE third international conference on privacy, security, risk and trust and 2011 IEEE third international conference on social computing* (pp. 180-185). IEEE.

Richard, M. O., Chebat, J. C., Yang, Z., & Putrevu, S. (2010). A proposed model of online consumer behavior: Assessing the role of gender. *Journal of Business research*, *63*(9-10), 926-934.

Rodgers, S., & Harris, M. A. (2003). Gender and e-commerce: An exploratory study. *Journal of advertising research*, *43*(3), 322-329.

Babić Rosario, A., Sotgiu, F., De Valck, K., & Bijmolt, T. H. (2016). The effect of electronic word of mouth on sales: A meta-analytic review of platform, product, and metric factors. *Journal of Marketing Research*, *53*(3), 297-318.

Salehan, M., & Kim, D. J. (2016). Predicting the performance of online consumer reviews: A sentiment mining approach to big data analytics. *Decision Support Systems*, *81*, 30-40.

Schaubroeck, J., & Lam, S. S. (2002). How similarity to peers and supervisor influences organizational advancement in different cultures. *Academy of Management Journal, 45*, 1120-1136.

Siering, M., Muntermann, J., & Rajagopalan, B. (2018). Explaining and predicting online review helpfulness: The role of content and reviewer-related signals. Decision Support Systems, 108, 1-12.

Simon, S. J. (2000). The impact of culture and gender on web sites: an empirical study. *ACM SIGMIS Database: The Database for Advances in Information Systems*, *32*(1), 18-37.

Singh, R., & Ho, S. Y. (2000). Attitudes and attraction: A new test of the attraction, repulsion and similarity-dissimilarity asymmetry hypotheses. *British Journal of Social Psychology*, *39*(2), 197-211.

Singh, J. P., Irani, S., Rana, N. P., Dwivedi, Y. K., Saumya, S., & Roy, P. K. (2017). Predicting the "helpfulness" of online consumer reviews. *Journal of Business Research*, *70*, 346-355.

Slyke, C. V., Bélanger, F., Johnson, R. D., & Hightower, R. (2010). Gender-based differences in consumer e-commerce adoption. *Communications of the Association for Information Systems*, *26*(1), 2.

Sparks, B.A., Browning, V., 2011. The impact of online reviews on hotel booking intentions and perception of trust. *Tourism management*. 32 (6), 1310–1323.

Sumner, C., Byers, A., & Shearing, M. (2011). Determining personality traits & privacy concerns from facebook activity. Black Hat Briefings, 11, 197-221.

Tskhay, K. O., & Rule, N. O. (2014). Perceptions of personality in text-based media and OSN: A meta-analysis. *Journal of Research in Personality*, *49*, 25-30.

Tyson, L. (2014). *Critical Theory Today: A User-friendly Guide*.

Vazire, S., & Gosling, S. D. (2004). e-Perceptions: Personality impressions based on personal websites. *Journal of Personality and Social Psychology*, *87*(1), 123.

Wang, H., Du, R., Shen, W., Qiu, L., & Fan, W. (2022). Product Reviews: A Benefit, a Burden, or a Trifle? How Seller Reputation Affects the Role of Product Reviews. *MIS Quarterly*, *46*(2), 1243–1272.

Wang, Y., Wang, J., & Yao, T. (2019). What makes a helpful online review? A meta-analysis of review characteristics. *Electronic Commerce Research*, *19*(2), 257-284.

Weathers, D., Swain, S. D., & Grover, V. (2015). Can online product reviews be more helpful? Examining characteristics of information content by product type. *Decision Support Systems*, *79*, 12-23.

Wilson, K. S., DeRue, D. S., Matta, F. K., Howe, M., & Conlon, D. E. (2016). Personality similarity in negotiations: Testing the dyadic effects of similarity in interpersonal traits and the use of emotional displays on negotiation outcomes. *Journal of Applied Psychology, 101*, 1405-1421.

Xia, L., & Bechwati, N. N. (2008). Word of mouse: the role of cognitive personalization in online consumer reviews. *Journal of interactive Advertising*, *9*(1), 3-13.

Xia Liu, A., Li, Y., & Xu, S. X. (2021). Assessing the Unacquainted: Inferred Reviewer Personality and Review Helpfulness. *MIS Quarterly*, *45*(3).

Xie, Z., Yu, Y., Zhang, J., & Chen, M. (2022). The searching artificial intelligence: Consumers show less aversion to algorithm-recommended search product. *Psychology & Marketing*, *39*(10), 1902-1919.

Yeong Tan, D. T., & Singh, R. (1995). Attitudes and attraction: A developmental study of the similarity-attraction and dissimilarity-repulsion hypotheses. *Personality and Social Psychology Bulletin*, *21*(9), 975-986.

Yin, D., Bond, S. D., & Zhang, H. (2014). Anxious or angry? Effects of discrete emotions on the perceived helpfulness of online reviews. *MIS quarterly*, *38*(2), 539-560.

Yin, D., Bond, S., & Zhang, H. (2021). Anger in Consumer Reviews: Unhelpful but Persuasive? *MIS Quarterly*, *45*(3), 1059–1086. https://doi.org/10.25300/misq/2021/15363

Zhang, K. Z., Cheung, C. M., & Lee, M. K. (2014). Examining the moderating effect of inconsistent reviews and its gender differences on consumers' online shopping decision. *International Journal of Information Management*, *34*(2), 89-98.