

Congruence Effects in Online Customer Reviews: The Mediating Role of Perceived
Information Relevance

A Thesis

SUBMITTED TO THE FACULTY OF THE
UNIVERSITY OF MINNESOTA

BY

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF SCIENCE

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May 2020

Acknowledgements

I would like to express my deep appreciation to my advisor Dr. Hye-Young Kim, for her endless support and trust in me throughout the journey. I also would like to appreciate my committee members, Dr. Hyunjoo Im and Dr. Jie Ding, giving me their valuable advice for my thesis. I could grow as a researcher with the help of my advisor and committee members. They provided me courage whenever I needed their assistance. Lastly, I want to thank my family for their unconditional love and support.

Abstract

Research addressing the message appeals of online customer reviews has arisen to deepen our understanding of consumer decision-making in online retail environments. Prior research suggests that there are two types of message appeals: emotional and rational (Huang et al., 2013; Kotler & Keller, 2008; Liu et al., 2018; Wu & Wang, 2011). The former can elicit consumers' emotions to induce purchase willingness, whereas the latter appeals to their cognition and reasoning highlighting product functions and practical benefits. Retailing research (e.g., Kang & Park-Poaps, 2010) to date has widely explored consumers' shopping orientations, which are largely originated from hedonic and utilitarian conceptions. However, the congruence effect between a message appeal of online customer reviews and shopping orientation has not been sufficiently established. To address this research gap, the purposes of this study were (a) to investigate how a congruence between a message appeal of online reviews and shopping orientation affects perceived relevance of information presented in an online customer review and, in turn, leads to consumers' purchase intention and (b) to examine the role of cumulative customer satisfaction and overall perceived risk in directly affecting purchase intention as well as in moderating the relationship between perceived relevance and purchase intention.

A 2 (message appeal of online customer reviews: emotional vs. rational) \times 2 (shopping orientation: hedonic vs. utilitarian) between-subjects experiment was conducted with 227 U.S. participants through Amazon Mechanical Turk. The results confirmed the congruence effect between a message appeal of online customer reviews and shopping orientation, ultimately leading to purchase intention. The participants who

had a hedonic (vs. utilitarian) shopping orientation perceived a higher congruence when they viewed an emotional (vs. rational) review than a rational (vs. emotional) one. The relationship between perceived congruence and purchase intention was partially mediated by perceived information relevance. Contrary to the hypothesis, the participants were more willing to purchase a product that has a relevant review when they had been less (vs. more) satisfied with an e-tailer over time. However, both direct and indirect effects of perceived risk were found to be insignificant.

The results of this study contribute to the literature on electronic word-of-mouth (eWOM) by providing empirical evidence of congruence effects in online customer reviews. In addition, this study extends the findings of prior research by confirming the role of perceived information relevance. This study offers actionable guidelines to practitioners in ways to increase perceived information relevance.

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Chapter 1. Introduction

This chapter provides a general background on the research topic: congruence between shopping orientation and message appeal of online customer reviews. The problem statement is addressed, followed by the purpose and the significance of the study. Definitions of terms are provided at the end.

1.1 Background

Congruence effects have been investigated in various research areas including sponsorship, branding, advertising, celebrity endorsement, and online customer reviews. The definition of congruence is “the fact of entities going well together” (Maille & Fleck, 2011, p. 79). Congruence represents a match-up effect, although many names such as *fit*, *typicality*, and *match* have been used interchangeably with congruence (Choi & Rifon, 2012; Fleck & Quester, 2007; Heckler & Childers, 1992). Interestingly, Maille and Fleck (2011) delineated the process of formation mechanisms of congruence evaluation in marketing. According to their theoretical perspective, individuals first consider the combination between given two entities. In retailing and marketing contexts, those entities could include brand, product, retailer, store, ad, media, web site, or event. Also, the entities often belong to the specific facet of a consumer, such as schema, need, mood, wish, emotion, or self-concept. Then, the consumer compares perceived similarities between the two entities to his or her expected combination, finally evaluating the congruence pertaining to perceived relevancy and expectancy (Maille & Fleck, 2011).

In the context of product marketing, Fleck and Quester (2007) strengthened the consensus view of a positive congruence effect; congruence facilitates the introduction of

new products to a market by assisting consumers' processing of the marketing message. Congruence effects are effective in explaining the formation of consumers' attitudes toward a product and/or service provider and behavioral intention. For example, in the celebrity endorsement literature, Kamins and Gupta (1994) demonstrated that: (a) consumers exhibit a high level of perceived believability and attractiveness of the spokesperson if they perceive a high level of congruence between the spokesperson and the product; and (b) the heightened perception of believability and attractiveness increases a favorable attitude toward the product. Similarly, in the literature on sponsorship marketing, Rodgers (2003) examined how perceived sponsor relevance to an event affects desirable marketing outcomes, confirming that relevant sponsors are more persuasive than irrelevant sponsors for consumers' memory, attitudes, and behavioral intentions.

Not surprisingly, more and more consumers are communicating with each other to share market information and their opinions about a particular product/brand/service. In the past, only a limited number of consumers could exchange market information on a large scale, but nowadays, the application of the internet has enabled consumers to connect with others even on the other side of the world. Furthermore, with increasing importance and prevalence of online shopping, electronic word-of-mouth (eWOM) has been an important source of information when consumers are planning to purchase products and/or services (Chu et al., 2019; Hennig-Thurau et al., 2004; You et al., 2015). The main way for online shoppers to share product information is to use online customer reviews (Duan et al., 2008; Gruen et al., 2006; Ismagilova et al., 2020). The term, "online customer reviews," refers to peer-generated evaluations of products and services posted

on a company's or third-party websites (Mudambi & Schuff, 2010). According to a survey conducted by Podium (2017), 93% of American survey participants stated that online reviews impact their purchasing decisions. Similarly, a survey conducted by Murphy (2018) indicated that 91% of American young-adult consumers trust online reviews as much as personal recommendations. Consumers exchange and share thoughts and information through online customer reviews, and consequently, form attitudes toward and beliefs of reviewed products, services, and brands (Fang et al., 2016; Kaushik et al., 2018; Sparks et al., 2016). In this light, the importance of understanding the persuasive role of online customer reviews cannot be overestimated.

In recent years, researchers have investigated the persuasive role of online customer reviews in consumer decision-making (e.g., Cui et al., 2012; Sparks et al., 2013; Reich & Maglio, 2020). Drawn from the advertising literature that introduced the concept of message appeals, an investigation of message appeals of online customer reviews has arisen to deepen our understanding of the persuasive role of online reviews. Previous studies have argued that online customer reviews can be classified into two categories based on their message appeals (e.g., Huang et al., 2013; Kotler & Keller, 2008; Liu et al., 2018; Park & Lee, 2008; Wu & Wang, 2011; Xia & Bechwati, 2008). Most of the categorizations of online customer reviews are similar in that the message types are deemed either informational or transformational, which is a broad categorization of advertising messages. Among the various categorizations of the online reviews, the current study adopted the emotional versus rational categorization that was suggested by a number of researchers (e.g., Albers-Miller & Stafford, 1999; Copeland, 1924; Kotler & Keller, 2008), because it is evaluated as being the most robust and comprehensive

conceptualization for online customer reviews (Motyka et al., 2018; Wu & Wang, 2011). Emotional reviews contain a message appeal that can provoke consumers' positive or negative emotions to arouse willingness to purchase. For example, several studies noticed that emotional reviews use emoticons and bold capital letters (e.g., Davidson et al., 2009; Kim & Gupta, 2011). In contrast, rational reviews exhibit a message appeal that highlights product attributes and function, often describing product features and usefulness (Kim & Gupta, 2012; Wu & Wang, 2011). Then, several questions arise: do consumers perceive emotional and rational message appeal of online reviews equally in processing product information? If not, what factors account for the difference in consumer perceptions between emotional and rational reviews?

Consumer researchers have investigated the role of shopping orientation for over three decades (e.g., Batra & Ahtola, 1991; Chang & Cheng, 2015; Kang & Park-Poaps, 2010). Consumers engage in shopping behavior for various reasons. Such reasons include to satisfy emotional wants and needs and to complete shopping tasks as work efficiently. Shopping motivations are frequently attributed to hedonic and utilitarian shopping values (Chang & Cheng, 2015; Overby & Lee, 2006; Scarpi, 2012), which was originally suggested by Babin et al. (1994). That is, the two shopping orientations frequently discussed in the literature are hedonic and utilitarian (Babin et al., 1994; Wolfenbarger & Gilly, 2001). If consumers expect the potential entertainment value and enjoyment from shopping experience, it is theorized that the consumers hold hedonic shopping value (Babin et al., 1994; Hirschman & Holbrook, 1982). Hedonic value is related to festive, ludic, and epicurean orientation (Chang & Cheng, 2015; Sherry Jr, 1990). Consumers have a hedonic shopping orientation when they mainly focus on an affectively rewarded

outcome of consumption. On the other hand, it is proposed that consumers hold utilitarian shopping value if they focus on product attributes and the achievement of product acquisition tasks in a deliberate and efficient manner (Babin et al., 1994; Chang & Cheng, 2015). Consumers with utilitarian orientations prioritize a functional outcome related to the conscious pursuit of an intended consequence and efficient purchasing to achieve task-related goals (Batra & Ahtola, 1991). Because most consumers shop online and electronic commerce has become more and more influential, both consumers with utilitarian shopping orientation and consumers with hedonic shopping orientation engage in information search, browsing, and actual purchase online (Childers et al., 2001; Scarpi, 2012; Shang et al., 2005; To et al., 2007; Wang et al., 2011).

1.2 Problem Statement

Does the effectiveness of each review type vary depending on shopping orientation? Drawing on the literature on congruence and the notions of message appeals of online customer reviews and shopping orientation, it is plausible to posit the congruence effect of the two variables. However, although it is necessary to understand the effect of online customer reviews on consumers' perceptions and behavioral intentions, the congruence effect between a message appeal of online customer reviews and shopping orientation has not been sufficiently established. As a result, few clear conceptual models have been developed to combine these two variables (message appeal of online customer reviews and shopping orientation) and thus understand their congruence effects.

To address this research gap, this study hypothesized that there will be a variation in perceived congruence between shopping orientation and a message appeal of online customer reviews. More specifically, when shopping orientation is hedonic (vs. utilitarian), exposure to emotional (vs. rational) online customer reviews will lead to a high level of perceived congruence, whereas exposure to rational (vs. emotional) online customer reviews will lead to a low level of perceived congruence.

The key variable of this study, “perceived information relevance” was proposed to explain the positive effect of congruence on purchase intention. Perceived information relevance refers to consumers’ perceptions of what data are applicable and helpful for a task depending on each consumer’s needs in a specific situation (Cheung & Thadani, 2012). Especially, for online customer reviews, a consumer perceives reviews as relevant if they provide the kind of information the consumer is searching for (Filieri & McLeay, 2014). In this light, a high level of perceived relevance of information can be predicted by the congruence between shopping orientation and a message appeal of online customer reviews. It is known that perceived relevance of information is positively related to adoption of information from online reviews (Filieri & McLeay, 2014) and purchase intention in the e-commerce context (Srivastava & Kalro, 2019). Thus, it is deemed reasonable to posit that perceived relevance of information will enhance purchase intention of a reviewed product.

To provide a better understanding of how consumers form willingness to purchase a product in the online shopping environment, this study also examined the role of cumulative customer satisfaction and overall perceived risk in directly affecting purchase

intention as well as in moderating the relationship between perceived relevance and purchase intention.

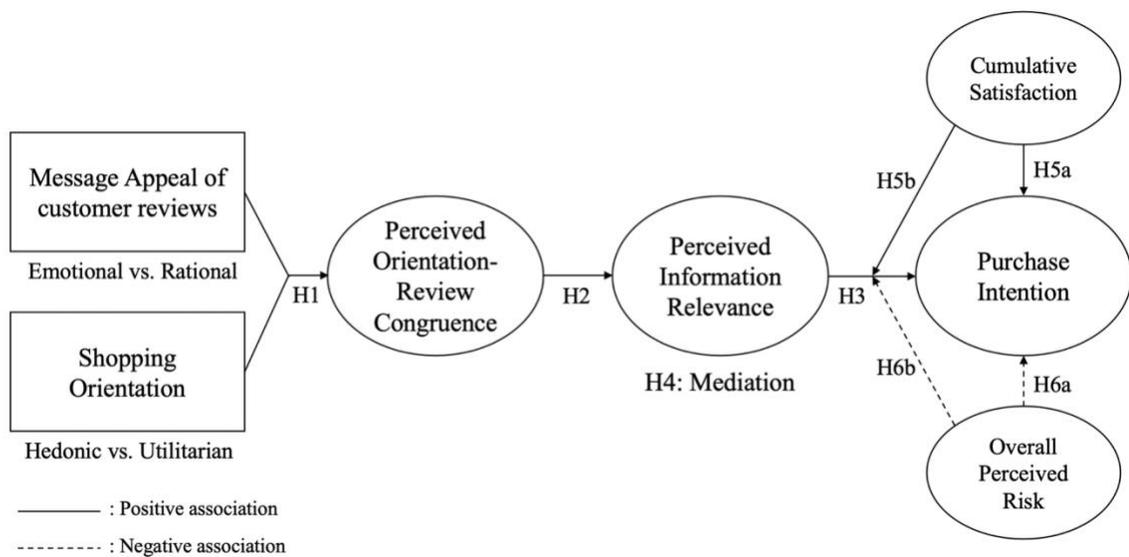
In competitive markets, consumers' post-purchase behavior plays an important role to form purchase intention. Because customer satisfaction is a key of profit growth and performance of companies, the antecedents and consequences of customer satisfaction has been explored for more than four decades (Anderson, Fornell, & Lehmann, 1994; Reichheld, 1993; Sasser et al., 1997; Tam, 2004). Cumulative customer satisfaction represents an overall evaluation of past experiences with products or services purchased from an online website (Seiders et al., 2005). The positive effects of cumulative satisfaction were found on customer trust, relationship with the website, purchase intention, repurchase intention, and customer loyalty by numerous studies (e.g., Ha & Perks, 2005; Kuo et al., 2013; Liang & Chen, 2009; Lien et al., 2017; Ranaweera et al., 2008; Rose et al., 2012). Thus, Cumulative satisfaction with an e-tailer will have a positive direct effect on purchase intention. Also, cumulative customer satisfaction with an e-tailer will moderate the relationship between perceived information relevance and purchase intention. In other words, the effect of perceived information relevance on purchase intention will be stronger among consumers who have a high level of cumulative satisfaction with the e-tailer.

Consumer behavior is often viewed as an instance of risk taking (Bauer, 1960). Especially in the e-commerce context, consumers perceive uncertainty about possible negative outcomes from a transaction because consumers cannot experience products (Kim, Ferrin, & Rao, 2008). Perceived risk has been found to be a barrier to customer satisfaction, online shopping preference, and purchase intention (Barnes et al., 2007; Kim

& Lennon, 2013; Marakanon & Panjakajornsak, 2017; Yi et al., 2020). This study hypothesized that overall perceived risk will negatively affects purchase intention directly. In addition, perceived risk of shopping at an e-tailer will moderate the relationship between perceived relevance and purchase intention, such that the relationship will be stronger among consumers who perceive a lower level of risk. Figure 1 illustrates the research model developed in this study.

Figure 1

Research Model of Hypothesized Relationships



1.3 Purpose of the Study

As discussed above, while the literature on eWOM to date has focused on the persuasive role of online customer reviews, it has not been sufficient to explain different perceptions depending on message appeals of online customer reviews and shopping orientation. Thus, the purpose of the current study was to fill this gap in consumer

research on online customer reviews. More specifically, this study first aimed to investigate how a congruence between a message appeal of online reviews and shopping orientation affects perceived relevance of information presented in an online customer review and, in turn, leads to consumers' purchase intention. The mediating role of perceived information relevance between the congruence perception and purchase intention was also examined. Second, this study aimed to examine the role of cumulative customer satisfaction and overall perceived risk in directly affecting purchase intention as well as in moderating the relationship between perceived relevance and purchase intention.

1.4 Significance of the Study

This study contributes to the eWOM and congruence literature by offering a better understanding of how different message appeals of online customer reviews can be useful depending on shopping orientation from the perspective of congruence. Since perceived relevance of information was proposed to explain the mechanism under which congruence perception affects consumers' intention to purchase the reviewed product, the findings of the study can provide an in-depth knowledge of persuasive role of online reviews. Lastly, the current study extends the findings of the previous literature in that this study empirically investigated the role of the message appeal of online customer reviews in a managerially applicable way.

This study also provides implications for practitioners. Based on the findings of the current study, marketers can have an insight into how to utilize a specific message appeal of customer reviews. Moreover, marketers can gain an idea to increase target

consumers' purchase intention by enhancing their perception of congruence and information relevance.

1.5 Definitions of Terms

eWOM: an exchange, flow of information, communication, or conversation between two individuals in the context of e-services (Goyette et al., 2010).

Online customer reviews: peer-generated evaluations of products and services posted on a company's or third-party websites (Mudambi & Schuff, 2010).

Message appeal: a basic characterization of the content style of a message (Flora & Maibach, 1990; Teichert et al., 2018; Wang & Mowen, 1997).

Message appeal of online customer reviews: a concept of dividing online customer reviews into emotional and rational, according to their message appeals (Kotler & Keller, 2008).

Emotional message appeal: a message appeal that can elicit consumers' positive or negative emotions to arouse purchase willingness (Albers-Miller & Stafford, 1999; Kotler & Armstrong, 2010; Kotler & Keller, 2008).

Rational message appeal: a message appeal that uses consumer benefits as the appeal to present product attributes and functions (Albers-Miller & Stafford, 1999; Kotler & Armstrong, 2010; Kotler & Keller, 2008).

Shopping orientation: a consumer's general attitudes about shopping (Brown et al., 2003; Scarpi, 2012).

Hedonic shopping orientation: a consumer's general attitudes about shopping that is related to the potential entertainment value of shopping and enjoyment from the experience (Babin et al, 1994; Hirschman & Holbrook, 1982).

Utilitarian shopping orientation: a consumer's general attitudes about shopping that is related to efficient purchasing to achieve task-related goals with minimum cost (Babin et al, 1994; Hirschman & Holbrook, 1982).

Perceived relevance of information: customers' perceptions of what data are applicable and helpful for a task depending on each customer's needs in a specific situation (Wang & Strong, 1996).

Customer satisfaction: a relative judgment that considers the trade-offs of qualities versus the costs and efforts obtained through a purchase (Ostrom & Lacobucci, 1995).

Cumulative customer satisfaction: an overall evaluation of past experiences with products or services purchased from an online website (Seiders et al., 2005).

Perceived risk: a consumer's belief about the potential uncertain negative outcomes from a particular transaction (Murray, 1991).

Chapter 2. Literature Review

This chapter provides a review of the research topic followed by the theoretical framework for the research and a review of related literature. Next, the hypotheses and the research model are specified based on the literature review.

2.1 Online Customer Reviews

For the past three decades, the role of word-of-mouth (WOM) has been widely investigated to understand how it affects consumer decision-making in general (Liu, 2006; Reynolds & Beatty, 1999; Swan & Oliver, 1989). In business-to-consumer (B2C) settings, WOM is defined as informal communications between two or more parties concerning evaluations of products and services rather than formal complaints and applause to companies and employees (Anderson, 1998; Dichter, 1966; Westbrook, 1987). Consumers can use WOM to recommend products to others or share their opinions about the products, which in turn influences the formation of other consumers' attitudes and behavior toward the products and actual product sales (Khan et al., 2015; Yang et al., 2012). WOM marketing, which refers to the intentional influencing of consumer-to-consumer communication (Kozinets et al., 2010), is an effective way as it can offer a solution for marketers to penetrate 'consumer guards' to get them talking about a particular product (Boyer et al., 2015).

Since the inception of the Internet, most of U.S. shoppers use e-commerce when engaging in shopping behavior (Lubis, 2018). According to a survey conducted by Reagan (2017), 76% of American survey respondents consider purchasing products from Amazon. More recently, a survey conducted by Forbes (Masters, 2019) showed that 89% of American consumers are more likely to buy products from Amazon than other e-

commerce websites. With the prevalence of online shopping, electronic word-of-mouth (eWOM) has become an important source of information for consumers who are planning to purchase new products or services (Chu et al., 2019; Hennig-Thurau et al., 2004; Trusov et al., 2009; You et al., 2015) in the online shopping environment. eWOM has drawn the interest of many researchers (e.g., Babić Rosario et al., 2016; Godes & Mayzlin, 2004; Kupor & Tormala, 2018), which originally refers to an exchange, flow of information, communication, or conversation between two or more individuals in the context of e-services (Goyette et al., 2010). Consumers can share information of their purchased or interesting products and disseminate their cognitive and affective responses to their purchased products through eWOM; research suggests their numerous motivations including concern for other consumers, social and emotional benefits from communication, economic incentives from providing information, advice-seeking tendency, and venting their positive/negative feelings (Gruen et al., 2006; Hennig-Thurau et al., 2004).

One of the most effective ways of eWOM in a customer-to-customer basis is the use of online customer reviews (Duan et al., 2008; Gruen et al., 2006; Ismagilova et al., 2020). Online customer reviews are defined as peer-generated evaluations of products and services posted on a company's or third-party websites (Mudambi & Schuff, 2010). In general, most U.S. retail websites maintain customer review systems that enable consumers to post product reviews with numerical form of star ratings and open-ended customer comments about the product. For example, Amazon shoppers can do star-rating from 1 to 5, add a headline, and write their own reviews for the purchased products. With the customer reviews, shoppers can be persuaded or discouraged to buy the reviewed

products in their pre-purchasing stage, and the review information is able to reduce uncertainty; both practically (e.g., Murphy, 2018; Podium, 2017) and academically (e.g., Hennig-Thurau et al., 2004; Vermeulen & Seegers, 2009), the persuasive role of online customer reviews has been confirmed (Guo et al., 2020). According to several recent reports on online customer reviews, 93% of consumers state that online reviews impact their purchasing decisions (Podium, 2017) and 91% of young adults trust online customer reviews as much as personal recommendations (Murphy, 2018). Consumer-generated online customer reviews on third-party review sites such as TripAdvisor and Yelp.com routinely inform and influence consumer behavior and purchase decisions (Gretzel & Yoo, 2008; Vermeulen & Seegers, 2009). In this vein, the importance of online customer reviews cannot be overestimated since online reviews enable consumers to interact virtually and to share information and opinions and to form positive and/or negative attitudes toward and beliefs of reviewed products, services, and brands (Fang et al., 2016; Sparks et al., 2016).

In recent years, many studies have demonstrated the role of online customer reviews (e.g., Chakraborty, 2019; Cui et al., 2012; Reich & Maglio, 2020; Sparks et al., 2013; Tsao, 2014). Consumers' perception of the usefulness and social presence of a website can increase with the presence of customer reviews on the website (Kumar & Benbasat, 2006; Mudambi & Schuff, 2010). Furthermore, it has been found that online customer reviews can affect consumers' product judgment (Doh & Hwang, 2009; Lee & Youn, 2009; Reich & Maglio, 2020). From the perspective of e-commerce firms, online customer reviews are valuable in forecasting sales (Dellarocas et al., 2007; Schneider & Gupta, 2016), because the reviews can influence consumers' product evaluation and

purchase intention (Chakraborty, 2019; Doh & Hwang, 2009; Jiménez & Mendoza, 2013) and actual sales of reviewed products (Cui et al., 2012; Hu et al., 2008; Tang, 2017).

What are the determinants of a review's persuasiveness? Researchers have extensively explored the crucial components that affect perceived helpfulness of reviews (e.g., Connors et al., 2011; Karimi & Wang, 2017; Mudambi & Schuff, 2010; Ozanne et al., 2019). First of all, consumers mainly judge the review credibility and helpfulness based on argument and information quality (Cheung et al., 2008; Cheung et al., 2012; Filieri & McLeay, 2014; Zhang, Zhao, et al., 2014; Zhang & Watts, 2008). Most of the review systems have star ratings, and the numerical ratings for online customer reviews typically range from one to five stars (Mudambi & Schuff, 2010). Unquestionably, the reviews with higher star ratings make consumers perceive the reviewed products more positively. However, when the star ratings and review contents reflect extremity, there is a possibility that consumers perceive the reviews less helpful. According to the previous studies (Mudambi & Schuff, 2010; Presser & Schuman, 1980), a three-star review represents a truly moderate view of the reviewed product, enhancing the reader's perceived helpfulness of the online review. In other words, consumers tend to avoid the review contents that are perceived as having extreme opinions. Review valence is defined as whether the online review is positive or negative. Mixed findings have been provided by previous studies on review valence; some researchers (e.g., Jeong & Koo, 2015; Kusumasondjaja et al., 2012; Racherla & Friske, 2012) claimed that consumers believe negative reviews are more credible than positive reviews, whereas others (e.g., Mudambi & Schuff, 2010; Purnawirawan et al., 2015) argued that there is no explicit difference in persuasiveness between positive and negative reviews. Review depth, which is frequently

reflected by word count and review length, can also affect the perceived helpfulness of online reviews. Researchers (e.g., Baek et al., 2012; Mudambi & Schuff, 2010; Pan & Zhang, 2011) demonstrated that consumers are persuaded by long reviews than short reviews because consumers believe that word count intuitively represents the degree of the profundity of reviewers' opinions. Furthermore, the role of review source on the perceived helpfulness of reviews has been consistently explored, including reviewer expertise (Li et al., 2013; Vermeulen & Seegers, 2009; Zhu et al., 2014) and reviewer characteristics (Huang et al., 2015; Karimi & Wang, 2017). For example, Karimi and Wang (2017) empirically demonstrated that reviewer profile image enhances the perceived helpfulness of review by serving mainly as a visual decoration that creates affective responses to readers rather than identity information.

2.2 Theoretical Framework

2.2.1 Congruence

In Latin, the definition of “*congruential*” is “conformity, agreement, proportion, and relation,” which refers to “the fact of entities going well together” (Maille & Fleck, 2011, p. 79). Congruence focuses on one's attitude change that describes some patterns of the relationship between two or more dimensions. Congruence effects have been investigated in many previous studies pertaining to marketing, advertising, communication, brand strategy, and sponsorship. Although congruence effects have been explored under various names such as *fit*, *similarity*, *typicality*, *consistency*, and *match* interchangeably, it comprehensively represents a “match-up” effect between two entities (Choi & Rifon, 2012; Fleck & Quester, 2007; Heckler & Childers, 1992; Lynch &

Schuler, 1994). When people are given two entities, they consider the combination between the two entities and perceive similarities and compare the similarities to their expected combination (Maille & Fleck, 2011). As a result, people can evaluate the congruence between the two entities, which consequently affects the change in one's attitudes toward the two entities and information retrieval (Atienza et al., 2011; Chandra & Krovi, 1999; Rice et al., 2012).

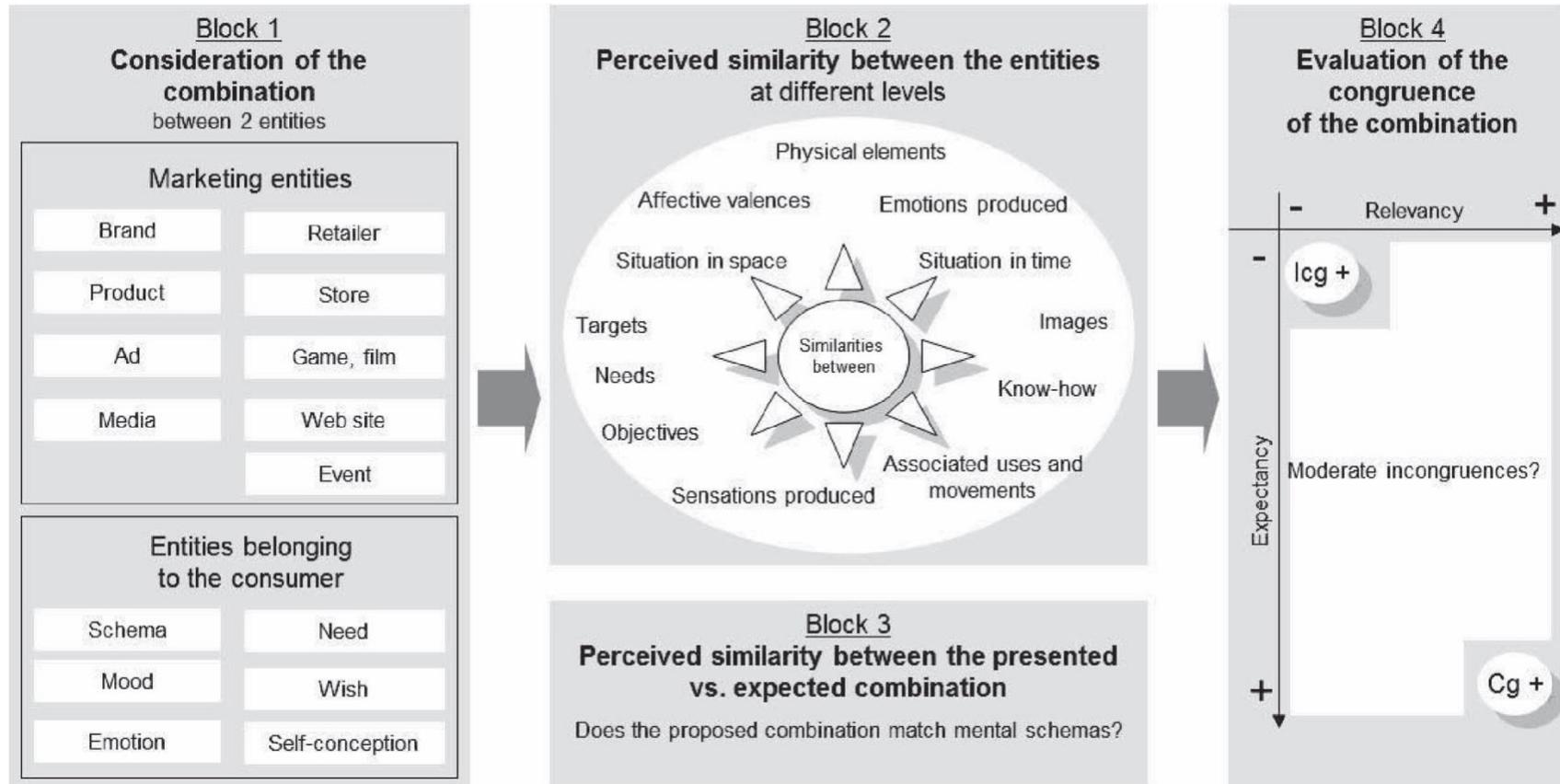
The frequently explored congruence effect in consumer studies is based on the self-congruity theory (e.g., Aguirre-Rodriguez et al., 2012; Park & Yoo, 2016; Quester et al., 2000; Sirgy, 1985; Sirgy et al., 2000). Self-congruity theory explains the effects of congruence between consumers' self-image and other entities' personalities (Sirgy, 1986). The congruence between one's self-concept (i.e., actual self and ideal self) and a product and/or brand produces favorable consumer responses including positive brand attitudes and purchase intentions (Aaker, 1997; Aguirre-Rodriguez et al., 2012).

However, it is important to note that congruence effect is applicable not only to self-image but also to an aspect of other entities including product image, brand, retailer, advertising message, store, and event (Ahluwalia & Gürhan-Canli, 2000; Boush & Loken, 1991; Pradhan et al., 2016), since the interested entities of congruence vary according to the area of application and situation (Maille & Fleck, 2011). Several studies (e.g., Fleck & Quester, 2007; Maille & Fleck, 2011) meta-analyzed and clarified the concept of congruence across the research areas, confirming the consensus view of positive congruence effects; "congruence facilitates the introduction of new products to a market and/or assists consumers' processing of the message" (Fleck & Quester, 2007, p. 977).

Maille and Fleck (2011) provided the model of formation mechanisms of congruence evaluation in marketing, which consists of following: 1) consideration of the combination, 2) perceived similarity between the entities at different levels, 3) perceived similarity between the presented versus expected combination, and 4) evaluation of the congruence of the combination (shown in Figure 2). Firstly, individuals consider the combination of marketing entities and entities belonging to the consumer. Marketing entities include brand, product, retailer, store, ad, media, web site, and event. Entities belonging to the consumer include schema, need, mood, wish, emotion, and self-concept. Secondly, individuals perceive similarity between the two entities at different levels such as affective valence, situation in space, and physical elements. If the individuals have expected outcomes of congruence, they perceive similarity between the presented and expected combination. In other words, individuals judge the match between the proposed combination and their mental schema. Lastly, the individuals then assess the congruence of the combination. The perceived similarity between the two entities is inferred from a certain degree of relevancy, and the similarity between the proposed combination and expected combination is inferred from expectancy. Thus, a high degree of both relevancy and expectancy represents congruence, whereas a low degree of both relevancy and expectancy represents incongruence.

Figure 2

Formation Mechanisms of Congruence Evaluation (Maille & Fleck, 2011, p. 80)



2.2.2 Prior Research on Congruence Effects in Consumption Contexts

This section provides a review of previous literature on congruence effects in various research areas: sponsorship, brand strategy, advertising, celebrity endorsement, and online customer reviews.

In a sponsorship literature, numerous studies have provided empirical evidence that the more consumers perceive the sponsor and the event as suitably matched, the more favorably inclined they are toward it, and toward purchasing its products (e.g., Rifon et al., 2004; Rodgers, 2003; Speed & Thompson, 2000). Furthermore, several studies investigated the role of congruence in online environments. For instance, Rodgers (2003) examined the effects of sponsor relevance on consumers' responses to the sponsorships. The results indicated that relevant Internet sponsors were more persuasive than irrelevant Internet sponsors for consumers' memory, attitudes, and behavioral intentions. Weeks et al. (2008) demonstrated that sponsor-sponsee congruence effects also apply to the online environment, and such congruence effects on people's attitudes are moderated by the perceived commerciality of the explanation for the sponsor-sponsee relationship.

Congruence effects have been also explored in the literature of brand strategy (e.g., Bridges et al., 2000; Chen-Yu et al., 2016; D'Astous et al., 2007; Walchli, 2007). Walchli (2007) introduced the congruity evaluation of co-branded products to traditional brand-product congruence to understand consumer perceptions of a brand partnership. The results indicate that there is an optimized level of congruence between brand partners and the congruence effects vary depending on customer involvement; for consumers with high involvement, moderate congruence was the most effective, whereas for those with

low involvement, full congruence was the most applicable to enhance the perceived quality of co-branded products. Similarly, D'Astous et al. (2007) confirmed that consumers exhibit a positive attitude toward a co-branding strategy in the context of arts when a new product is congruent with the organization's activities and there is a low level of complexity. In the context of an online shopping environment, Chen-Yu et al. (2016) found that brand image congruence is strong antecedents of brand affect and brand trust, consequently, enhancing consumers' brand repurchase intention in online apparel shopping.

Previous studies in advertising have explored the role of congruence to understand how people process information provided in ads depending on congruence and thus form their attitudes (e.g., Dahlén & Lange, 2004; Kamins et al., 1991; Lavack et al., 2008; Phillips & McQuarrie, 2009). For example, Dahlén and Lange (2004) investigated how ad-brand incongruency affects viewers' responses to ads in the context of familiar versus unfamiliar brands. For the familiar brand, perceived ad-brand incongruence decreased ad attitude and ad credibility but increased brand attitude, whereas such effects were found to be insignificant for the unfamiliar brand. In radio advertising, Lavack and colleagues (2008) explored how congruence between brand and music affects people's attitude toward the ads and brand, depending on the types of ad copy that requires a different degree of cognitive resources. According to their results, brand-music congruence has more positive effect compared to incongruence in high-cognition ads, whereas such effect is not found in low-cognition ads.

Celebrity endorsement researchers have paid attention to the effects of congruence and have consistently demonstrated the positive effects of congruence (e.g.,

Kamins & Gupta, 1994; Kirmani & Shiv, 1998; Lee & Thorson, 2008; Shan et al., 2019; Till et al., 2008). For example, Kamins and Gupta (1994) showed that a high level of congruence between the spokesperson and product combination leads to a higher perception of believability and attractiveness of the spokesperson and a more favorable attitude toward the product. Lee and Thorson (2008) demonstrated that consumers evaluate celebrity endorsements more favorably and report higher purchase intentions when there is a moderate level of congruence between the celebrity and product than when there is either a complete match or an extreme mismatch. More recently, the congruence effect has been investigated in the area of influencer marketing. Shan et al. (2019) confirmed that an effective endorsement outcome is achieved with a high level of perceived congruence between the image of a social media influencer and the consumer's ideal self-image.

A few previous empirical studies investigated the congruence effects of online customer reviews. Huang et al. (2013) investigated how online product review content influences consumers' product review comprehension assessment depending on the product type under the cognitive fit and schema congruity theory. The results indicated that consumers perceive a review as more helpful, make lower cognitive effort, and spend more time to comprehend the reviews in the two matching conditions: attribute-based reviews describing a search product and experience-based reviews describing an experience product (Huang et al., 2013). Liu et al. (2018) examined whether linguistic style and consumption type in online customer reviews can interact with each other and result in different levels of perceived incongruity based on congruity theory and the selectivity model. More specifically, Liu et al. (2018) proposed that the helpfulness of

subjectivity versus objectivity expressions in an online customer review is determined by two factors: whether the consumption experience in the online review is hedonic or utilitarian, and whether the reader is a male or female. It was found that subjective online customer reviews are effective for enhancing men's purchase intention in the hedonic setting and women's purchase intention in the utilitarian setting. Although these studies examined the congruence effects of online reviews, more investigation is needed to understand the congruence effect between a message appeal of online customer reviews (emotional vs. rational) and consumers' shopping orientation (hedonic vs. utilitarian).

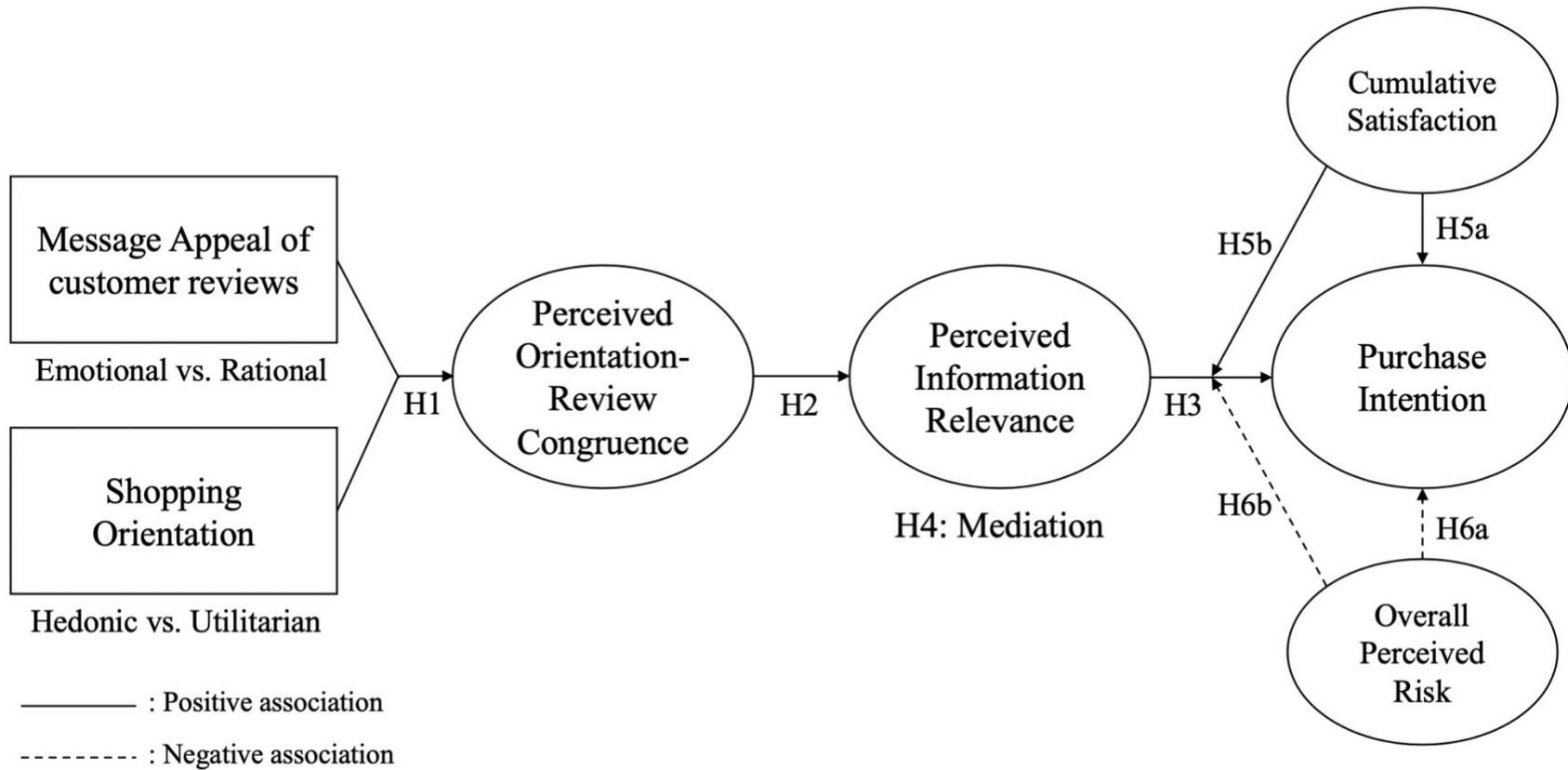
Although the positive role of congruence has constantly reported, an interesting room for research can be found in the findings of an optimal level of congruence and inconsistent findings of congruence effects. For example, consumers' most favorable evaluation of a celebrity endorsement was formed with a moderate level of congruence between the celebrity and product rather than the highest level of congruence (Lee & Thorson, 2008), which indicates the "inverted-U" data function. In addition, although there was an only adequate level of fit between a television program and a sponsored product, viewers accepted the sponsor that added to the entertainment value of the program (Masterson, 2005). Such findings can be attributed to moderators and boundary conditions; several studies suggested moderating factors on the effect of congruence such as consumer involvement, need for cognition, attitude toward advertising, promotional messages, and motivation to resolve incongruence (e.g., Bosnjak & Rudolph, 2008; Dahlén et al., 2005; Graeff, 1996; Walchli, 2007).

2.3 Research Model and Hypothesis Development

Based on the theoretical framework, a research model was developed as shown in Figure 3. In brief, the model illustrates how perceived congruence between a message appeal of online reviews (emotional vs. rational) and shopping orientation (hedonic vs. utilitarian) affects perceived relevance of information presented in an online customer review and, in turn, leads to consumers' purchase intention. It also examines the role of cumulative customer satisfaction and overall perceived risk in moderating the relationship between perceived relevance and purchase intention, as well as in directly affecting purchase intention. In the following section, each of the variables and its related hypothesis will be described in detail.

Figure 3

Research Model of Hypothesized Relationships



2.3.1 Message appeal

Message appeal refers to a basic characterization of the content style of a message (Flora & Maibach, 1990; Teichert et al., 2018; Wang & Mowen, 1997). The concept of message appeal classification was originated from advertising and communication literature (e.g., Aaker & Norris, 1982; Filo et al., 2009; Liu & Stout, 1987; Padgett & Allen, 1997), which classically divided advertising messages into informational and transformational. The informational message appeals to the cognition and logic of consumers by highlighting functional benefits and attributes, whereas the transformational message appeals to the emotions or senses while promising future experiences (Jang et al., 2014; Laskey et al., 1989; Puto & Wells, 1984). Based on the previous categorization of message appeals (Albers-Miller & Stafford, 1999; Copeland, 1924; Pallak et al., 1983), Kotler and Keller (2008) suggested the importance of two categorizations of message appeals: emotional and rational. An emotional message appeal is grounded in the emotional and experiential side of consumption (Albers-Miller & Stafford, 1999). The advertising based on emotional appeal can elicit consumers' positive or negative emotions to arouse purchase willingness by seeking to make the consumer feel good about the product, creating a likable or friendly brand, and relying on feelings such as effectiveness, love, pride (Kotler & Armstrong, 2010). In advertising, appealing to consumers' emotions can be achieved using strong imagery and impactful text. For example, the famous advertising slogan of Nike is "Just Do It" has been a trademark of Nike, making customers to emotionally attached to the brand. On the other hand, a rational message appeal is based on traditional information processing models of decision making, which suggested that consumers make logical and rational decisions

(Albers-Miller & Stafford, 1999). The rational message appeal uses consumer benefits with the appeal to present product attributes and functions, showing a product's quality, economy, value or performance (Kotler & Armstrong, 2010; Kotler & Keller, 2008). Advertisers and marketers can be perceived as more authentic and create a sense of authority around a brand. For example, advertisements can include messages showing a product's superior quality, economic value, great performance, and reliability (Zhang, Sun, et al., 2014).

Although sometimes different terminology has been used for emotional versus rational message appeals, advertising researchers have explored the relative effectiveness of the two appeals. For example, some researchers (e.g., Aaker & Norris, 1982; Holbrook, 1978; Stafford & Day, 1995) found that informational or rational appeals are perceived as more effective and credible, are more liked, and result in higher purchase intention than transformational or emotional appeals. The authors posit that rational, informative advertising appeals may help reduce some of the uncertainties often associated with the purchase of services. However, other researchers (e.g., Escalas & Stern, 2003; Goldberg & Gorn, 1987; Holbrook & O'Shaughnessy, 1984) have argued that advertisements based on emotional (i.e., transformational) message appeals can persuade consumers more effectively, since emotional and experiential appeals can alleviate the abstract nature of service offerings (Albers-Miller & Stafford, 1999; Unwin, 1975). It should be noted that the effectiveness of the two message appeals can vary depending on other factors including message characteristics (Liu & Stout, 1987; Paek et al., 2010) and product/service type (Andreu et al., 2015; Beldad et al., 2017; Holbrook & O'Shaughnessy, 1984; Johar & Sirgy, 1991). For instance, it has been proposed that the

message appeal should “match” or “be congruent with” the product type; a more emotional (i.e., transformational) message appeal should be used for a value-expressive or symbolic product and a more rational (i.e., informational) appeal should be used for a utilitarian product (Andreu et al., 2015; Beldad et al., 2017; Holbrook & O’Shaughnessy, 1984; Johar & Sirgy, 1991).

2.3.2 Message appeal of online customer reviews

Extending the conceptualization of emotional versus rational message appeals to online consumer-to-consumer communication contexts, several previous studies argued that online customer reviews can be classified into two categories based on their message appeals (e.g., Huang et al., 2013; Kotler & Keller, 2008; Liu et al., 2018; Park & Lee, 2008; Wu & Wang, 2011; Xia & Bechwati, 2008). Voss et al. (2003) discussed that consumers share and discuss their experience about product and brand using eWOM, and the shared consumption experience on the internet consists of hedonic eWOM message appeal and utilitarian elements. In this context, Wu and Wang (2011) claimed the categorization of hedonic versus utilitarian types of eWOM. Hedonic eWOM is related to a pleasant experience that consumers receive, whereas utilitarian eWOM is related to product functionality and attributes (Wu & Wang, 2011).

Furthermore, Park and Lee (2008) argued that the role of online customer reviews is considered either as an informant or a recommender based on two types of influence processes, informational and normative (Deutsch & Gerard, 1955). According to their arguments, internet reviews can be classified as either simple-recommendation reviews or attribute-value reviews. Simple-recommendation reviews include emotional and subjective recommendations (i.e., providing own evaluation that is subjective, emotional

with no support for arguments). In contrast, attribute-value reviews focus on product-relevant characteristics and benefits information (i.e., providing specific, clear information with reasons for arguments) (Park & Lee, 2008). This classification is consistent with attitude-based and attribute-based comparison processes (Mantel & Kardes, 1999), where attitude-based processing is related to overall evaluations whereas attribute-based processing is based on specific attributes. Similarly, Xia and Bechwati (2008) argued that the content of online reviews is considered either factual or experiential. Factual reviews are concrete and objective focusing on plain facts and product attributes, whereas experiential reviews are abstract and subjective concerning on the reviewer's own specific experience when buying or using the product (Xia & Bechwati, 2008).

Previous studies have generated mixed findings relating to the effects of online review types on consumer review perceptions. Some researchers (e.g., Bei et al., 2004; Franke et al., 2004) have claimed that online shoppers perceive transformational, experience-based reviews as more valuable than attribute-based review. However, other researchers (e.g., Park & Lee, 2008; Petty & Cacioppo, 1984) argued that informational, attribute-based reviews are perceived as more informative and helpful than experience-based reviews. To understand such contradictory findings, researchers have explored the moderating role of product type (Huang et al., 2013; Mudambi & Schuff, 2010; Pan & Zhang, 2011), review characteristics (Ghose & Ipeirotis, 2010; Korfiatis et al., 2012; Pan & Zhang, 2011; Xia & Bechwati, 2008), and consumer characteristics (Franke et al., 2004; Liu et al., 2018; Pan & Zhang, 2011; Park & Lee, 2009; Zhu & Zhang, 2010).

All of the aforementioned categorizations of online customer reviews are similar in that the message types are considered either informational/objective or transformational/subjective. The current study adopted the rational versus emotional categorization which was suggested by the previous literature (e.g., Albers-Miller & Stafford, 1999; Copeland, 1924; Kotler & Keller, 2008). This is because such categorization is the most robust and comprehensive conceptualization for online customer reviews and has been more widely used among follow-up researchers than any other categorizations (Motyka et al., 2018; Wu & Wang, 2011). When linking to the broad categorizations of message types, rational message appeal can be considered as informational type whereas emotional message appeal can be considered as transformational type.

2.3.3 Shopping orientation

Consumers may pursue different goals when shopping, and such shopping goals are reflected in consumers' shopping orientation (Büttner et al., 2015). In this study, shopping orientation is defined as a consumer's general attitudes about shopping based on their shopping goals (Brown et al., 2003; Scarpi, 2012). Consumers engage in consumption behavior motivated by diverse factors including to satisfy emotional wants and needs and to complete shopping tasks as work. Such shopping goals and motivations can be attributed to different shopping values suggested from the study of Babin et al. (1994): hedonistic and utilitarian (Chang & Cheng, 2015; Overby & Lee, 2006; Scarpi, 2012). In other words, the two major categories of shopping orientations frequently discussed in the literature are originated from hedonic and utilitarian shopping values (Babin et al., 1994; Wolfenbarger & Gilly, 2001). Hedonic value contains the potential

entertainment value of shopping and enjoyment from the experience (Babin et al., 1994; Hirschman & Holbrook, 1982), relating to festive, ludic, and epicurean orientation (Chang & Cheng, 2015; Sherry Jr, 1990). Utilitarian value motivates shoppers to focus on product attributes and the achievement of product acquisition tasks in a deliberate and efficient manner (Babin et al., 1994; Chang & Cheng, 2015). Consumers have a hedonic shopping orientation when they mainly focus on an affectively rewarded outcome of consumption. In contrast, consumers have a utilitarian value when they are interested in efficient purchasing to achieve task-related goals with minimum cost (Batra & Ahtola, 1991). The consumers with utilitarian orientations prioritize a functional outcome related to the conscious pursuit of an intended consequence. However, it should be noted that hedonic and utilitarian shopping value are not necessarily mutually exclusive, and a consumer can have both hedonic and utilitarian values for themselves (Babin et al., 1994).

Previous research on the relationship between shopping orientations and online shopping behavior has generated contradictory findings. For example, some studies found that consumers engage in online shopping mainly motivated by a utilitarian orientation rather than a hedonic orientation, since online shopping environment provides consumers opportunities to easily access product information, enabling direct multi-attribute comparisons while reducing information search costs (e.g., Alba et al., 1997; Bridges & Florsheim, 2008; Overby & Lee, 2006; Sarkar, 2011). Similarly, the study conducted by To et al. (2007) demonstrated that while both hedonic and utilitarian motivations affect intention to search and intention to purchase online, a utilitarian motivation has a stronger impact, in consistent with previous studies (e.g., Huang, 2003; Koo et al., 2008; Ryu et

al., 2010). On the other hand, other previous studies emphasized the importance of hedonic motivations for online shopping (e.g., Childers et al, 2001; Goldsmith & Goldsmith, 2002; Scarpi, 2012; Shang et al., 2005). For example, the study conducted by Scarpi (2012) empirically confirmed that utilitarian shopping value is valuable and strongly present online, but hedonic value is even more profitable that has impacts on the number of items purchased online and website revisit intention. Considering the fact that most consumers shop online in the contemporary society and electronic commerce has become more influential to purchasing process, it is plausible to think that both consumers with utilitarian shopping orientation and consumers with hedonic shopping orientation engage in information search, browsing, and actual purchase online (Childers et al., 2001; Scarpi, 2012; Shang et al., 2005; To et al., 2007; Wang et al., 2011).

Based on the previous literature that investigated the characteristics of (a) message appeal of online customer reviews (rational vs. emotional) and (b) shopping orientation (hedonic vs. utilitarian), it is reasonable to posit the congruence effect between the two constructs. More specifically, it has been argued that a rational online review is more informational concerning a product's attributes and function than an emotional online review. In contrast, an emotional online review is more based on a consumer's experience and affect than a rational review. Similarly, consumers with a utilitarian shopping orientation have task-oriented, practical, and rational goals (Batra & Ahtola, 1991) concerning product-related elements, whereas consumers with hedonic shopping orientation pursue emotional rewards from their shopping experience (Babin et al., 1994). In this light, as shown in Table 1, this study proposes that there will be a congruence/incongruence effect between the shopping orientation and message appeal of

online customer review. For example, consider a customer who wants to buy a laptop for work, which indicates that the customer has a utilitarian shopping orientation. If the customer faces an online customer review that conveys a rational message appeal, the customer will perceive a high level of congruence between the shopping orientation and the message appeal of the review. In contrast, if the customer encounters an online review that conveys an emotional message appeal, the customer will perceive a low level of congruence. Formally:

H1: When shopping orientation is hedonic (vs. utilitarian), exposure to emotional (vs. rational) online customer reviews leads to a high level of perceived congruence, whereas exposure to rational (vs. emotional) online customer reviews leads to a low level of congruence.

Table 1

Congruence Between Shopping Orientation and Message Appeal of Online Review

	Hedonic Orientation	Utilitarian Orientation
Emotional Review	High perceived congruence	Low perceived congruence
Rational Review	Low perceived congruence	High perceived congruence

2.3.4 Perceived relevance of information

Since the 1970s, researchers have described information relevance as a standard for judging whether the information provided is related to information needs or not (Chen et al., 2014; Xu & Chen, 2006). People regard information as relevant when the data can be applied to solve a problem. That is, judgments occur through a generic processing

mode that relies on the individual's perceived information relevance (i.e., perceived informativeness) as determined by situational and personal characteristics such as individual's cognitive capacity and motivation (Kruglanski & Gigerenzer, 2011; Roets et al., 2013). Information literature has demonstrated that individuals' perception of information relevance is a multidimensional cognitive concept that has subjective and situational meaning in nature (e.g., Borlund, 2003; Mizzaro, 1997).

To clarify the subjectivity and ambiguity, Xu and Chen (2006) established a five-factor model of information relevance based on Grice's (1989) communication theory that involves topicality, novelty, reliability, understandability, and scope. The five-factor model of relevance enabled the authors to identify a set of core criteria of information relevance (shown in Table 2). The empirical findings of their study indicate that topicality and novelty are the most crucial criteria for the perception of information relevance, whereas scope was found to be insignificant criteria for information relevance. Understandability and reliability were also important components but were significant to a smaller degree (Xu & Chen, 2006). As researchers has suggested, perceived relevance of information in this study is defined as consumers' perceptions of what data are applicable and helpful for a task depending on each consumer's needs in a specific situation (Wang & Strong, 1996), which incorporates all crucial factors into overall perceived relevance of information.

Table 2*A Five-Factor Model of Information Relevance*

Terms	Definitions
Topicality	whether a response is about the topic being discussed or an abrupt switch to a different topic
Novelty	the extent to which the content of a retrieved document is new to the user or different from what the user has known before
Reliability	the degree to which the content of a retrieved document is perceived to be true, accurate, or believable
Understandability	the extent to which the content of a retrieved document is perceived by the user as easy to read and understand
Scope	the extent to which the topic or content covered in a retrieved document is appropriate to user's need

In the context of online customer reviews, individuals perceive a high level of information relevance when a review offers relevant and specific information that they perceive as being related to their needs and situations (Cheung & Thadani, 2012). Similarly, Filieri and McLeay (2014) claimed that a consumer perceives online customer reviews as having relevant information if the reviews provide the kind of information the consumer is looking for. In this context, the current study posits that a high level of perceived relevance of information can be predicted by the perceived congruence between shopping orientation and message appeal of online customer reviews. In the example above, where a customer wants to purchase a laptop for work and has utilitarian shopping orientation, the customer who reads a rational review and perceives a high level of congruence between the shopping orientation and the message appeal of online customer reviews will exhibit a high level of perceived relevance of information. On the other hand, if the customer reads an emotional review and perceives a low level of congruence between the shopping orientation and the message appeal of online customer

reviews, the customer will perceive a relatively low level of relevance of information.

Thus, we expect the following:

H2: A congruence perception of shopping orientation and message appeal of online customer reviews positively affects perceived relevance of information.

The role of perceived relevance of information has been widely confirmed in the elaboration likelihood model (ELM) of persuasion and online customer reviews literature (e.g., Cheung et al., 2012; Filieri & McLeay, 2014; Srivastava & Kalro, 2019). ELM describes two routes of persuasion that affect consumer attitude formation and alteration: central and peripheral. Individuals experience a central route of persuasion when elaboration is high, whereas a peripheral route is present when elaboration is low (Petty & Cacioppo, 1986). Through the central route, consumers decide if they want to accept a message after rationally thinking through the message meant to persuade them. In contrast, through the peripheral route, consumers rely on uncomplicated decision criteria and cues such as simple advocacy or inference without devoting cognitive energy and effort (Petty & Cacioppo, 1986). According to the previous studies, information relevance can be considered as not only a subfactor of information quality that is a central route of persuasion in ELM but also a central route itself (Filieri & McLeay, 2014; Srivastava & Kalro, 2019). For example, tailored messages stimulate greater cognitive activity than messages that are not tailored, resulting in higher perceived relevance of information (Kreuter & Wray, 2003).

As indicated in some previous studies on ELM, a high level of perceived information relevance has a more persuasive and useful role; perceived information

relevance is positively related to adoption of information from online customer reviews (Filiari & McLeay, 2014) and purchase intention in the online shopping context (Srivastava & Kalro, 2019; Wixom & Todd, 2005). Park et al. (2007) argued that online customer reviews are considered as high-quality when the reviews are product-relevant and persuasive. Similarly, Qiu et al. (2012) demonstrated that consumers believe an online customer review to be more helpful and diagnostic when the review is more relevant to the characteristics of the product they are interested in, because the review shows more information about the product. Moreover, the study conducted by Liu et al. (2018) indicated that perceived information relevance of a review explains the effect of linguistic style of the review on purchase intention. Therefore, it is reasonable to hypothesize that perceived relevance of information will enhance customers' purchase intention of a reviewed product. Also, this study posits that consumers who perceive the high congruence between their shopping orientation and message appeal of online review would be more willing to purchase the product, because the consumers consider the review more relevant and appropriate. Thus, it is hypothesized that perceived relevance of information will mediate the relationship between perceived congruence (between message appeal of online customer reviews and shopping orientation) and purchase intention. Formally:

H3: Perceived relevance of information positively affects customers' purchase intention.

H4: Perceived relevance of information mediates the relationship between a congruence perception of shopping orientation and the message appeal of customer reviews and purchase intention.

2.3.5 Customer satisfaction

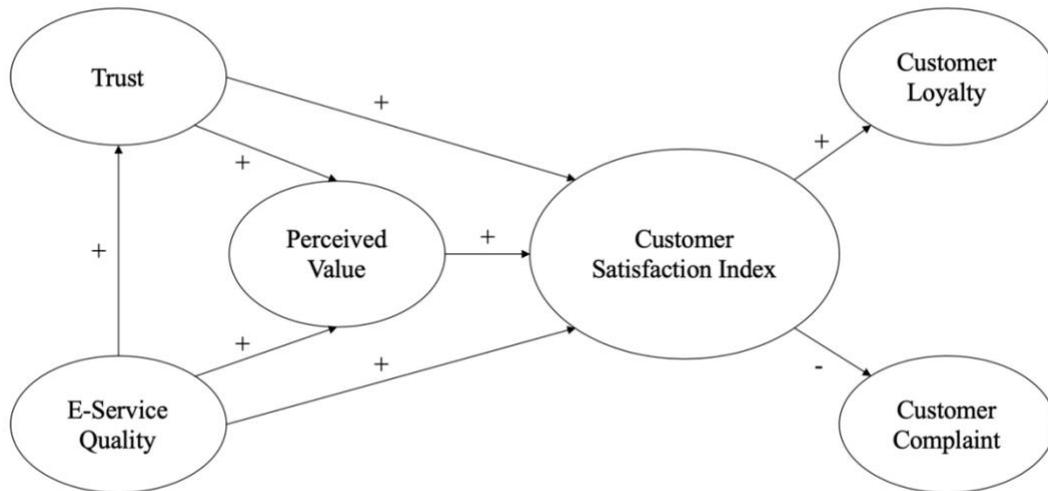
In competitive markets, retailers and firms have been increasingly concerned with consumers' post-purchase behavior. The concept of customer satisfaction has gained attention from researchers and practitioners for more than four decades, since customer satisfaction is an essential precondition for customer loyalty, which is, in turn, a key of profit growth and performance of firms (Anderson et al., 1994; Reichheld, 1993; Sasser et al., 1997; Tam, 2004). Customer satisfaction refers to a customer's postpurchase evaluation of a product and service offering, which represents a relative judgment that considers the trade-offs of qualities versus the costs and efforts obtained through a purchase (Hunt, 1977; Ostrom & Lacobucci, 1995; Zahorik & Rust, 1993). For example, a consumer has a high level of satisfaction when an offering performs better than expected, whereas a consumer has a low level of satisfaction when expectations exceed performance (Bearden & Teel, 1983). Some studies (e.g., Mano & Oliver, 1993; Westbrook & Oliver, 1991) have demonstrated that customer satisfaction is established on emotional responses to consumers' purchasing experiences and firms. On the other hand, other research studies (e.g., Homburg et al., 2006; LaBarbera & Mazursky, 1983; Oliver, 1993) have found that both cognitive and affective judgments influence each other, and overall satisfaction is attributed to their interaction.

To comprehend U.S. consumers' satisfaction and its determinants and consequences, the American Customer Satisfaction Index (ACSI) model was developed based on the quality, satisfaction, and performance (QSP) paradigm and Hirschman's (1970) exit-voice theory. The ACSI model explains causal relationships between the antecedents of customer satisfaction level (i.e., customer expectation, perceived quality,

and perceived value) to its consequences (i.e., customer complaints and customer loyalty) (Hsu, 2008). Furthermore, to understand customer satisfaction in an online setting, Hsu (2008) developed electronic-customer satisfaction index (e-CSI) model (shown in Figure 4). According to the e-CSI model, when consumers can trust a website and perceive a high service quality, the perceived value of the service providers is heightened. The three factors both directly and indirectly have positive relationships with customer satisfaction, increasing customer loyalty, and decreasing customer complaints. The e-CSI model offers the opportunity for online retailers and researchers to further understand the elements that significantly impact overall customer satisfaction by delineating the causal relationship in an online setting.

Figure 4

The Electronic-Customer Satisfaction Index Model (Hsu, 2008, p. 3035)



Previous literature has identified two general conceptualizations of customer satisfaction: overall or cumulative satisfaction and service encounter or transaction-specific satisfaction (Bolton & Drew, 1991; Cronin & Taylor, 1994; Jones & Suh, 2000; Lam et al., 2004). Transaction-specific satisfaction refers to “a consumer's satisfaction with a discrete service encounter” (Bitner & Hubbert, 1994, p. 76). Transaction-specific satisfaction provides specific indicative information about a particular product or service experience. However, because cumulative satisfaction results from a series of transactions or service encounters, it is a more fundamental indicator of a company's past, current, and future performance (Anderson et al., 1997; Bitner & Hubbert, 1994; Cronin & Taylor, 1994; Oliver, 2014). More specifically, overall cumulative satisfaction is regarded as more valuable being a function of all previous transaction-specific satisfactions because overall satisfaction is based on consumers' information from all previous experiences with the service provider (Jones & Suh, 2000; Parasuraman et al., 1994; Teas, 1993). Jones and Suh (2000) empirically investigated the effects of cumulative and transaction-specific satisfaction. The results indicate that cumulative satisfaction directly affects repurchase intentions as well as partly as a moderator on the transaction-specific satisfaction-repurchase intentions relationship. Transaction-specific satisfaction has little impact on repurchase intentions when cumulative satisfaction is high, whereas transaction-specific satisfaction has a positive influence on repurchase intentions when overall satisfaction is low (Jones & Suh, 2000). In this light, this study adopts the conceptualization of cumulative customer satisfaction. Customer satisfaction in the current study is defined as “overall evaluation of past experiences with products or

services purchased from a shopping website” (Cronin et al., 2000; Maxham & Netemeyer, 2002; Seiders et al., 2005).

Numerous studies have confirmed the positive effect of customer satisfaction in an online shopping context on customer trust, relationship with website, purchase intention, and customer loyalty (e.g., Ha & Perks, 2005; Kuo et al., 2013; Liang & Chen, 2009; Lien et al., 2017; Ranaweera et al., 2008; Rose et al., 2012). Customer satisfaction has been suggested to affect market share and postpurchase behavior such as repurchase intention (Fornell & Larcker, 1981; Tam, 2004). Thus, it is reasonable to hypothesize that cumulative satisfaction with an e-tailer has a positive effect on purchase intention.

Consumers are likely to purchase products from an e-tailer when they have appraised the e-tailer positively. In addition, Currás-Pérez and Sánchez-García (2012) found that consumers with a higher level of satisfaction with a shopping website are more likely to commit to the website and intend to keep shopping on that website. Similar results can be found in service literature. Yi and La (2004) demonstrated that loyal customers use satisfaction directly in building repurchase intentions in the family restaurant market, as opposed to non-loyal customers. Consumers will be more likely to purchase a product that has a highly appropriate and helpful review when they have been satisfied with an e-tailer rather than they have evaluated an e-tailer negatively. In this light, this study posits that cumulative satisfaction with an e-tailer has a positive moderating effect on the relationship between perceived relevance of information and purchase intention. Thus, it is expected the following:

H5a: Cumulative customer satisfaction with an e-tailer positively affects purchase intention.

H5b: Cumulative customer satisfaction with an e-tailer moderates the relationship between perceived relevance of information and purchase intention, such that the relationship is stronger among consumers who have a high level of cumulative satisfaction with the e-tailer.

2.3.6 Perceived risk

After Bauer (1960) first stated that consumer behavior could be viewed as an instance of risk taking, many researchers have investigated the role of subjective (i.e., perceived) risk on consumer behavior (Ross, 1975). Perceived risk is defined as a consumer's belief about the potential uncertain negative outcomes from a particular transaction (Murray, 1991). In other words, consumers perceive risk as they expect a loss and the consequences of the loss if it occurs. Perceived risk is a critical factor that negatively influences consumers' decision-making and shopping behavior, including both offline and online (Vijayasathy & Jones, 2000). Especially in the e-commerce context, consumers perceive uncertainty about loss or gain more than in brick-and-mortar stores, since consumers are not allowed to feel, touch, and test products and they have to wait for delivery to have a purchased product (Forsythe & Shi, 2003; Kim et al., 2008).

Previous literature has identified six components of perceived risk: financial, product performance, social, psychological, physical, and time/convenience loss (e.g., Jacoby & Kaplan, 1972; Mitchell, 1999; Peter & Tarpey, 1975). To understand perceived risk in an online setting, four dimensions of perceived risk specifically in the online retailing context have been identified: financial, performance, psychological and perceived time/convenience loss risk (Forsythe & Shi, 2003). Financial risk refers to a net

loss of money to a customer (Horton, 1976; Sweeney et al., 1999). For example, one of the major obstacles to online purchases is that consumers are unwilling to provide their credit card information online, because online shoppers are likely to be concerned about a possible monetary loss (Forsythe & Shi, 2003; Maignan & Lukas, 1997). Product performance risk is the loss incurred when a purchased product does not perform well as expected (Horton, 1976). In an online shopping context, consumers do not have the ability to judge product quality due to barriers to touching, feeling, and trying the product. Consequently, online shoppers have more chance to purchase with inaccurate product colors and insufficient information on quality attributes relevant. Psychological risk is defined as disappointment, frustration, and shame experienced when a consumer's personal information is disclosed online (Forsythe & Shi, 2003). Psychological risk is attributed to the fact that the Internet is often perceived as likely to violate users' privacy (Benassi, 1999; Maignan & Lukas, 1997). Lastly, time/convenience risk is defined as the loss of time and inconvenience due to the difficulty of purchasing process (Forsythe & Shi, 2003). For example, online shoppers experience inconvenience navigating websites, searching for appropriate information, and submitting orders, which results in potential delays receiving products. Like many previous studies (e.g., Forsythe & Shi, 2003; Kim et al., 2008; Stone & Grønhaug 1993), the current study will explore the role of overall perceived risk, which refers to the perceived likelihood that purchase of an item will result in general dissatisfaction of a consumer, to incorporate all four dimensions of perceived risk simultaneously.

The negative influence of perceived risk for both online and offline shopping environment has been widely investigated by numerous studies. For example, perceived

risk has been found to be a barrier to customer satisfaction (Cheng, & Lee, 2011; Johnson et al., 2006), perceived value (Snoj et al., 2004; Yee & San, 2011), and customer loyalty (Marakanon & Panjakajornsak, 2017; Tuu et al., 2011). Especially for e-commerce, perceived risk decreases online shopping preference (Korgaonkar & Karson, 2007; Korgaonkar et al., 2006; Masoud, 2013) and intention to use sharing economy (Kim et al., 2015; Yi et al., 2020). It is a well-established notion that perceived risk negatively affects product/service evaluation and lowers purchase intention in an online context (Barnes et al., 2007; Chang & Wu, 2012; Faqih, 2013; Kim & Lennon, 2013; Martin et al., 2015; Park et al., 2005; Wood & Scheer, 1996). Also, consumers tend to communicate online to seek information or opinions and reduce perceived risk (Goldsmith & Horowitz, 2006). In this light, it is reasonable to posit that perceived risk negatively affects purchase intention directly. Interestingly, Campbell and Goodstein (2001) found that perceived risk moderates the impact of perceived congruity on product evaluations; the positive evaluation of moderately incongruent products does not appear when consumers perceive a high risk of product selection. This was because when consumers evaluate products, perceived risk causes consumers to combine their general product schema with a particular purchase scenario (Campbell & Goodstein, 2001). In tourism literature, Tavitiyaman and Qu (2013) found that at a low perceived risk level, the positive influences of destination image on overall satisfaction and behavioral intention are greater than at a high perceived risk level. Thus, this study hypothesizes that perceived risk negatively moderates the effects of perceived relevance of information on purchase intention. When the level of perceived risk of shopping at an e-tailer is high, the

positive effect of perceived relevance of information on purchase intention will be weaker. Thus, it is hypothesized that:

H6a: Perceived risk of shopping at an e-tailer negatively affects purchase intention.

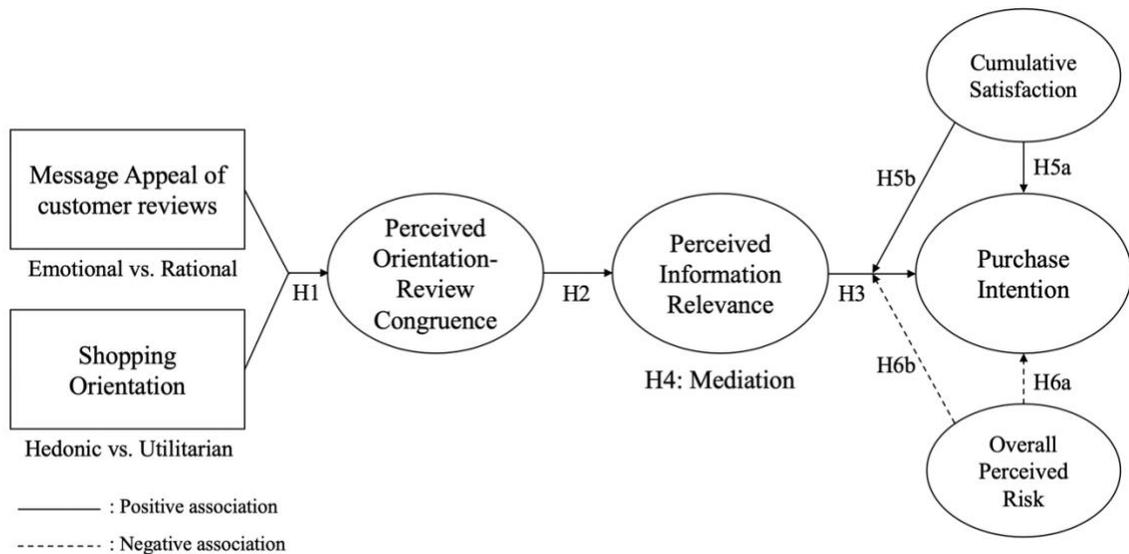
H6b: Perceived risk of shopping at an e-tailer moderates the relationship between perceived relevance of information and purchase intention, such that the relationship is stronger among consumers who perceived a lower level of risk.

Chapter 3. Methods

This chapter provides a description of the research methodology. The research model and hypotheses are restated (shown in Figure 5). Next, presented are the study design, stimuli development, pretest, sample, experimental study procedure, and instruments. This study was approved by the University of Minnesota Institutional Review Board (IRB).

Figure 5

Research Model of Hypothesized Relationships



H1: When shopping orientation is hedonic (vs. utilitarian), exposure to emotional (vs. rational) online customer reviews leads to a high level of perceived congruence, whereas exposure to rational (vs. emotional) online customer reviews leads to a low level of congruence.

H2: A congruence perception of shopping orientation and message appeal of online customer reviews positively affects perceived relevance of information.

H3: Perceived relevance of information positively affects customers' purchase intention.

H4: Perceived relevance of information mediates the relationship between a congruence perception of shopping orientation and the message appeal of customer reviews and purchase intention.

H5a: Cumulative customer satisfaction with an e-tailer positively affects purchase intention.

H5b: Cumulative customer satisfaction with an e-tailer moderates the relationship between perceived relevance of information and purchase intention, such that the relationship is stronger among consumers who have a high level of cumulative satisfaction with the e-tailer.

H6a: Perceived risk of shopping at an e-tailer negatively affects purchase intention.

H6b: Perceived risk of shopping at an e-tailer moderates the relationship between perceived relevance of information and purchase intention, such that the relationship is stronger among consumers who perceived a lower level of risk.

3.1 Study Design

This study used a 2 (message appeal of online customer reviews: emotional vs. rational) \times 2 (shopping orientation: hedonic vs. utilitarian) between-subjects online experiment. A quantitative research methodology using statistical evidence was adapted

for this study because it allows testing the hypothesized relationships between variables (Black, 1999). By using a quantitative method, researchers can draw conclusions for a large number of people by performing efficient data analysis and demonstrating relationships between variables (Creswell, 2014). An experiment design allows researchers to have control over the explanatory variables, thus, to test causal relationships among the variables (Last et al., 2001). The advantages of conducting an online experiment include: (a) standardization of the procedures of experiment; and (b) depersonalization of the experimenter-subject interaction (Greiner, 2004).

Regarding a sampling frame, this study used Amazon Mechanical Turk (MTurk) as an online survey platform, which is an online labor market where survey requesters post jobs and workers choose jobs to do for pay. There has been a significant increase in the use of crowdsourcing platform such as MTurk for research (Hulland & Miller, 2018). MTurk has been widely used for behavioral research because of its unique advantages: subject pool access, subject pool diversity, low cost, and faster iteration between theory development and experiment (Mason & Suri, 2012). Using MTurk was appropriate for the population of the current study. First, the difference between gender was not hypothesized in this study. Regarding gender ratio, the population of MTurk workers is similar to the overall U. S. population (Difallah et al., 2018). Second, even though there were no age criteria, the participant for this study should be familiar with the online shopping environment. A previous study showed that younger shoppers are more engaged in online shopping such as searching for products than older shoppers (Sorce et al., 2005). MTurk workers tend to be younger than the overall U.S. population (Difallah

et al., 2018). Thus, conducting an online experiment through MTurk was deemed appropriate for achieving the objective of the study.

Message appeal of online reviews was manipulated using the developed stimuli. Shopping scenarios developed by the researcher were used to manipulate the participants' shopping orientation. The shopping scenarios used in the study are presented in Appendix A. All manipulations were checked using self-reported measures. Perceived congruence, perceived relevance of information, purchase intention, cumulative satisfaction, and perceived risk were measured. Brand attitude toward Microsoft and technology proficiency were also measured and controlled because the product provided in the stimuli was Microsoft Surface Pro, which is a technologically advanced product from a real brand. It is known that brand attitude and purchase intention are positively associated (MacKenzie & Lutz, 1989; Shimp, 1981). Technology proficiency refers to one's ability to use the Internet with proficiency; it represents the participants' level of basic computer skills (Klein & Ford, 2003). Technology proficiency and innovativeness can serve as a barrier to adopting new technology (Butler & Sellbom, 2002). Thus, it is reasonable to control brand attitudes towards Microsoft and technology proficiency.

3.2 Stimuli Development

As mentioned above, a shopping orientation and a message appeal of online customer reviews were manipulated. The stimuli were the form of a screenshot of Amazon website that includes a product image, short product information, and an online customer review. The screenshots of Amazon website are presented in Appendix B and Appendix C. Amazon was selected for an e-tailer for this study because it is the most

popular and widely used retailing website for online shopping in the U.S. (Nagrале, 2018). Microsoft Surface Pro was selected for the product provided in the stimuli because of its appropriate characteristics for both hedonic and utilitarian shopping orientations; Microsoft Surface Pro is well-known as having a touchscreen with tablet-to-laptop versatility. Previous research demonstrated that people often use laptops for utilitarian shopping orientation (i.e. laptop for work) and tablets for hedonic shopping orientation (i.e., tablet for entertainment) (Hayashi et al., 2012; Lu et al., 2016; Schwarz & Rupp, 2016).

3.2.1 Manipulation of message appeal of online customer reviews

To develop online customer reviews, two sets of standard online reviews were firstly developed referring to the real Amazon customer reviews. This approach was employed to rule out the alternative explanations of message credibility. It is known that the length, valence, and order of a message affect the cognition of readers and thus the perceived credibility and helpfulness of the message (Hogarth & Einhorn, 1992; Jones et al., 2004; Kaushik et al., 2018). Previous studies have found that emotional reviews often describe pleasant and gratified product experience, whereas rational reviews often describe product functionality and usefulness (Wu & Wang, 2011; Kim & Gupta, 2012). Several studies (e.g., Davidson et al., 2009; Kim & Gupta, 2011) have claimed that emotional messages can have emoticons and bold capital letters. However, emoticons and capital letters were not used for this study because such extremeness often convey low competence and low professionalism (Ashforth & Humphrey, 1995; Li et al., 2019). In this light, only several words (i.e., adjectives and nouns) of the standard reviews were

changed either into emotional or rational. For example, the emotional reviews contained the words *lovely*, *enjoyable*, and *like a feather*. In contrast, the rational reviews substituted the words *efficient*, *helpful*, and *1 pound*. As a result, two sets of online reviews (i.e. two emotional and two rational) were generated. The developed customer reviews were pretested to select the most appropriate reviews for the main study.

3.2.2 Manipulation of shopping orientation

It is known that research participants' shopping orientations can be manipulated using hypothetical shopping scenarios (Dhar & Wertenbroch, 2000; Roy & Ng, 2012). Based on the suggestions of the past literature (e.g., Overby & Lee, 2006; Roy & Ng, 2012), the shopping scenarios were developed using Amazon and Microsoft Surface Pro. Most of the words were identical except for the purpose of buying a laptop. The scenario in a hedonic shopping orientation condition emphasized shopping motivation as for entertainment, comprising emotional wants and needs. For example, the participants were asked to imagine that they want to buy a laptop mainly for hedonic purposes such as *playing games*, *listening to music*, and *watching movies*. On the other hand, the scenario in a utilitarian orientation condition emphasized the task-oriented purpose of the shopping, focusing on efficient purchasing and product attributes. The utilitarian shopping scenario stressed that the participants want to buy a laptop for working such as *writing reports*, *creating presentations*, and *attending virtual meetings*. The developed shopping scenarios were reviewed by researchers and final scenarios were the following:

*Imagine that you spend about 90% of the time on your laptop (**playing games, interacting with others through social media, listening to music, and watching movies**)*

vs. working on tasks for your job, such as writing reports, creating presentations, conducting data analysis, and attending virtual meetings) at home. Your old laptop is still functional, but because it is old, you have had several problems with it. As a result, you want to buy a new laptop to substitute the old one. Just then, you happen to see a 2-in-1 device that has features of both tablets and laptops at a reasonable price on Amazon.

3.3 Pretest

The purpose of the pretest was to select the most appropriate online customer reviews for the main study. One hundred and sixteen participants were randomly assigned to one out of four online reviews (i.e., two emotional and two rational reviews) through MTurk. After the participants read the reviews, they completed the questionnaire measuring perceived message appeal of, perceived credibility of, and attitudes toward the online reviews. First, perceived message appeal of online reviews was measured to check the manipulation through the items “How much do you agree that the message of this customer review uses an emotional appeal?” and “How much do you agree that the message of this customer review uses a rational appeal?” using a 7-point Likert scale (1 = Very Low to 7 = Very High). Second, previous studies (e.g., Fan & Miao, 2012; Jiménez & Mendoza, 2013) have confirmed that consumers show higher intentions to accept a review and to purchase the reviewed product when exposed to more credible reviews. Thus, perceived credibility of online reviews was measured to test if there is no difference between the two types of message appeal at a significance level of .05. Three items adapted from the past literature (Cheung et al., 2009; Qiu et al., 2012) were used to measure perceived credibility: “I think the online customer review is trustworthy”, “I

think the online customer review is reliable” and “I think the online customer review is credible” using a 7-point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree). Lastly, attitudes toward the reviews were measured with six items using the 7-point semantic differential scales. The sample items include “Not at all informative/Very informative”, “Not at all helpful/Very helpful”, and “Not at all useful/Very useful”.

The results of the pretest indicate that there were no statistically significant differences in perceived credibility and attitudes among the four online reviews. The participants exhibited the same level of perceived credibility and attitudes regardless of the review type. The mean differences between the two message appeals of online reviews were calculated using t-tests. There was no difference in perceived message appeal between the two sets of reviews at a significance level of .05. However, the first set of reviews had a larger difference between the perceptions of emotional and rational appeal than the second set ($D_1 = 1.2$, $D_2 = .98$). Thus, the first set of online customer reviews were chosen for the main study. To make the manipulation more successful, the phrase “Very light like (a feather /1 pound)” from the second set was added to the final reviews. The final version of reviews for the main study are the following:

*“I received this yesterday and really find it (**enjoyable and attractive** vs. **helpful and beneficial**) so far! It’s big, smooth, and fast.. (**Super lovely** vs. **Very efficient**). This is perfect for anyone who wants a convertible laptop and tablet that is not so expensive. This 2-in-1 laptop gives me so much more (**enjoy doing many entertaining things** vs. **capability doing many tasks so effectively**). Very light like (**a feather** vs. **1 pound**), display is (**super fantastic!** vs. **high-quality enough.**) I would recommend it.”*

3.4 Sample

Two hundred and fifty-two MTurk participants were recruited and rewarded with 70 cents. Both male and female adults in the U.S. participated in the study. Specific criteria of the participants were as follows: those who are (1) older than 18; (2) familiar with the online shopping environment; and (3) familiar with shopping using Amazon. Such criteria were established because this study explored the perception and behavioral intention of online shoppers, measuring cumulative customer satisfaction with Amazon. In other words, this study only recruited the participants who have experienced a series of transactions or service encounters from Amazon (Cronin & Taylor, 1994). The inclusion criteria were posted on the MTurk job post and participants self-screened before starting the survey. Also, questions asking experiences with Amazon were included at the end of the survey to ensure that the participants met the criteria. Four participants were excluded because they were not familiar with either the online shopping environment or shopping at Amazon.

It was appropriate to conduct an experimental study using an online survey platform because this study investigates the role of online reviews in e-commerce. Although many advantages of web-based experiments exist, there is a concern about unqualified data due to participants' low involvement. For example, there are a few workers who do not care about the quality of their responses as long as they are given compensation. Therefore, two methods for quality assurance were employed based on the suggestion of previous literature (Mason & Suri, 2012; Zhu & Carterette, 2010). First, asking a verifiable content-related question is one of the methods to ensure high-quality work (Mason & Suri, 2012). The participants were asked to answer the question "What

product was used for this study?” to assure the participants’ involvement. Eighteen participants who failed to indicate Microsoft Surface Pro were excluded. Second, bad responses can be filtered by looking at the patterns of responses (Zhu & Carterette, 2010). Three responses with very low-entropy patterns of response (e.g., always choosing one option) were eliminated. Based on the above specifications, a total sample of 227 remained for further analysis.

3.5 Procedure

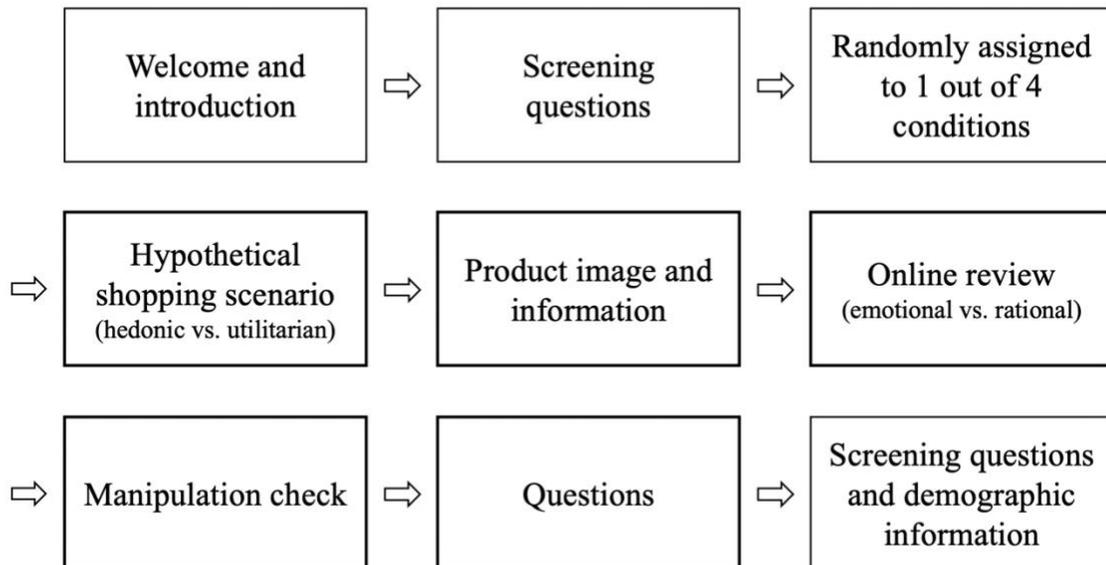
The participants were informed that this study is about perceptions of the online shopping environment and customer reviews. Before starting the study, the participants were told that they should be familiar with the online shopping environment and Amazon. Once the participants entered the main study, they were randomly assigned to one out of four conditions. A hypothetical shopping scenario was given to manipulate their shopping orientations according to hedonic or utilitarian shopping orientation conditions. After reading the scenario, the participants were provided with stimuli of a screenshot of the Amazon website. The screenshot included an image of Microsoft Surface Pro, product information, and an online customer review. The product image and information were identical across the four conditions. The identical image and information allowed us to rule out the effects of possible confounding factors, such as price, product attractiveness, and service options. Only online customer reviews were different according to emotional or rational review conditions.

After reading the customer reviews, the participants rated how much they agree that the message appeal of reviews is emotional and rational. The participants then

completed the questionnaire measuring perceived congruence, perceived relevance of information, cumulative satisfaction, overall perceived risk, and purchase intention of the reviewed product. Measurements of attitudes toward Microsoft and technology proficiency were also included. After answering the questions measuring the variables, the participants were asked again if they are familiar with the online shopping and Amazon to check if they are qualified participants. A verifiable content-related question “What product was used for this study?” was provided. Demographic information including sex, age, gender, and income was collected. Lastly, the participants filled out a suspicion probe and were provided a code to claim monetary compensation. The main survey can be found in Appendix D. Figure 6 presents the procedure of the main study.

Figure 6

Procedure of the Main Study



3.6 Instruments

This study involved five main variables and two control variables. As mentioned above, the two control variables are brand attitude toward Microsoft and technology proficiency. All measurement items for the main study were adopted from past literature and modified to fit the context of the study. It is known that multi-item scales clearly outperform single items in terms of predictive validity (Diamantopoulos et al., 2012). Thus, multi-item scales were employed for measuring the latent constructs. Each item was arranged as either a 7-point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree / 1 = Very Low to 7 = Very High) or a semantic differential scale.

To ensure successful manipulation, *the message appeal of customer review* was measured by the same items used in the pretest. The two items were developed based on the definitions of message appeal of review provided in the past literature (Kotler & Keller, 2008; Wu & Wang, 2011). *Perceived congruence* was measured using three items developed by Fleck and Quester (2007). Two instruments from Citrin (2001) and Wixom and Todd (2005) were added together to form a three-item measure of *Perceived relevance of information* (Cheung et al., 2008; Filieri & McLeay, 2014). The sample item includes “the information I get through this online customer review is appropriate for satisfying my shopping goal”. *Purchase intention* was measured with five items from a scale developed by Dodds et al. (1991) looking at the likelihood of purchasing a product. The scale has been widely used by researchers presenting a high internal reliability (e.g., .96, Wu & Wang, 2011). A three-item scale was used to measure *cumulative customer satisfaction* (Voss & Parasuraman, 2003; Seiders et al., 2005), including “I am completely satisfied with the Amazon shopping experience”. *Overall perceived risk* was

measured by three items incorporating the four dimensions of perceived risk: financial, performance, psychological and perceived time/convenience loss risk (Kohli, 1989; Jarvenpaa et al., 2000; Forsythe & Shi, 2003; Forsythe et al., 2006; Kim et al., 2008). The participants responded to the last item “How would you rate your overall perception of risk of purchasing a laptop from Amazon?” with a 7-point Likert scale (1 = Very Low to 7 = Very High). A 7-point semantic differential scale developed by Mitchell and Olson (1981) was employed to represent *brand attitude toward Microsoft*, looking at the participants’ positive or negative disposition towards a brand (Day, 1969; Jacoby & Chestnut, 1978). Lastly, the participants’ overall *technology proficiency* was measured with four items (Reynolds & Darden, 1971; Lassar et al., 2005) showing the participants’ internet or actualized innovativeness. Table 3 shows the measurement items and the original construct reliability. Table 7 provides a summary of the measurements used in the study.

Table 3

Measurement Scales and Their Reported Reliabilities

Constructs & Sources	Items	Reported Reliability
1. <i>Perceived congruence</i> (Fleck & Quester, 2007)	1. I am not surprised that this product (for my entertainment) has this customer value.	.89
	2. One would expect this product (for my entertainment) to have this customer review.	
	3. It was predictable that this product (for my entertainment) would have this customer review.	
	1 = Strongly Disagree to 7 = Strongly Agree	
	1. The information I get through this online customer review is relevant as it matches my	.84, .92

<p>2. <i>Perceived relevance of information</i> (Cheung et al., 2008; Citrin, 2001; Filieri & McLeay, 2014; Wixom & Todd, 2005)</p>	<p>shopping goal (i.e., a product purchase for my entertainment).</p> <p>2. The information I get through this online customer review is appropriate for satisfying my shopping goal (i.e., a product purchase for my entertainment).</p> <p>3. Given my shopping goal (i.e., a product purchase for my entertainment), the information I get through this online customer review is helpful.</p>	
1 = Strongly Disagree to 7 = Strongly Agree		
<p>3. <i>Purchase intention</i> (Dodds et al., 1991)</p>	<p>1. Given my shopping goal (i.e., a product purchase for my entertainment), the likelihood of purchasing this product is high.</p> <p>2. If I will go into buy a laptop for my entertainment, I would consider buying this product.</p> <p>3. Given my shopping goal (i.e., a product purchase for my entertainment), I would consider buying the product.</p> <p>4. Given my shopping goal (i.e., a product purchase for my entertainment), the probability that I would consider buying the product is high.</p> <p>5. Given my shopping goal (i.e., a product purchase for my entertainment), my willingness to buy the product is high.</p>	.96
1 = Strongly Disagree to 7 = Strongly Agree		
<p>4. <i>Cumulative customer satisfaction</i> (Seiders et al., 2005; Voss & Parasuraman, 2003)</p>	<p>1. I am pleased with the overall service at Amazon.</p> <p>2. Shopping at Amazon is a delightful experience.</p> <p>3. I am completely satisfied with the Amazon shopping experience.</p>	.90
1 = Strongly Disagree to 7 = Strongly Agree		
<p>5. <i>Overall perceived risk</i> (Forsythe et al., 2006; Jarvenpaa et al., 2000; Kim et al., 2008; Kohli, 1989)</p>	<p>1. Purchasing a laptop from Amazon would involve product risk (i.e., not working, defective product).</p> <p>2. Purchasing a laptop from Amazon would involve financial risk (i.e., fraud, hard to return).</p> <p>3. How would you rate your overall perception of risk of purchasing a laptop from Amazon?</p>	-
Item 1 & 2: 1 = Strongly Disagree to 7 = Strongly Agree Item 3: 1 = Very Low to 7 = Very High		

<p>6. <i>Brand attitude toward Microsoft</i> (Mitchell & Olson, 1981)</p>	<p>1. Positive / Negative 2. Good / Bad 3. Favorable / Unfavorable 4. Likable / Dislikable</p>	<p>-</p>
<p>A bipolar 7-point scale</p>		
<p>7. <i>Technology proficiency</i> (Lassar et al., 2005; Reynolds & Darden, 1971)</p>	<p>1. My friends and co-workers come to me more often than I go to them for information about the internet and/or web site(s). 2. I feel that I am generally regarded by my friends and co-workers as a good source of advice and/or information about the internet. 3. My friends and co-workers often ask my advice about the internet and/or particular website(s). 4. I sometimes influence the web site(s) that my friends and co-workers visit.</p>	<p>.93</p>
<p>1 = Strongly Disagree to 7 = Strongly Agree</p>		

Chapter 4. Results

This chapter presents the results of the study. The characteristics of the sample are firstly described, followed by testing statistical assumptions. The results of preliminary data analysis involving exploratory factor analysis and scale reliability are provided. After examining the effects of control variables and checking the manipulation, the results of hypothesis testing are described.

4.1 Sample Characteristics

After eliminating the unqualified data (see 3.4 for details), 227 out of 252 data were eligible for further analysis. First, as discussed above, the participants were excluded if they were not familiar with the online shopping environment or shopping at Amazon. Second, this study eliminated the data from the participants who failed to provide the right answer to the question “What product was used for this study?” Lastly, the data was eliminated if the participants always chose one option for the survey questions. Table 4 shows the descriptive statistics including sample frequency per condition and demographic information.

Table 4

Sample Characteristics

Characteristics		N	Percent
Sex	Male	129	56.8%
	Female	98	43.2%
Age	18-29	57	25.1%
	30-39	100	44.1%
	40-49	35	15.4%
	50-59	24	10.6%
	60+	11	4.8%

Ethnicity	Caucasian	145	63.9%
	American Indian or Alaska Native	3	1.3%
	Asian or Pacific Islander	30	13.2%
	Black or African American	32	14.1%
	Hispanic or Latino	14	6.2%
	Mixed or Others	3	1.3%
Annual Income	Less than \$25,000	43	18.9%
	\$25,000 - \$49,999	62	27.3%
	\$50,000 - \$74,999	49	21.6%
	\$75,000 - \$99,999	45	19.8%
	\$100,000 or more	28	12.3%
Shopping Orientation		Review type	
Hedonic	Emotional	61	52.1%
	Rational	56	47.9%
	Total		117
Utilitarian	Emotional	57	51.8%
	Rational	53	48.2%
	Total		110
Total	Emotional	118	52.0%
	Rational	109	48.0%
	Total		227

4.2 Statistical Assumption Testing

Normality, linearity, equal variance, and multicollinearity assumptions of linear regression were tested. The regression models used in this study were (a) a simple linear regression with perceived congruence as a predictor and perceived information relevance as a dependent variable and (b) a multiple regression with perceived information relevance, cumulative satisfaction, and perceived risk as predictors and purchase intention as a dependent variable.

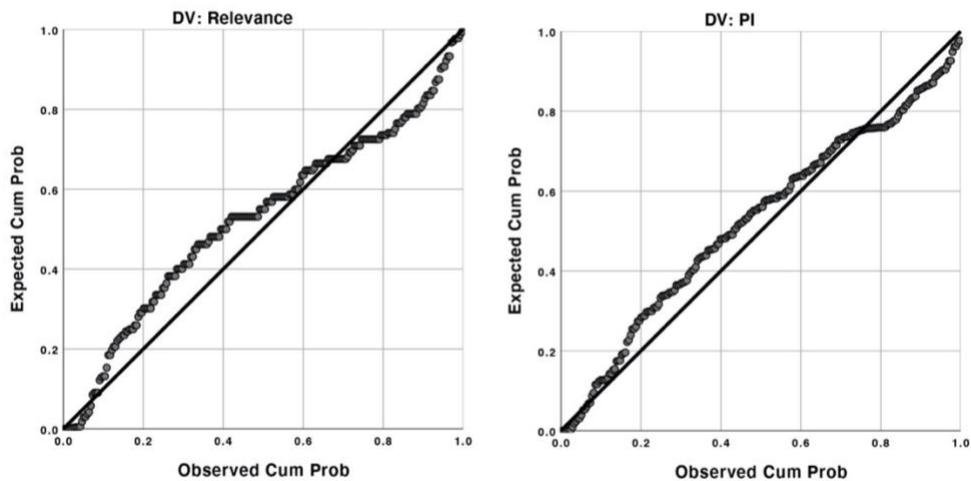
4.2.1 Normality

Normality was checked to make valid inferences from regressions. The residuals of the regression should follow a normal distribution (Weisberg, 2005). The normal

predicted-probability (P-P) plot showed that there were no drastic deviations as shown in Figure 7. Thus, the residuals were normally distributed.

Figure 7

Normal P-P Plot of Regression Standardized Residual

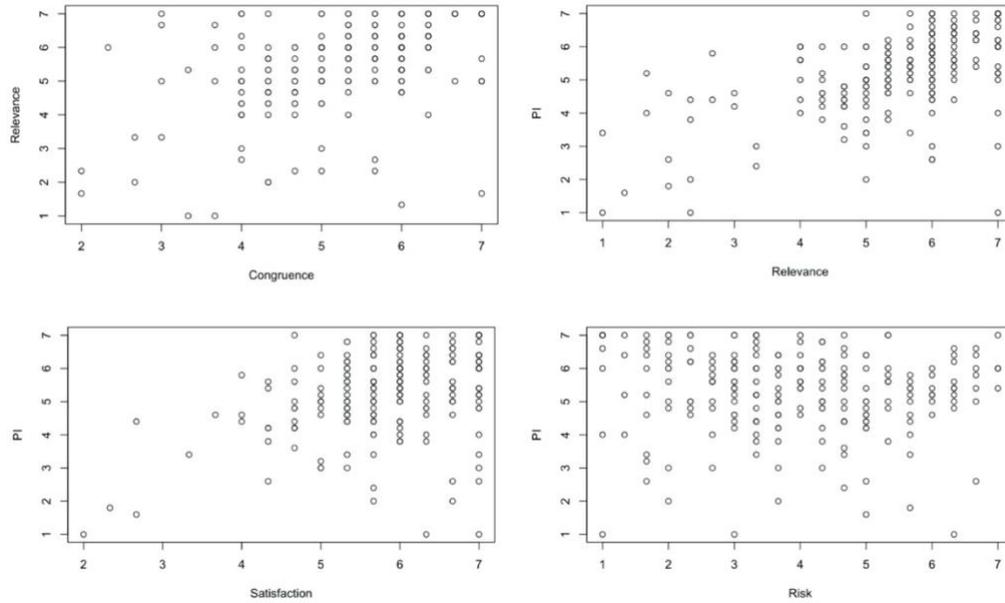


4.2.2 Linearity

To check whether the independent variables are linearly associated with the dependent variable (Weisberg, 2005), scatter plots with the predictors on x-axis and the dependent variables on y-axis were used as shown in Figure 8. Linearity was met except for perceived risk and purchase intention, suggesting that perceived risk is not linearly related to purchase intention. Overall, it was concluded that the data did not significantly violated the linearity assumption.

Figure 8

Scatter Plots for Linearity Assumption Check

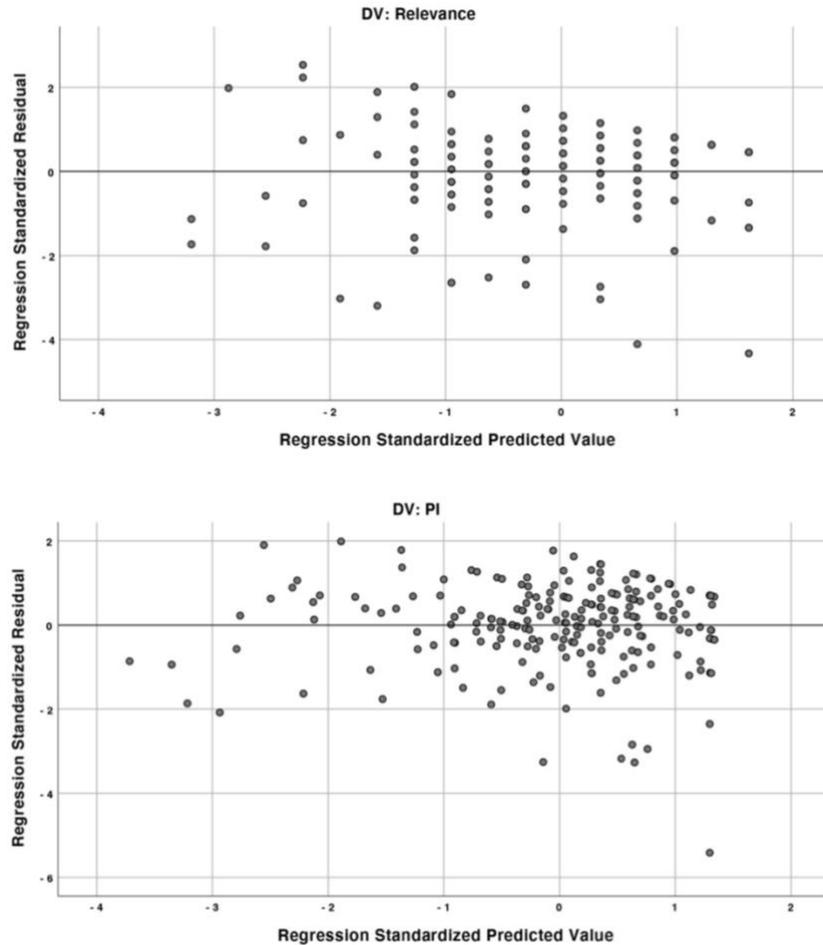


4.2.3 Equal variance

Homoscedasticity refers to the assumption of whether the residuals are equally distributed (Farrar & Glauber, 1967). The scatter plot of the residuals was used to assess the homoscedasticity assumption as shown in Figure 9. The points in the scatter plot had no significantly obvious pattern. Also, the points were equally distributed above and below zero on the x-axis and to the left and right of zero on the y-axis. Thus, the homoscedasticity assumption was not violated.

Figure 9

Residual Scatter Plots



4.2.4 Multicollinearity

To check the multicollinearity assumption, Pearson correlation coefficients and variance inflation factor (VIF) values were used as shown in Table 5. Although perceived satisfaction was correlated with perceived risk ($r = -.206$) and perceived information relevance ($r = .470$), the correlations were moderate. The VIF values should be below 10

to assure absence of multicollinearity (Alin, 2010; Mansfield & Helms, 1982). Thus, the multicollinearity assumption was not violated.

Table 5

Correlation Among Predictors and VIF Values

	Satisfaction	Risk	Relevance
Satisfaction	1	-.206**	.470**
Risk		1	-.127
Relevance			1
VIF	1.321	1.046	1.286

** Correlation is significant at the .01 level (two-tailed).

4.3 Preliminary Data Analysis

4.3.1 Exploratory factor analysis

The variables used in the study were perceived congruence, perceived relevance of information, purchase intention, cumulative customer satisfaction, and perceived risk. Two control variables included attitudes toward Microsoft and technology proficiency. To ensure the validity of the measurement scale, exploratory factor analysis was performed on the 25 items used in the main study. Principle component analysis with varimax rotation was used. Those factors with factor loadings greater than .4 were retained. The results extracted seven factors. Because the explained variance of the extracted first factor was 17.09%, which was less than 50% of the total variance, the data exhibited no serious problems in common method variances. The seven factors accounted for 81.824% of the total variance. Each of these seven factors had an eigenvalue greater than 1. Factor 1 was labeled purchase intention and included five items. Factor 2 was

labeled attitudes toward Microsoft and included four items. Factor 3 was labeled technology proficiency and included four items. Factor 4 was labeled perceived relevance of information and included three items. Factor 5 was labeled cumulative customer satisfaction and included three items. Factor 6 was labeled perceived congruence and included three items. Factor 7 was labeled perceived risk and included three items. Table 6 shows the results of exploratory factor analysis.

Table 6
Exploratory Factor Analysis

Item	Factor						
	1	2	3	4	5	6	7
Purchase intention 1	.80						
Purchase intention 2	.87						
Purchase intention 3	.86						
Purchase intention 4	.86						
Purchase intention 5	.84						
Attitude toward Microsoft 1		.89					
Attitude toward Microsoft 2		.90					
Attitude toward Microsoft 3		.88					
Attitude toward Microsoft 4		.86					
Technology proficiency 1			.91				
Technology proficiency 2			.91				
Technology proficiency 3			.90				
Technology proficiency 4			.86				
Information relevance 1				.79			
Information relevance 2				.82			
Information relevance 3				.86			
Cumulative satisfaction 1					.80		
Cumulative satisfaction 2					.82		
Cumulative satisfaction 3					.86		
Perceived congruence 1						.83	
Perceived congruence 2						.82	
Perceived congruence 3						.78	

Perceived risk 1								.84
Perceived risk 2								.89
Perceived risk 3								.83
Eigenvalue	4.27	3.47	3.34	2.43	2.40	2.28	2.26	
% of variance extracted	17.09	13.89	13.36	9.72	9.62	9.10	9.04	
Cumulative %								81.82%

4.3.2 Scale reliability

Since this study used multi-item scales to measure the latent variables, it was essential to check their internal consistency (Tenenhaus et al., 2005). To analyze scale reliability, this study used Cronbach's α coefficient. The results showed that the items in each scale had good internal consistency, because all α coefficients exceeded the generally accepted threshold of .7 (Nunnally, 1994; Saunders et al., 2012). The Cronbach's α of each variable was between .83 and .95. Table 7 presents the summary of measurements and the results of reliability testing.

Table 7

Summary of Measurements and Scale Reliability

Scale	M	SD	Cronbach's α
Perceived congruence	5.32	1.04	.83
Perceived relevance of information	5.52	1.26	.92
Purchase intention	5.31	1.24	.95
Cumulative satisfaction	5.87	.92	.86
Perceived risk	3.91	1.55	.83
Attitude toward Microsoft	5.78	1.15	.94
Technology proficiency	4.91	1.36	.93

4.4 Manipulation Check

Two sample t-tests were conducted to check the manipulation of message appeals of online reviews. There were significant differences between perceived message appeals of the two types of reviews. The participants perceived the emotional review as more emotional than the rational review (Perception of emotional appeal: $M_{\text{emotional review}} = 5.09$, $M_{\text{rational review}} = 3.95$, $t = 6.00$, $p < .001$). Also, the participants perceived the rational review as more rational than the emotional review (Perception of rational appeal: $M_{\text{emotional review}} = 4.86$, $M_{\text{rational review}} = 5.62$, $t = -4.96$, $p < .001$). Thus, the manipulation of message appeals of online reviews was successful.

4.5 Control Variables

To test the effects of control variables, a multiple regression with attitude toward Microsoft and technology proficiency as predictors against purchase intention was performed. No significant effect of technology proficiency was found. However, attitudes toward Microsoft significantly predicted purchase intention ($\beta = .42$, $t(224) = 6.76$, $p < .001$). The participants who had positive attitudes toward Microsoft were more likely to purchase the reviewed product Microsoft Surface Pro. This result suggested that it was appropriate to select attitude toward Microsoft as a control variable. Thus, attitude toward Microsoft was further controlled when predicting purchase intention.

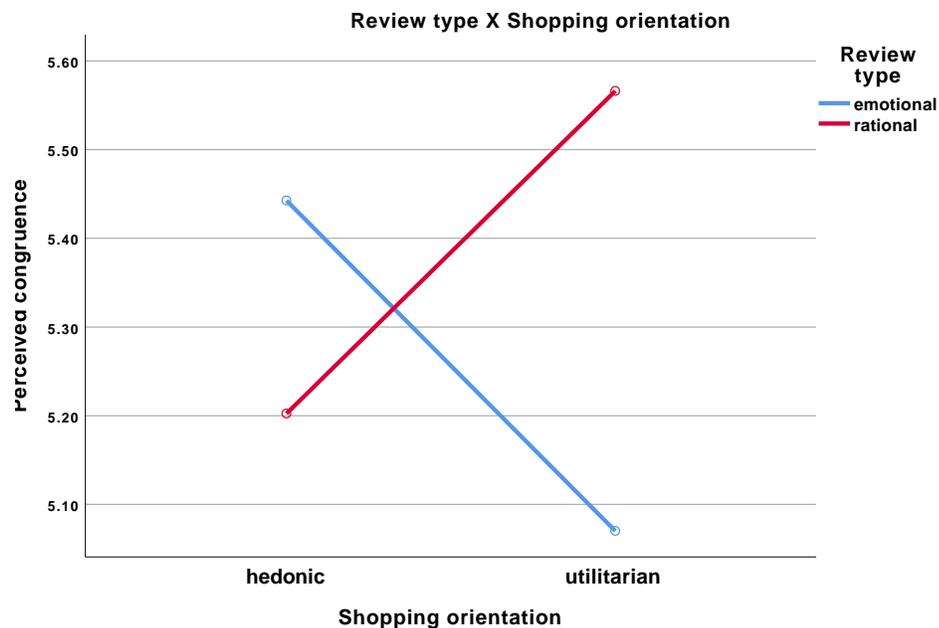
4.6 Hypothesis Testing

To test hypothesis 1, an analysis of variance (ANOVA) was performed with perceived congruence as a dependent variable and shopping orientation and review type

as independent variables. The results reveal that there were no main effects of shopping orientation and review type. However, there was a statistically significant interaction between shopping orientation and review type on perceived congruence. ($F(1, 223) = 7.275, p < .01$). When shopping orientation was hedonic, exposure to emotional online customer review ($M = 5.44$) resulted in a higher level of perceived congruence than rational review ($M = 5.20$). In contrast, when shopping orientation was utilitarian, exposure to rational online customer review ($M = 5.57$) led to a higher level of perceived congruence than emotional review ($M = 5.07$) (shown in Figure 10). Thus, H1 was supported.

Figure 10

The Interaction Effect of Review Type and Shopping Orientation on Congruence



Next, simple linear regression was conducted to test H2. Perceived congruence was entered as a predictor and perceived relevance of information was entered as a dependent variable. The results indicated that congruence perception was positively associated with perceived relevance of information ($\beta = .48, t(225) = 8.11, p < .001$). When the participants perceived a higher level of congruence between shopping orientation and online review message appeal, they considered the review as more applicable and helpful for their needs. Thus, H2 was supported.

To test H3, H5a, and H6a, a hierarchical multiple regression was conducted with attitude toward Microsoft as a control variable (see Table 8). Perceived relevance of information, cumulative satisfaction, and perceived risk were entered as predictors. Purchase intention of the reviewed product was entered as a dependent variable. There was a significant positive relationship between perceived information relevance and purchase intention ($\beta = .47, t(222) = 7.93, p < .001$). As predicted, the participants who perceived a higher information relevance were more willing to purchase the reviewed product. Thus, H3 was supported. Cumulative satisfaction significantly predicted purchase intention ($\beta = .12, t(222) = 2.01, p < .05$), suggesting that H5a was supported. The participants who had been satisfied with Amazon were more likely to purchase the product. However, perceived risk did not predict purchase intention at a significance level .05. Thus, H6a was not supported.

Table 8*Results of Multiple Regression Predicting Purchase Intention of the Reviewed Product*

Predictor	β	SE	<i>t</i>
Perceived relevance	.47***	.06	7.93
Cumulative satisfaction	.12*	.08	2.01
Overall perceived risk	-.01	.04	-.14
<i>R</i> ²			.42
<i>F</i>			40.85***

* $p < .05$, ** $p < .01$, *** $p < .001$

H4 proposed that perceived information relevance mediates the relationship between perceived congruence and purchase intention. To test the mediation, Baron and Kenny's (1986) multiple regression procedure was used. First, perceived congruence predicted the outcome variable purchase intention ($\beta = .43$, $t(225) = 7.23$, $p < .001$). Second, perceived information relevance qualified as a mediator, because perceived congruence predicted perceived information relevance ($\beta = .48$, $t(225) = 8.11$, $p < .001$) and perceived information relevance predicted purchase intention ($\beta = .61$, $t(225) = 11.40$, $p < .001$). Third, a multiple regression was performed with perceived congruence and information relevance predicting purchase intention. In the last model, both perceived congruence and information relevance significantly predicted purchase intention (Congruence: $\beta = .19$, $t(224) = 3.20$, $p < .01$; Information relevance: $\beta = .52$, $t(224) = 8.71$, $p < .001$). The results showed that perceived information relevance partially mediated the relationship between perceived appeal-orientation congruence and purchase intention. Thus, H4 was supported.

H5b and H6b proposed that cumulative satisfaction and perceived risk moderate the relationship between perceived information relevance and purchase

intention. Since the independent variables and moderators are continuous, a hierarchical multiple regression was performed. In the first step, purchase intention was regressed on the three centered independent variables (i.e., perceived relevance, risk, and satisfaction). Next, the two-factor interaction terms were added as predictors against purchase intention (Dawson, 2014). The latter model with the interaction terms accounted for significantly more variance than the first model ($\Delta R^2 = .02, p < .05$) indicating that there is significant moderation effect. The main effects of perceived relevance ($\beta = 1.22, t(221) = 3.23, p = .001$) and cumulative satisfaction ($\beta = .57, t(221) = 2.87, p < .01$) on purchase intention was significant. The satisfaction \times perceived relevance interaction was significant in the opposite direction ($\beta = -.92, t(221) = -2.28, p < .05$), suggesting that cumulative satisfaction weakened the effect of perceived relevance on purchase intention. The participants were more likely to purchase the product that had a relevant review if they had been less (vs. more) satisfied with the e-tailer (i.e., Amazon). Thus, H5b was not supported. On the other hand, the perceived risk \times perceived relevance interaction was not significant. Thus, H6b predicting the moderating effect of perceived risk was not supported. Table 9 shows the results of moderation analysis. The summary of hypothesis testing is presented in Table 10.

Table 9*Moderated Regression Analysis*

Predictor	β	SE	<i>t</i>
Perceived relevance	1.22***	.37	3.23
Cumulative satisfaction	.57**	.26	2.87
Overall perceived risk	.09	.22	.31
Satisfaction \times Relevance	-.92*	.05	-2.28
Risk \times Relevance	-.08	.04	-.26
R ² / sig.			.402 / .045
Δ R ² / sig.			.017 / .045

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 10*Summary of Hypothesis Testing*

Hypothesis	Result
H1 Shopping orientation \times Review type \rightarrow Perceived congruence	Supported
H2 Perceived congruence \rightarrow Perceived relevance of information	Supported
H3 Perceived relevance of information \rightarrow Purchase intention	Supported
H4 Mediating role of perceived relevance of information	Supported
H5a Cumulative satisfaction \rightarrow Purchase intention	Supported
H5b Moderating role of cumulative satisfaction (strengthening)	Not supported
H6a Perceived risk \rightarrow Purchase intention	Not supported
H6b Moderating role of perceived risk (weakening)	Not supported

Chapter 5. Discussion and Implications

The purpose of this study was to provide a better understanding of how message appeals of online customer reviews function differently depending on shopping orientation. Drawing on the literature on congruence, this study proposed that there will be a congruence effect between consumers' shopping orientation and message appeal of online customer reviews. An empirical experimental study was conducted to test whether purchase intention for a reviewed product is affected by congruence perception and perceived information relevance. Perceived relevance of information was proposed as a key variable that explains why and how review-orientation congruence is related to consumers' intention to purchase a reviewed product. Moreover, the role of cumulative customer satisfaction and overall perceived risk was examined in directly affecting purchase intention as well as moderating the relationship between perceived information relevance and purchase intention. The following section discusses the findings of the study and provides implications for academic researchers and practitioners. The limitation of the current study follows with recommendations for future research.

5.1 Summary of the Findings

The main objective of the study was to examine the congruence effect between shopping orientation and message appeal of online customer reviews. As expected, the participants who had a hedonic shopping orientation perceived a higher congruence if they viewed an emotional review than a rational review. On the other hand, the participants with a utilitarian shopping orientation perceived a higher congruence if they viewed a rational review than an emotional review. The congruence perception was

significantly positively associated with purchase intention; participants were more willing to buy the reviewed product if they had a high congruence perception from the online customer review.

The key finding of this experiment was that the effect of congruence perception on purchase intention can be accounted for by perceived information relevance from the online review. Consistent with the hypotheses, a congruence perception of shopping orientation and message appeal of online reviews positively affected perceived relevance of information, and in turn, purchase intention of the reviewed product. The results of Baron and Kenny's (1986) analysis confirmed a partial mediating role of perceived information relevance; perceived relevance of information ($\beta = .61$) predicted purchase intention more effectively than perceived congruence did ($\beta = .43$). The participants who perceived a high level of congruence from an online review evaluated the review as more appropriate and helpful for their needs and situation, and thus, were more likely to purchase the reviewed product.

This study also investigated whether cumulative customer satisfaction and overall perceived risk affect purchase intention both directly and indirectly. First, cumulative satisfaction with an e-tailer significantly positively affected purchase intention. Consistent with the literature (e.g., Ha & Perks, 2005; Lien et al., 2017), the participants were more willing to purchase a product from an e-tailer if they had been more (vs. less) satisfied with a product and service offering of the e-tailer over time. However, our data suggest that cumulative satisfaction did not positively moderate the effect of perceived information relevance on purchase intention. Rather, cumulative satisfaction weakened the effect. The participants in this study were more willing to purchase the product with

an applicable and helpful review if they had been less (vs. more) satisfied with Amazon. It is possible that consumers who had not been highly satisfied with an e-tailer are more likely to consider the relevance of a review important than those who had been highly satisfied. In other words, other consumers' opinions (i.e., reviews) can affect the decision-making process of less-satisfied-consumers more than more-satisfied consumers. This is because more-satisfied consumers are likely to build their behavioral intention based on other factors. For example, Garbarino and Johnson (1999) argued that consumers with a strong relationship use trust and commitment as more important than those with a weak relationship. Although the hypothesis was not supported, this finding shows that a persuasive role of information relevance of an online review is stronger for consumers who had not been satisfied with the e-tailer over time.

Second, this study proposed that overall perceived risk of shopping at an e-tailer will negatively affect purchase intention directly as well as negatively moderate the relationship between perceived relevance of information and purchase intention. However, both direct and indirect effects of perceived risk were found to be insignificant. This finding may be attributable to that Amazon has consistently offered appropriate service recovery attempts when negative outcomes such as service failure from transactions occurred. Indeed, Amazon is known to provide high-quality customer services that exceed user expectations (Sharma, 2020), which can decrease the overall level of perceived risk of shopping at Amazon. Also, there is a possibility of uninvestigated variables that affect the effects of perceived risk on purchase intention at a certain e-tailer. For example, Kim and Lennon (2013) found that perceived risk can affect consumers' emotions toward an online retailer and such emotion sequentially can affect

purchase intention. Even though consumers perceive a risk of shopping at a certain e-tailer, it is possible that the perceived risk does not necessarily affect their emotions and purchase intention.

5.2 Implications

5.2.1 Theoretical implications

This study provides several theoretical implications. First, this study contributes to the literature of eWOM and online reviews by investigating how different message appeals of online customer reviews can be useful depending on consumers' shopping orientation. A persuasive role of online customer reviews was explored from the perspective of congruence. Consumers' congruence perception is dependent on both message appeal of online reviews (emotional vs. rational) and shopping orientation (hedonic vs. utilitarian). More specifically, hedonic orientation is related to potential entertainment value of and enjoyment from shopping experience and utilitarian orientation highlights efficiency for task-related, practical, and rational goals (Babin et al., 1994; Batra & Ahtola, 1991; Overby & Lee, 2016). In this light, the former was deemed more congruent with emotional reviews while the latter was more congruent with rational reviews. Thus, this study extends the findings of the previous studies on the persuasive role of online customer reviews.

Second, this study helps advance the theoretical knowledge of information relevance and provide an insight into other studies examining congruence effects of online reviews (e.g. Huang et al., 2013). Perceived relevance of information was found to explain the mechanism under which congruence effects of online customer reviews on

purchase intention occur. Although the mediating role is partial, perceived relevance of information was more effective than congruence perception to predict purchase intention. Also, the effect of perceived information relevance on purchase intention was stronger for the participants who had a low (vs. high) cumulative satisfaction with Amazon. This finding shows that perceived information relevance of online reviews can be a strong predictor of purchase intention, over cumulative satisfaction with an e-tailer.

Third, the present study offers a better understanding of message appeals of online customer reviews. Most research studies on the message appeal of online customer reviews have manipulated the message appeals by making a distinctive difference between emotional and rational reviews (e.g., Park & Lee, 2008; Wu & Wang, 2011). Standard reviews were rarely developed, and overall contents of the emotional and rational reviews were less comparable, and thus consumers' perception of the reviews can be significantly different between the two types. Such differences include perceived overall quality and credibility of the reviews (Jones et al., 2004; Kaushik et al., 2018). For example, extreme expressions such as emoticons and capital letters in online reviews result in different levels of perceived professionalism (Ashforth & Humphrey, 1995; Li et al., 2019). As a result, since participants can perceive rational reviews as more credible, it is possible that the different perceptions can hinder efficient investigation of the role of the message appeal of reviews (Wu & Wang, 2011).

Lastly, the findings of this study advance the knowledge of online shopping usage for hedonic and utilitarian values by reflecting the persuasive role of emotional and rational reviews. As discussed above, previous studies have generated contradictory findings about the association between online shopping and shopping orientation. For

example, different findings have existed on whether (a) one of the utilitarian and hedonic orientations is more prevalent than the other and (b) consumers consider utilitarian aspects of consumption more than hedonic aspects in the online shopping environment (e.g., Overby & Lee, 2006; Scarpi, 2012; Shang et al, 2005; To et al., 2007). The current study demonstrated that when shopping orientation is hedonic (vs. utilitarian), emotional (vs. rational) reviews lead to a high level of perceived congruence and purchase intention. Thus, this study suggests that consumers engage in online shopping behavior with either hedonic or utilitarian orientation, and consumers evaluate online information (e.g., reviews) differently depending on their own predisposition, consistent with some previous studies (e.g., Childers et al., 2001; Scarpi, 2012; Wang et al., 2011).

5.2.2 Managerial implications

The findings of the current study offer actionable guidelines to practitioners. First, marketers can benefit from this study in a way of utilizing the specific message appeal of customer reviews. Kim and Gupta (2012) suggested that marketers can encourage a certain type of customer review by providing tools in a non-offensive manner. For example, providing an option to use emoticons to online reviewers can help them to express their emotions more (Kim & Gupta, 2012). Huang et al. (2013) proposed that website designers can develop a design algorithm that incorporates the content of reviews and product types to enhance more efficient consumer judgment such as review-ranking systems. Similarly, Amazon makes customers to rate for three words that are related to the characteristics of their purchased items. For example, the words provided for an automatic pencil review include *easy to hold*, *weight distribution*, and *ergonomic*,

whereas the words for a reed diffuser review include *scent*, *longevity*, and *giftable*. Thus, it would be advantageous for marketers to understand the primary shopping orientation for their products and/or services and establish a tailored strategy to encourage a specific message appeal of online customer reviews. In this way, marketers can develop ways to heighten other consumers' perception of congruence and information relevance.

The key finding is that perceived relevance of information explains the positive effect of congruence perception on purchase intention. It is recommended that marketers find a way to remind consumers that online reviews are relevant to their shopping goals. For example, a simple question "*Is this review helpful?*" or "*Is this information what you are looking for?*" can facilitate consumers to perceive a higher level of information relevance from the online reviews. Another way to boost perceived relevance of information is the usage of a filter system. For example, Sephora maintains the filter system where consumers can choose specific information from customer reviews to read. Consumers can refer to the kind of information they are looking for by selecting their own eye color, hair color, skin tone, skin type, and age range. If consumers read the exact or customized reviews that they wanted to, they are more likely to perceive a high level of information relevance from the review, ultimately leading to the formation of high purchase intention. In addition, finding ways to enhance perceived information relevance is especially important because it is also beneficial for consumers who had not had a high level of satisfaction with the e-tailer.

5.3 Limitations and Future Research

Despite the findings of this study provide implications for researchers and marketers, the current study has limitations that offer opportunities for future research. Four directions are presented that offer particularly fruitful avenues to extend the current work.

First, this study only investigated the effect of positive online reviews on consumers' perceptions and purchase intentions. Previous studies have examined the role of review valence and generated mixed findings (e.g., Jeong & Koo, 2015; Kusumasondjaja et al., 2012; Purnawirawan et al., 2015; Qiu et al., 2012). For example, Berger et al. (2010) found that negative reviews can increase purchase likelihood and sales if the reviewed product is relatively unknown. Sen and Lerman (2007) demonstrated that consumers are likely to consider negative reviews more useful than positive reviews for utilitarian products than for hedonic products, because consumers' attributions about the motivations of the reviewer mediate the effect of this moderation on attitude towards the review. Do consumers evaluate positive and negative online reviews equally in terms of congruence and information relevance perception? Future studies can replicate the current study using both positive and negative online reviews and find the differences in the persuasive roles.

Second, this study was conducted in the context of a high-priced, technology product: Microsoft Surface Pro. Even though the congruence effect between shopping orientation and message appeal of online reviews were confirmed, it is possible that the product used in the experiment emphasized utilitarian value in nature. This possibility of utilitarian value can explain the difference in perceived congruence in this study; the participants reported the highest congruence perception when a rational review was given

in utilitarian orientation ($M = 5.57$), as shown in Figure 10. In the same congruence condition, perceived congruence was lower when an emotional review was given for hedonic orientation ($M = 5.44$). In contrast, in the incongruence condition, the congruence perception was lower when an emotional review was given for utilitarian orientation ($M = 5.07$) than lower when a rational review was given for hedonic orientation ($M = 5.20$). Thus, it would be beneficial for future researchers to examine the orientation-review congruence effect in other contexts that are mainly categorized as being hedonic (e.g., perfume and luxury consumption).

Third, the results indicate that cumulative customer satisfaction positively affects purchase intention. However, contrary to the expectation, cumulative satisfaction weakens the effect of information relevance perception on purchase intention. The participants were more intended to purchase the product that had a relevant review if they had been less (vs. more) satisfied with the e-tailer. This finding provides a possibility of other factors that play a role for consumers who had evaluated an e-tailer positively. Therefore, future studies can explore additional variables that affect the moderating effect of cumulative satisfaction on the relationship between perceived information relevance and purchase intention. Furthermore, the direct and indirect effects of perceived risk on purchase intention were found to be insignificant. As discussed above, it is possible that risk perception may not necessarily decrease the likelihood of purchasing a product at certain retailers for uninvestigated reasons. Still, the question remains regarding when and why perceived risk does not have a significant effect on purchase intention. Thus, it would be noteworthy if future studies can unveil the boundary conditions and mechanisms of the effect of perceived risk.

Fourth, this study developed the shopping scenarios to manipulate the participants' shopping orientations based on the literature on shopping orientation and values. However, it could have been more convincing if the manipulation of shopping orientation was checked. It would be beneficial to test whether the words in each orientation scenario (e.g., "listening to music" for hedonic orientation and "creating presentations" for utilitarian orientation) lead to different perceptions. In addition, future researchers can explore how consumers' dispositional shopping orientations affect the effectiveness of each review type.

Lastly, although this study measured the variables using well-established instruments drawn from the literature, it is possible that some parts of the variables can be further explained using other instruments. For example, as mentioned above, information relevance includes five dimensions: topicality, novelty, reliability, understandability, and scope (Grice, 1989; Xu & Chen, 2006). In this study, perceived information relevance was measured using three items. One could argue that more items could have been used to explain the five dimensions of information relevance. Thus, future research can replicate the current study using different measurements for the variables.

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Appendix A

Shopping Scenario (Hedonic Shopping Orientation)

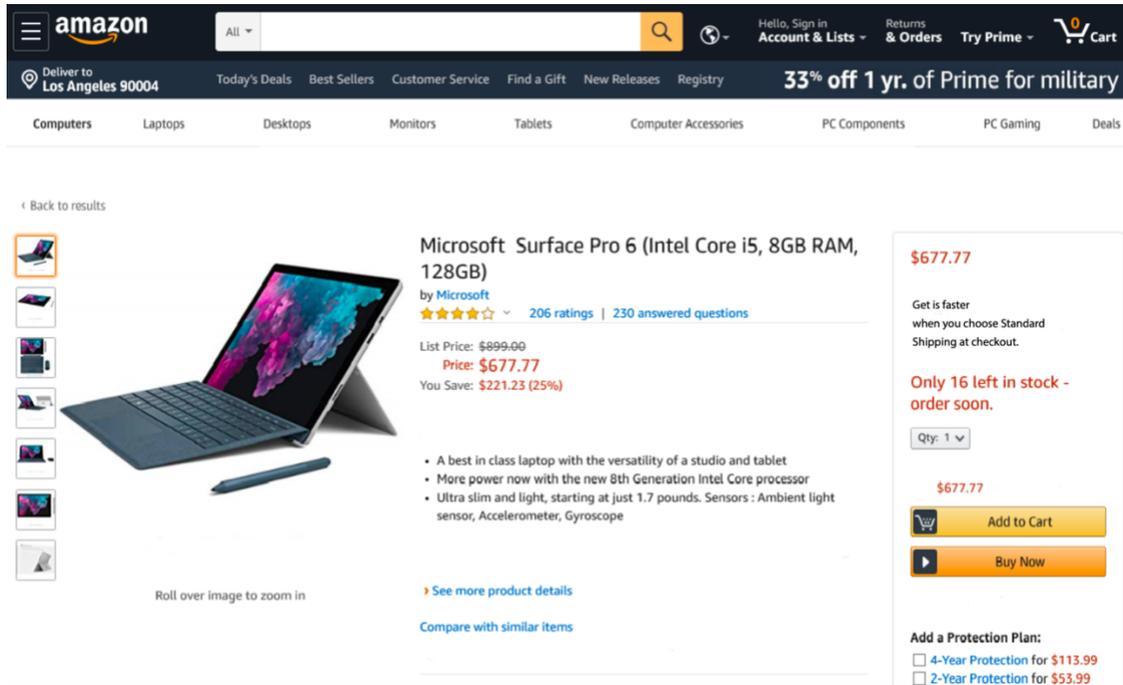
Imagine that you spend about 90% of the time on your laptop playing games, interacting with others through social media, listening to music, and watching movies at home. Your old laptop is still functional, but because it is old, you have had several problems with it. As a result, you want to buy a new laptop to substitute the old one. Just then, you happen to see a 2-in-1 device that has features of both tablets and laptops at a reasonable price on Amazon.

Shopping Scenario (Utilitarian Shopping Orientation)

Imagine that you spend about 90% of the time on your laptop working on tasks for your job, such as writing reports, creating presentations, conducting data analysis, and attending virtual meetings at home. Your old laptop computer is still functional, but because it is old, you have had several problems with it. As a result, you want to buy a new laptop to substitute the old one. Just then, you happen to see a 2-in-1 device that has features of both tablets and laptops at a reasonable price on Amazon.

Appendix B

Product Image and Information



The screenshot displays the Amazon product page for the Microsoft Surface Pro 6. The header includes the Amazon logo, a search bar, and navigation links. A promotional banner at the top right offers a 33% discount on Prime for military members. The product title is "Microsoft Surface Pro 6 (Intel Core i5, 8GB RAM, 128GB)". The price is listed as \$677.77, with a list price of \$899.00 crossed out. The page also features a "Back to results" link, a gallery of product images, a list of key features, and purchase buttons for "Add to Cart" and "Buy Now". A "Protection Plan" section is visible at the bottom right.

amazon

Deliver to Los Angeles 90004

Today's Deals Best Sellers Customer Service Find a Gift New Releases Registry

33% off 1 yr. of Prime for military

Computers Laptops Desktops Monitors Tablets Computer Accessories PC Components PC Gaming Deals

← Back to results



Microsoft Surface Pro 6 (Intel Core i5, 8GB RAM, 128GB)

by Microsoft

★★★★☆ 206 ratings | 230 answered questions

List Price: ~~\$899.00~~
Price: **\$677.77**
You Save: **\$221.23 (25%)**

- A best in class laptop with the versatility of a studio and tablet
- More power now with the new 8th Generation Intel Core processor
- Ultra slim and light, starting at just 1.7 pounds. Sensors : Ambient light sensor, Accelerometer, Gyroscope

Roll over image to zoom in

▶ See more product details

Compare with similar items

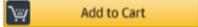
\$677.77

Get is faster when you choose Standard Shipping at checkout.

Only 16 left in stock - order soon.

Qty: 1

\$677.77

 Add to Cart

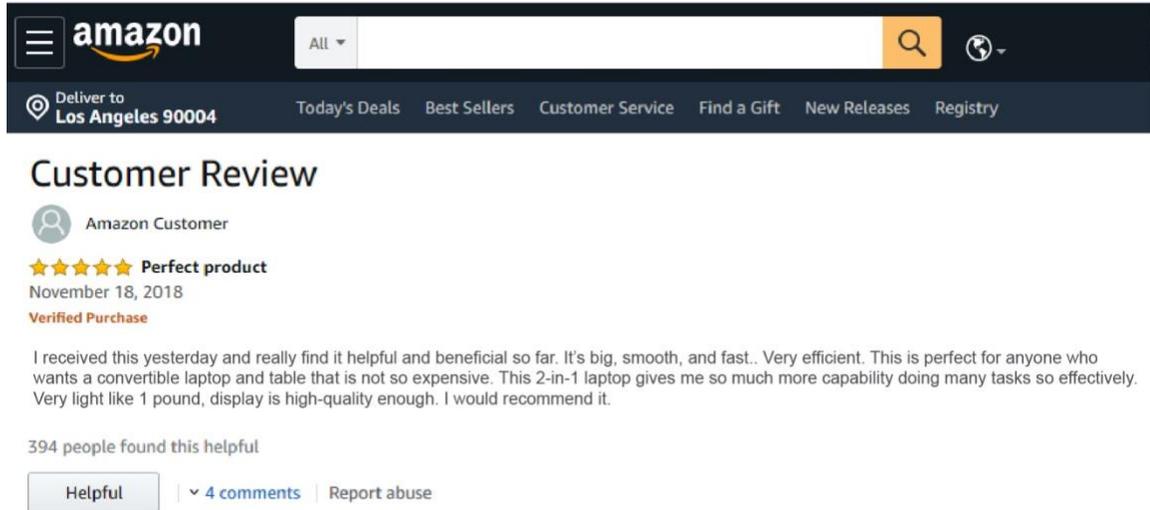
 Buy Now

Add a Protection Plan:

- 4-Year Protection for **\$113.99**
- 2-Year Protection for **\$53.99**

Appendix C

Online Customer Review (Rational Message Appeal)



The screenshot shows the Amazon website interface. At the top, there is a navigation bar with the Amazon logo, a search bar, and a delivery location of Los Angeles 90004. Below the navigation bar, the main content area features a 'Customer Review' section. The review is from an 'Amazon Customer' and is a 'Verified Purchase' with a 5-star rating. The review text describes the product as helpful and beneficial, mentioning its size, smoothness, and speed. It also notes that the product is perfect for those who want a convertible laptop and table that is not too expensive. The review is dated November 18, 2018, and has been found helpful by 394 people. There are buttons for 'Helpful', '4 comments', and 'Report abuse'.

amazon

Deliver to Los Angeles 90004

Today's Deals Best Sellers Customer Service Find a Gift New Releases Registry

Customer Review

Amazon Customer

★★★★★ Perfect product

November 18, 2018

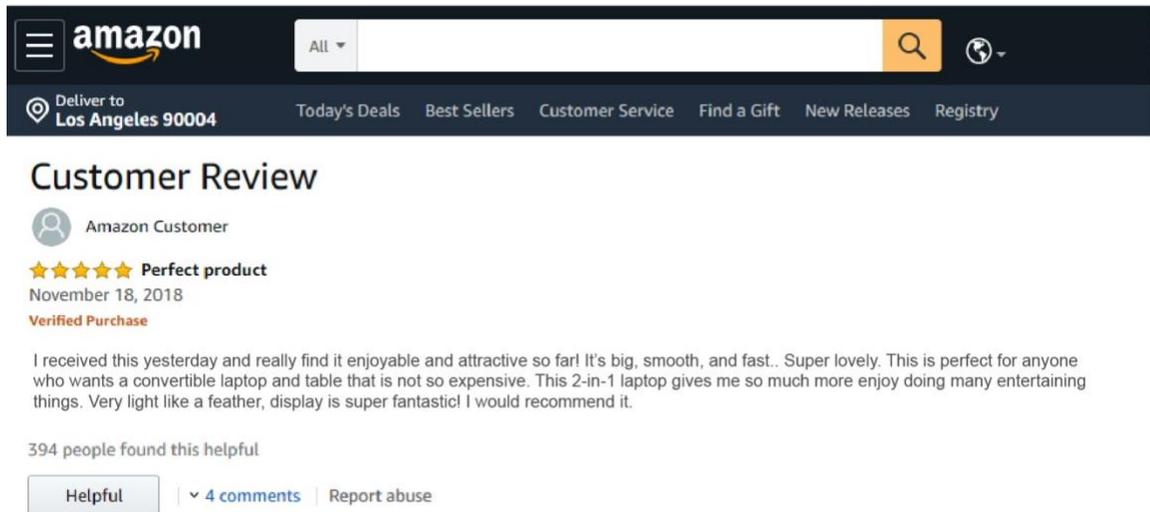
Verified Purchase

I received this yesterday and really find it helpful and beneficial so far. It's big, smooth, and fast.. Very efficient. This is perfect for anyone who wants a convertible laptop and table that is not so expensive. This 2-in-1 laptop gives me so much more capability doing many tasks so effectively. Very light like 1 pound, display is high-quality enough. I would recommend it.

394 people found this helpful

Helpful | 4 comments | Report abuse

Online Customer Review (Emotional Message Appeal)



The screenshot shows the Amazon website interface. At the top, there is a navigation bar with the Amazon logo, a search bar, and a delivery location of Los Angeles 90004. Below the navigation bar, the main content area features a 'Customer Review' section. The review is from an 'Amazon Customer' and is a 'Verified Purchase' with a 5-star rating. The review text describes the product as enjoyable and attractive, mentioning its size, smoothness, and speed. It also notes that the product is perfect for those who want a convertible laptop and table that is not too expensive. The review is dated November 18, 2018, and has been found helpful by 394 people. There are buttons for 'Helpful', '4 comments', and 'Report abuse'.

amazon

Deliver to Los Angeles 90004

Today's Deals Best Sellers Customer Service Find a Gift New Releases Registry

Customer Review

Amazon Customer

★★★★★ Perfect product

November 18, 2018

Verified Purchase

I received this yesterday and really find it enjoyable and attractive so far! It's big, smooth, and fast.. Super lovely. This is perfect for anyone who wants a convertible laptop and table that is not so expensive. This 2-in-1 laptop gives me so much more enjoy doing many entertaining things. Very light like a feather, display is super fantastic! I would recommend it.

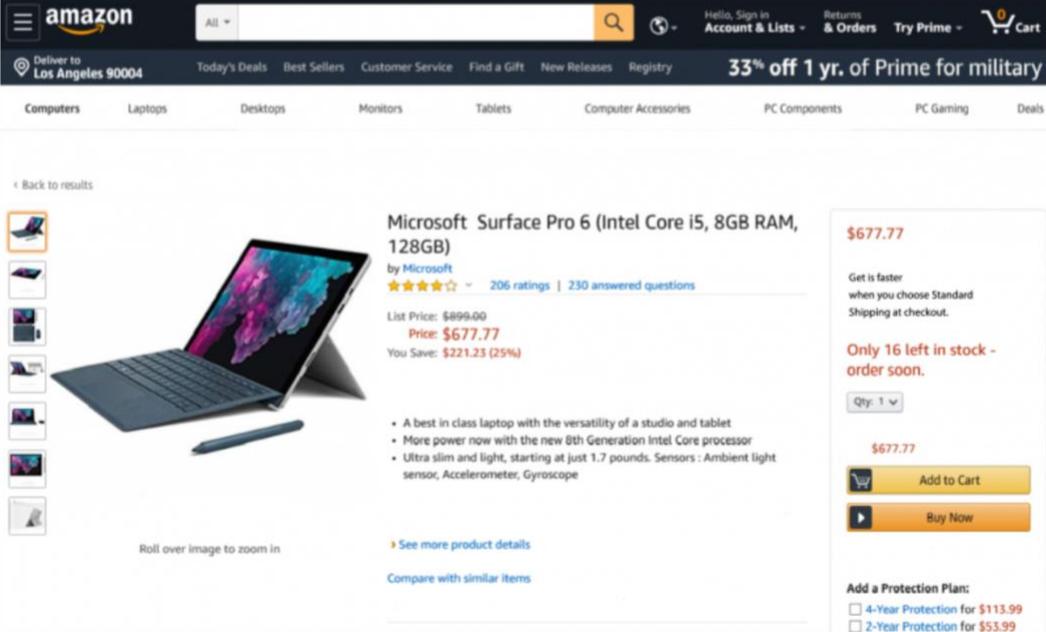
394 people found this helpful

Helpful | 4 comments | Report abuse

Appendix D

Main Survey (for Hedonic Orientation and Emotional Review)

Imagine that you spend about 90% of the time on your laptop **playing games, interacting with others through social media, listening to music, and watching movies at home.** Your old laptop is still functional, but because it is old, you have had several problems with it. As a result, **you want to buy a new laptop to substitute the old one.** Just then, you happen to see a 2-in-1 device that has features of both tablets and laptops at a reasonable price on Amazon.



The screenshot displays the Amazon product page for the Microsoft Surface Pro 6. The page layout includes a navigation bar at the top with the Amazon logo, a search bar, and links for account and orders. Below the navigation bar, there are category tabs for Computers, Laptops, Desktops, Monitors, Tablets, Computer Accessories, PC Components, PC Gaming, and Deals. The main content area features a product image of the Microsoft Surface Pro 6, a vertical gallery of smaller images on the left, and a detailed product description on the right. The product title is "Microsoft Surface Pro 6 (Intel Core i5, 8GB RAM, 128GB)" by Microsoft. The price is listed as \$677.77, with a list price of \$899.00 and a savings of \$221.23 (25%). The page also shows a "Buy Now" button, an "Add to Cart" button, and a "Protection Plan" section with options for 4-year and 2-year protection.

amazon

Deliver to Los Angeles 90004

Today's Deals Best Sellers Customer Service Find a Gift New Releases Registry

33% off 1 yr. of Prime for military

Computers Laptops Desktops Monitors Tablets Computer Accessories PC Components PC Gaming Deals

Back to results

Microsoft Surface Pro 6 (Intel Core i5, 8GB RAM, 128GB)
by Microsoft
★★★★☆ 206 ratings | 230 answered questions

List Price: \$899.00
Price: \$677.77
You Save: \$221.23 (25%)

- A best in class laptop with the versatility of a studio and tablet
- More power now with the new 8th Generation Intel Core processor
- Ultra slim and light, starting at just 1.7 pounds. Sensors : Ambient light sensor, Accelerometer, Gyroscope

See more product details

Compare with similar items

\$677.77

Get it faster when you choose Standard Shipping at checkout.

Only 16 left in stock - order soon.

Qty: 1

\$677.77

Add to Cart

Buy Now

Add a Protection Plan:

- 4-Year Protection for \$113.99
- 2-Year Protection for \$53.99

After viewing the product image, you notice there is a customer review about the product and read the following review.

The screenshot shows the Amazon website interface. At the top, there is a navigation bar with the Amazon logo, a search bar, and a location indicator for Los Angeles 90004. Below the navigation bar, the page title is "Customer Review". The reviewer is identified as "Amazon Customer" with a profile picture icon. The review is dated "November 18, 2018" and is marked as a "Verified Purchase". The review text reads: "I received this yesterday and really find it enjoyable and attractive so far! It's big, smooth, and fast.. Super lovely. This is perfect for anyone who wants a convertible laptop and table that is not so expensive. This 2-in-1 laptop gives me so much more enjoy doing many entertaining things. Very light like a feather, display is super fantastic! I would recommend it." Below the review text, it states "394 people found this helpful" and provides options to mark the review as "Helpful", view "4 comments", or "Report abuse".

How much do you agree that the message of this customer review uses an emotional appeal?

Very low	Low	Moderately low	Neither high nor low	Moderately high	High	Very high
<input type="radio"/>						

How much do you agree that the message of this customer review uses a rational appeal?

Very low	Low	Moderately low	Neither high nor low	Moderately high	High	Very high
<input type="radio"/>						

Please indicate your feeling and thoughts after reading this review.
(optional)

You have just read this customer review.

"I received this yesterday and really find it enjoyable and attractive so far! It's big, smooth, and fast.. Super lovely. This is perfect for anyone who wants a convertible laptop and table that is not so expensive. This 2-in-1 laptop gives me so much more enjoy doing many entertaining things. Very light like a feather, display is super fantastic! I would recommend it."

Please indicate your feeling and thoughts after reading this review.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am not surprised that this product (for my entertainment) has this customer review.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
One would expect this product (for my entertainment) to have this customer review.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It was predictable that this product (for my entertainment) would have this customer review.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Given my shopping goal (i.e., a product purchase for my entertainment), the likelihood of purchasing this product is high.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I will go into buy a laptop for my entertainment, I would consider buying this product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Given my shopping goal (i.e., a product purchase for my entertainment), I would consider buying the product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Given my shopping goal (i.e., a product purchase for my entertainment), the probability that I would consider buying the product is high.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Given my shopping goal (i.e., a product purchase for my entertainment), my willingness to buy the product is high.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please answer the below questions carefully.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am pleased with the overall service at Amazon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shopping at Amazon is a delightful experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am completely satisfied with the Amazon shopping experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Purchasing a laptop from Amazon would involve product risk (i.e., not working, defective product).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchasing a laptop from Amazon would involve financial risk (i.e., fraud, hard to return).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Very low	Low	Moderately low	Neither high nor low	Moderately high	High	Very high
How would you rate your overall perception of risk of purchasing a laptop from Amazon?	<input type="radio"/>						

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"I received this yesterday and really find it enjoyable and attractive so far! It's big, smooth, and fast.. Super lovely. This is perfect for anyone who wants a convertible laptop and table that is not so expensive. This 2-in-1 laptop gives me so much more enjoy doing many entertaining things. Very light like a feather, display is super fantastic! I would recommend it."

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The information I get through this online customer review is relevant as it matches my shopping goal (i.e., a product purchase for my entertainment).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information I get through this online customer review is appropriate for satisfying my shopping goal (i.e., a product purchase for my entertainment).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Given my shopping goal (i.e., a product purchase for my entertainment), the information I get through this online customer review is helpful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate your opinion about Microsoft on the scale from 1 to 7.

Negative	<input type="radio"/>	Positive						
Bad	<input type="radio"/>	Good						
Unfavorable	<input type="radio"/>	Favorable						
Dislikable	<input type="radio"/>	Likable						

Please answer the below questions carefully.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
My friends and co-workers come to me more often than I go to them for information about the internet and/or web site(s).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I am generally regarded by my friends and co-workers as a good source of advice and/or information about the internet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends and co-workers often ask my advice about the internet and/or particular website(s).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I sometimes influence the web site(s) that my friends and co-workers visit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Are you familiar with the online shopping environment?

Definitely yes

Probably yes

Might or might not

Probably not

Definitely not

Are you familiar with shopping at Amazon?

Definitely yes

Probably yes

Might or might not

Probably not

Definitely not

What product was used for this study?

Microsoft Surface Pro

Samsung Notebook

Apple MacBook Air

What do you think the purpose of this study is? (optional)

Please provide the following demographic information.

Sex

Male

Female

Age

18-29

30-39

40-49

50-59

60+

Ethnicity

Caucasian

American Indian or Alaska Native

Asian or Pacific Islander

Black or African American

Hispanic or Latino

Mixed or Others

Annual income

Less than \$25,000

\$25,000 - \$49,999

\$50,000 - \$74,999

\$75,000 - \$99,999

\$100,000 or more