

Are Negative Online Consumer Reviews Always Bad? A Two-Sided Message Perspective

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ABSTRACT

This study investigates the effects of a two-sided message on product attitude and purchase intention by using a message structure variable, such as attribute importance in the context of online consumer reviews (OCRs). Study 1 explains the previous inconsistent results of a two-side message by comparing a one-side message and a two-side message by using the attribute importance in negative reviews. Study 2 determines the reasons for the inconsistent results of a refutational two-sided message research by using the attribute importance in negative reviews and website trust. Two experiments are designed to test our hypotheses. The first experiment is a 2x2 factorial design with 84 participants. The second experiment uses a 2x2x2 factorial design with 196 participants. In study 1, two-sided OCrs are more credible than one-sided OCrs, and two-sided OCrs that use low important attributes are more effective in making favorable product attitude/purchase intention. In study 2, refutational two-sided OCrs that use high attribute importance render positive effects on product attitudes in trustworthy websites. However, the refutation could negatively affect product attitude/purchase intention in low trustworthy websites.

Keywords: Online Consumer Reviews, Attribution Theory, Inoculation Theory, Two-sided Message Framework, Negative Reviews

1. Introduction

Online Consumer Reviews (OCRs) are a type of information created by consumers who have already bought the target product. OCrs contain product information and recommendations from the consumer's perspective (Park et al., 2007). As Amazon's system of consumer reviews became the most success-

ful strategy in e-Commerce, most online shopping malls now allow consumers to write reviews on their websites. Furthermore, people have posted their reviews at the independent review sites such as Yelp.com. Among many studies on OCrs, several scholars have warned against the powerful effects of negative WOM on consumers. Negative WOM influences consumers more than positive WOM

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(Brown and Reingen, 1987; Charlett et al., 1995; Chen and Xie, 2008; Dellarocas, 2003; Godes and Mayzlin, 2004; Weinberger et al., 1981) and the diffusion speed of negative WOM is unexpectedly faster compared to positive WOM (Chip, 1996; Coovert and Reeder, 1990).

From this perspective, does negative WOM always negatively influence consumers' attitudes? A stream of research exists in suggesting that a message including some negative information (two-sided message) regarding a brand is more effective than a message including no negative information (one-sided message). Some consistent empirical findings have emerged stating that two-sided messages can primarily enhance credibility (Golden and Alpert, 1987; Kamins and Marks, 1987; Swinyard, 1981) and generate attitudinal resistance to attack (Bither et al., 1971; Kamins and Assael, 1987; Szybillo and Heslin, 1973). This research stream had also been applied to the advertising industry. The studies found that a two-sided message influences key dependent variables, such as attitude toward the ad, attitude toward the brand, and purchase intentions (Eisend, 2007; Etgar and Goodwin, 1982; Kamins et al., 1989). OCRs share a commonality with advertisement in terms of providing recommendations about the target product. However, OCRs are different from advertisement in several aspects. One of the differences is that the pros and cons of a product are freely described in OCRs. It is difficult for advertisers to negatively criticize important attributes of a product, whereas it is simple for consumers to post their criticisms on a product's attribute, although it may be the most highly significant attribute of the product. The characteristic of OCRs could help in explaining the inconsistent results of the traditional two-sided message research.

Two-sided message research has two streams of

research. The first stream is the research focused on the different effects of a one-sided message vs. two-sided message, mainly based on the attribution theory (Kamins, 1989; Settle and Golden, 1974). The second stream is a refutational two-sided message based on the inoculation theory (Bither, 1971; Szybillo and Heslin, 1973). The refutational two-sided message is a subset of the more general class of a two-sided communication. Most studies portrayed two-sided messages as being more favorable than a one-sided message (e.g., Kamins, 1989; Kamins et al., 1989; Smith and Hunt, 1978), whereas some studies revealed the opposite (e.g., Allen, 1991). Similarly, in most previous advertising researches, while the one-sided ad was less effective than either the different types of the two-sided ad, similar results were obtained for both types (refutational and non-refutational) of the two-sided ad treatments. These empirical results suggested, in some cases, that refutation was not necessary. However, some studies stated that a refutational two-sided message was more favorable than a non-refutational two-sided message (e.g., Szybillo and Heslin, 1973). Hence, Crowley and Hoyer (1994) analyzed the previous two-sided message research and proposed several integrated frameworks for the study of two-sided messages. Moreover, they proposed that 'attribute importance of negative information' could be one of the reasons for such inconsistent results.

In this study, we describe the effects of a two-sided message through two studies. In Study 1, by comparing a one-sided message and a two-sided message using the attribute importance in negative reviews, we will explain the previous inconsistent results. In Study 2, our goal is to discover the reasons for the inconsistent results of a refutational two-sided message research by utilizing the attribute importance in negative reviews and website trust. This website trust is the most

critical factor in two-sided message research (Golden and Alpert, 1987; Kamins and Marks, 1987; Swinyard, 1981) as well as in e-Commerce research, including OCR studies (Lee et al., 2011). This study would contribute to two-sided message theory and research on OCRs. Moreover our results would help not only managers in online shopping mall but also online marketers to understand consumer behaviors and manage negative reviews.

II. Literature Review

2.1. Online Consumer Reviews

Previous studies have investigated OCRs as electronic Word-of-Mouth (eWOM) communication that influences consumer behavior in terms of product attitudes and purchasing decision-making (Chatterjee, 2001; Chen and Xie, 2008; Cheung et al., 2008; Lee et al., 2011; Lee et al., 2013c; Lim 2015; Park et al., 2007). Some studies have considered the effect of the consumers' personal character, such as self-efficacy in e-WOM adoption (Lee et al., 2013a), and the effect of the seller's instrumental action in terms of information compactness and adequacy of review systems on customer loyalty (Lee et al., 2013b). Current studies on OCRs have considered the source factors and the receiver factors. The source factors included identity disclosure (photo/name/address) and reputation (number of reviews/friends/fans and Elite award) while the receiver factors included being a user or non-user of a website (Lim 2015; Liu and Park 2015). The valence of online reviews has been considered and studies show that people perceive an extreme negative rating as more useful than moderate ratings (Park and Nicolau, 2015). However, these studies have a lack of collective

intelligence perspective for OCRs, which is outcome from key words of web2.0. OCRs are collective intelligence toward the target product on the information processing for decision-making. Concerning this point, it is important to consider multiple reviews as a group of information. People browse reviews and read over multiple reviews but most studies have focused on a single review. Hence, this study approached OCRs as collective intelligence of which multiple OCRs are a collective group of messages in online information processing.

2.2. Two-sided Message Theory

Two-sided OCRs consist of a message that provides information about both positive and negative attributes of a product. To understand the effect of two-sided OCRs on consumer behavior, previous studies have developed hypotheses on two important theories that are derived from social psychology: attribution theory and Inoculation theory. These theories are also bases of the integrated two-sided message framework.

2.2.1. Attribution Theory

Attribution theory has guided a majority of two-sided advertising studies. Eisend (2007) indicates that this theory provides high generality and affirms the prevalent use of the theory in previous studies. Applied to advertising, the attribution theory posits that consumers can attribute claims, either to the advertiser's desire to sell the product (one-sided advertising) or to the actual characteristics of the product communicated by an honest advertiser (two-sided advertising; see Settle and Golden, 1974). In essence, inclusion of negative information is not normative and leads the receiver of the message to conclude that the advertisement is "telling the truth." This

enhances the perception of the advertiser's credibility, and in turn, strengthens beliefs regarding the positive attributes, which are claimed by advertisers, associated with the product (Eisend, 2007). The finding has received empirical support in many studies utilizing a variety of products and methodologies (Golden and Alpert, 1987; Kamins, 1989; Kamins et al., 1989; Smith and Hunt, 1978; Stayman et al., 1987; Swinyard, 1981).

2.2.2. Inoculation Theory

The inoculation theory uses a physiological analogy developed by McGuire (1961). In essence, applications of the inoculation theory involve strengthening the cognitions through the inclusion of mild attacking arguments and then countering or refuting these negative arguments within the same communication. The receiver then obtains some 'practice' in refuting the counterclaims. McGuire (1961) has found this tactic to be effective whether the subsequent attack on the belief came in the form of the same counterarguments as those contained in the message, or if it came in the form of new counterarguments. McGuire (1961) describes a one-sided presentation as "belaboring the obvious," giving the receiver of the message little motivation to use the information seriously. In essence, McGuire seems to be implying that two-sided messages are more involving and "attention getting" than one-sided messages. In the early 1970s, much of the two-sided advertising research applied McGuire's (1961) inoculation theory (Bither et al., 1971; Szybillo and Heslin, 1973). These early studies discovered that favorable attitudes based on two-sided refutational appeals may be more resistant to change when confronted with counter attitudinal messages (Bither et al., 1971; Szybillo and Heslin, 1973) and that these appeals tend to be especially

effective among those who have a negative initial attitude toward the advertised brand (Sawyer, 1973).

2.2.3. Integrated Two-sided Message Framework

The attribution theory calls for including negative claims without refuting these claims. However, the inoculation theory emphasizes refutation. The role of refutation of the negative information has been central in McGuire (1961)'s, McGuire (1985)'s development of the inoculation theory. Both the theories predict that two-sided communication can be more effective for persuasion than one-sided communication; further, most studies have shown two-sided messages to be more favorable than one-sided messages (e.g., Kamins 1989; Smith and Hunt, 1978). However, some studies based on the attribution theory revealed that two-sided messages are not more favorable than one-sided messages (e.g., Allen, 1991). According to previous studies based on the inoculation theory, several studies in an advertising context (e.g., Golden and Alpert, 1987; Kamins et al., 1989; Kamins and Marks, 1987; Settle and Golden, 1974; Smith and Hunt, 1978) have demonstrated beneficial effects of two-sided messages without refuting the negative claims.

Crowley and Hoyer (1994) state that these inconsistent results stemmed from no theoretical framework that specifically addresses two-sided message effects, including message structure variables. They provide an integrative framework and propose message structure variables for two-sided message, including attribute importance. For a two-sided message, the importance of negative attributes could be a key consideration in persuasive communication. A highly important attribute in negative messages could increase credibility; however, discounting an important attribute may have a negative impact on

purchase intentions (Stayman et al., 1987). Crowley and Hoyer's (1994) study conveys a possibility of the relationship between refutation and the importance of negative attributes.

This framework has been particularly tested by several studies and largely tested by Eisend (2007). However, those studies are primarily used in advertising and thereby did not test some propositions such as 'attribution importance'. Although Eisend (2007) has tested the framework at large, he also mentions that the model did not integrate the detrimental effect of negative attributes on product evaluation, which can undermine the positive credibility effect for very important attributes; this is one of the limitations in his research. Our study mainly investigates the effect of the attribute importance based on the integrated two-sided persuasion framework (Crowley and Hoyer, 1994) in the OCR environment.

III. Study 1 - One-sided OCRs vs. Two-sided OCRs with attribute importance

3.1. Study 1 - Research Hypothesis

In OCRs, consumers can post not only positive reviews but also negative reviews about the weakness of a product. Both negative and positive reviews could make a consumer feel free to adopt a position on either a positive or negative attitude on the product. Moreover, two-sided OCRs could increase the image of honesty and fair-minded people (Allen, 1991).

According to the characteristics of OCRs, sources of OCRs are usually anonymous posters and strangers; thus, there is a high possibility for sellers to write OCRs (Mayzlin, 2006). Sometimes, the seller (e.g., csource.com, half.com) can license consumer

reviews from intermediaries such as Epinions.com and decide when to post them on its website. This implies that if all OCRs are positive, then consumers could be led to think that sellers may be engaging in the management of reviews, thereby perhaps revealing the disadvantages about a target product. Thus, if the reviews of a product are all positive, consumers can be induced to mistrust the OCRs. Therefore, the presence of negative reviews evokes credibility in people compared to having only positive reviews.

H1: Two-sided OCRs are more credible than one-sided OCRs.

However, the presence of negative information "offsets" the positive information. Discounting an important attribute tends to result in credibility gains but also results in a detrimental effect on the subjects' intent to purchase the product (Stayman et al., 1987). Similarly, Settle and Golden (1974) find that credibility gains, including negative claims, are offset by losses in total expected benefits from the product. As a result, even though negative OCRs increase credibility, if a consumer posts that a highly important attribute of the target product is really bad, then it strongly influences others' attitudes negatively and therefore, leads to unfavorable attitudes and purchase intentions.

H2a: The effect of two-sided OCRs on product attitude is stronger when the negative attributes are of low importance than high importance

H2b: The effect of Two-sided OCRs on purchase intention is stronger when the negative attributes are of low importance than high importance.

3.2. Study 1 - Research Method

3.2.1. Participants and Design.

The first experiment investigates the sidedness effect of OCRs using message structure variables (attribute importance). Similar to previous two-sidedness researches (e.g., Crowley and Hoyer, 1994; Kamins and Assael, 1987), “one-sided OCRs” are operationally defined to have only positive reviews and “two-sided OCRs” are defined to have a few negative reviews. Eight OCRs regarding a digital camera are chosen because the average of reviews generally read by consumers is six to eight reviews (Lee et al., 2011). One-sided OCRs have eight positive reviews while two-sided OCRs have two negative reviews and six positive reviews, following the integrated framework (Crowley and Hoyer, 1994).

To select the importance level of product attributes, twenty six representative attributes (weight, camera size, color mode, USB direct-print, USB speed, battery type, playback mode, LCD protection film, etc.) were selected from the descriptions of a real digital camera in real online shopping malls. Subjects in the pretest ($n = 20$) were requested to rate the attributes of cameras on a scale of three - high/medium/low - for its importance. Consequently, “the quality of picture by shaking” and “weight” attributes were selected for the high important attribute, whereas “LCD protection film” and “playback mode” attributes were selected for the low important attribute.

Eighty-four students participated in the current study in exchange for a \$1 stationary gift. 2 (Sidedness: one-sided or two-sided) x 2 (Attribute importance: high or low) between-subjects design was employed. Seventy-five percent of the subjects had purchased products online more than 4 times in the past year.

As noted earlier, the sidedness was manipulated

by varying the number of negative reviews. In one-sided OCRs, all reviews were positive. In two-sided OCRs, two reviews were negative and the others were positive (Crowley and Hoyer, 1994). Each review focused primarily on one attribute and the consumer’s experience about it. The length of a review was set to 3 lines (150 characters) with a font size of 10 points in order to eliminate the effect of varying lengths because the length of reviews could affect information quality and quantity (Chevalier and Mayzlin, 2006). Each review included a title, a poster name, and content (Appendix A). The reviews were located below the product advertisement.

3.2.2. Procedure and Measurement

In the beginning, participants were presented with product information regarding a digital camera through a webpage that resembled the look of an online merchant. The stimuli for the digital camera included a camera image, product benefits, and technical specifications, followed by a subsequent page, including 8 OCRs from customers. According to a recent two-sided message research (Crowley and Hoyer, 1994 p. 566), in a case in which “no” prior attitude may be assumed, differential effects favoring two-sided over one-sided messages have been found with some consistency. Thus, the brand name was not given and instead, a fictitious model name was provided. Participants were randomly assigned to either one-sided OCRs or two-sided OCRs. Next, participants were asked to carefully read the stimulus material. After exposure to the digital camera, participants were asked to evaluate the target product.

Product attitude was constructed as three 7-point bipolar items (unfavorable-favorable, bad-good, dislike-like) (Kamins and Marks, 1987). Purchase intention was measured on two 7-point scales. The

questions included “how likely is it that you will buy this product?” and “how likely is that you will recommend this product to your friends?” (Etgar, 1982; Park et al., 2007 etc.). Source credibility was measured on the three 7-point bipolar items (not trustworthy-trustworthy, dishonest-honest, and unbelievable-believable)(Kamins and Marks, 1987). The construct demonstrates adequate reliability and construct validity for source credibility ($\alpha = .83$), product attitude ($\alpha = .77$), and purchase intention ($\alpha = .77$).

3.3. Study 1 - Results

3.3.1. Manipulation Check

The perceived number of negative reviews in the OCRs (e.g., “how many negative reviews are in the website?”) served as a manipulation check for the sidedness. Subjects perceived the different sidedness between a two-sided OCR and a one-sided OCR ($F(1, 82) = 156.94, p < .001$). In order to check the manipulation of attribute importance, a question was asked to rate the importance of attributes used in the experiment on a 7- point scale (1 = strongly disagree, 7 = strongly agree). Subjects gave a high

score to the highly important product and vice versa. ($M_H = 5.62, M_L = 3.80, F(1, 82) = 64.55, p < .01$).

3.3.2. Hypothesis Testing

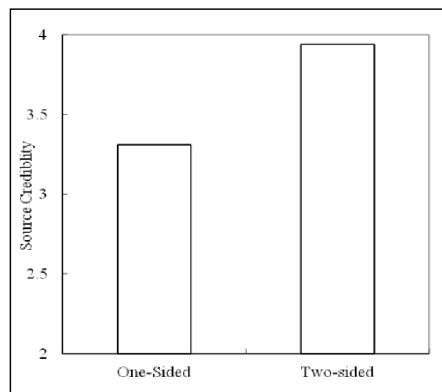
2 (Sidedness: one-sided or two-sided) x 2 (Attribute importance: high or low) ANOVAs were conducted on source credibility, product attitude, and purchase intention. The mean and standard deviations of the dependent variable are presented in <Table 1>. The main effect of sidedness on source credibility was significant ($M_{one-sided} = 3.31, M_{two-sided} = 3.94, F(1, 80) = 8.06, p < 0.01$) as shown in <Figure 1>. The results revealed that subjects suspected one-sided OCRs more than two-sided OCRs (H1. accepted).

The (Sidedness) x (Attribute Importance) interaction effect on product attitude ($F(1, 80) = 6.16, p < 0.05$) and purchase intention ($F(1, 80) = 8.45, p < 0.01$) were significant. While two-sided OCRs were more effective than one-sided OCRs in the low important attribute, two-sided OCRs were not effective than one-sided OCRs in the high important attribute (H2a, H2b accepted) (<Figure 2>).

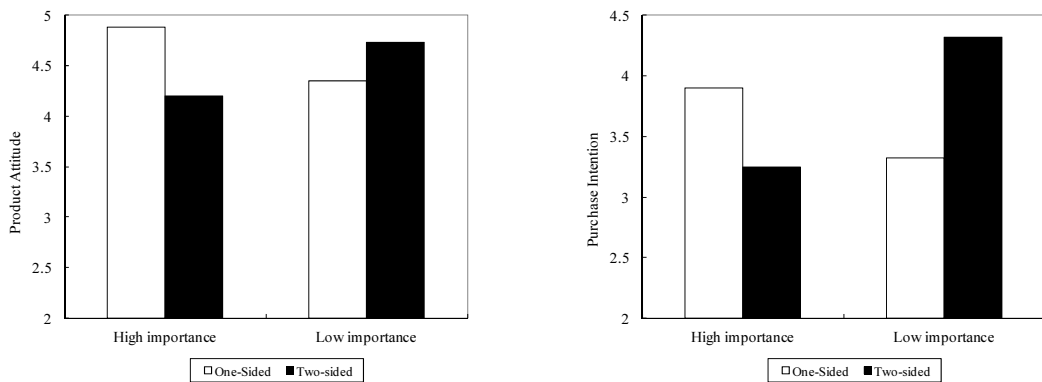
<Table 1> Two-Sided Effect of OCRs on Source Credibility, Product Attitude, and Purchase Intention

Sidedness	One-Sided OCRs		Two-Sided OCRs	
	High	Low	High	Low
Attribute Importance				
Source Credibility	3.67 (0.97) <i>n</i> = 20	2.98 (1.15) <i>n</i> = 22	4.12 (0.90) <i>n</i> = 20	3.79 (0.96) <i>n</i> = 22
Product Attitude	4.88 (1.12) <i>n</i> = 20	4.35 (0.90) <i>n</i> = 22	4.20 (0.89) <i>n</i> = 20	4.73 (0.98) <i>n</i> = 22
Purchase Intention	3.90 (1.48) <i>n</i> = 20	3.32 (1.32) <i>n</i> = 22	3.25 (1.02) <i>n</i> = 20	4.32 (1.32) <i>n</i> = 22

Note: Numbers are means (and standard errors) and cell size (*n*).



<Figure 1> The Effect of One-sided vs. Two-sided OCRs on Source Credibility



<Figure 2> The Effect of One-Sided vs. Two-Sided OCRs on Consumer Product Attitude and Purchase Intention

IV. Study 2 - Refutational Two-sided OCRs vs. Non-Refutational Two-sided OCRs in Different Levels of Website Trust

The results of Study 1 support the notion that two-sided OCRs using low important attributes leads to more favorable attitudes than one-sided OCRs. In Experiment 1, two-sided OCRs are non-refutational OCRs. However, within the online context, people are able to see other consumers' reviews and reply to the reviews based on their experiences. Thus,

we can observe the information interaction on OCRs in terms of refutation or non-refutation types of reviews. It is the refutational two-sided OCRs as a subset of the more general class of two-sided communication (Sawyer, A.G., 1973). In the refutational two-sided message research (e.g., Etgar and Goodwin, 1982; Kamins and Assael, 1987), while some dependent variables, such as belief change and belief, consistently show that refutational two-sided messages more effectively influence the dependent variables than non-refutational two-sided message, some variables such as significant purchase intention and atti-

tude do not show consistent results. In the second experiment, we explain the inconsistent results of refutation and non-refutation two-sidedness in previous studies by using attribute importance and context effect through the utilization of OCRs.

4.1. Study 2 - Research Hypothesis

4.1.1. Refutational Two-sided OCRs vs. Non-Refutational Two-sided OCRs in Different Levels of Website Trust

Consumers post negative as well as positive experiences or recommendations, engendering a variety of levels in attacking messages. Some consumers say a good side about one particular attribute, whereas other consumers state a bad side about the same attribute. Some reviews are posted independently while some reviews refute other reviews. The inoculation theory explains the reasons as to why refuting negative reviews is effective on product attitudes or purchase intention compared to no negative reviews or independently posted reviews. When a positive review has a role to refute a previous negative review, it strengthens cognitions, reduces counterarguments, and consequently enhances product attitude and purchase intention (Kamins and Assael, 1987). The presence of a refutational review may serve to moderate the impact of negative information.

However, the refutation effect could be different depending on attribute importance (Crowley and Hoyer, 1994). A refutation about a negative review regarding an important attribute would influence product attitude/purchase intention, reduce counterarguments, and consequently enhance product attitude/purchase intention. However, when negative claims include unimportant attributes, negative re-

views offset the positive reviews to a minor extent. In this case, refutation is not necessary because consumers do not perceive the information as being critical (Crowley and Hoyer, 1994). Therefore, the following hypotheses are presented:

H3a: As the attribute importance in two-sided OCRs increase, the effect of refutational message on product attitude increases.

H3b: As the attribute importance in two-sided OCRs increase, the effect of refutational message on purchase intention increases.

4.1.2. The Influence of Trust in Websites on Trust in Sources of Consumer Reviews

Previous two-sided communication studies have considered a prior attitude toward the target product (Crowley and Hoyer, 1994); however, they did not consider the initial source credibility. The reason is that information sources in advertisement assume general brand managers or marketers. However, sources of OCRs are individual anonymous poster and strangers; hence, initial source credibility could influence the effect of refutational two-sided messages. Although the presence of a refutational message may serve to moderate the impact of negative information, the refutation may partially mitigate the desired effects on credibility. The source credibility of OCRs in online shopping malls is influenced by website trust (Lee et al., 2011). According to trust transfer research, trust is transferred from individuals (McEvily et al., 2003) or context (Stewart, 2003) to individuals. Stewart (2003) demonstrates trust transference in the World Wide Web context and Pavlou and Gefen (2004) portray trust transference in a seller community. E-commerce research investigates trust in websites from the viewpoint of institution-based

trust, which states that behaviors are situationally constructed (McKnight and Chervany, 2001; McKnight and Chervany, 2002). Such trust stems from the belief that impersonal structures are in place to facilitate and encourage trustworthy behavior in a given situation (Zucker, 1986).

In this sense, if a site has good reputation and many consumers have used the site, then potential consumers tend to trust the online site operation and the group of reviews in the website (Lee et al., 2011). On the contrary, if a site does not have a good reputation and few consumers use the site, then people are not likely to trust OCRs and the reviews in the website. As aforementioned, due to the characteristics of OCRs, such as anonymity, and several real cases related with sellers' fake reviews, potential consumers are more likely to rely on the site's reputation and popularity. Therefore, the refutational two-sided reviews in the high trustworthy websites are effective while refutational opinions in low trustworthy websites could be perceived as disguised sellers. Hence, the hypotheses are as follows:

H4a: As website trust decreases, the effect of refutational two-sided OCRs on product attitude decreases.

H4b: As website trust decreases, the effect of refutational two-sided OCRs on purchase intention decreases.

4.2. Study 2 - Research Method

4.2.1. Participants and Design.

This study employed 2 (Website Trust: high vs. Low) x 2 (Attribute Importance: high vs. low) x 2 (Two-sided Types: Refutation vs. non-refutation) factorial design. One hundred ninety-six students participated in the study and were randomly assigned.

4.2.2. Procedure and Measures.

The experimental procedure followed Experiment 1 with a few noticeable differences. In Experiment 2, participants were asked to read information about the online vendor reputation prior to being exposed to the stimulus material for the digital camera, as in the previous experiment. A favorable reputation is easily transferable and enhances the credibility of the vendor (Ganesan, 1994); moreover, a firm's reputation is important in influencing a consumer's trust toward the firm (Chen and Dhillon, 2003). The reputation contains popularity, operation years, and award-records of the online vendor (e.g., "This online vendor has operated his/her own website for 5 years using a home-shopping channel. Most online users have made purchases at this site. Three awards were given: #1 online shopping site in Consumer Satisfaction Survey, Security Mark, and Information Management awarded by the Minister of Communications Ethics Committee.").

Similar to Experiment 1, eight reviews were used. Each review included a title, a poster name, and content. Two OCRs were negative and the others were positive. One consumer stated a negative recommendation about the attribute and the next consumer stated a positive aspect of the attribute. In both refutational and non-refutational OCRs, the negative reviews are the same although the next positive review is different. In non-refutational OCRs, the next review is described independently. However, in refutational OCRs, responding to another consumers' negative replies, one consumer states "Despite another buyer's saying that (negative aspect), I think (positive aspect)" (Kamins and Assael, 1987) (<Figure 3>).

Participants were then randomly assigned to either refutational or non-refutational OCRs. Additionally, Experiment 2 asked the participants to report their

Too heavy

Y Sohn

I do not recommend buying this camera. Although the size of the camera is very small, it is still very heavy. Shouldn't the camera be lighter if the size is small? Something just isn't right.

LCD is the best!

J. Kim

Despite the review of the weight issues of the camera, I think this camera has the best LCD. The 2.5 LCD monitor is big enough to check the subjects. I can check 16 images all at once. File management has become very convenient. I will continue to use this one!

<Figure 3> The Example of Refutational OCRs in Experiment 2

knowledge regarding benevolence, integrity, and competence of the online vendor following the five 7-point items adapted from previous researches (Pavlou and Gefen, 2004; McKnight et al., 2002): "This site can be trusted at all times," "This site has high integrity," "This site is a competent internet vendor," "This site is honest," and "This site is reliable." These items served as manipulation checks for website trust, and were averaged to form a reliable website trust score ($a = .85$), where a higher number indicated greater consumer trust toward the target vendor. Moreover, Experiment 2 asked the participants to report their perception of refutations with two 7-point items (e.g., "some reviewers hold different views from other reviewers," "some reviewers have opposite opinions from other reviewers") ($a = .91$).

4.3. Study 2 - Results

4.3.1. Manipulation Check

2 (Two-sided Type: refutational or non-refutational) x 2 (Website Trust: high or low) x 2 (Attribute Importance: high or low) ANOVAs were conducted on two-sided types, website trust, and attribute importance. Subjects perceive that opposite opinions exist in the Refutation OCRs group more than the

Non-Refutation OCRs group ($M_H = 6.12$, $M_L = 3.99$, $F(1, 194) = 66.76$, $p < .01$). A website with high reputation is perceived as a more trustworthy website than a website with low reputation ($M_{High\ trust} = 4.86$, $M_{Low\ trust} = 3.50$, $F(1, 194) = 56.72$, $p < .01$). Subjects gave high scores to the high important attributes used in this experiment, whereas they gave low scores to the low important attributes used in this experiment ($M_{High\ importance} = 5.15$, $M_{Low\ importance} = 3.77$, $F(1, 194) = p < .01$).

4.3.2. Study 2 - Hypothesis Testing

2 (Two-sided Types: refutational OCRs or non-refutational OCRs) x 2 (Website Trust: high or low) x 2 (Attribute Importance: high or low) ANOVAs were conducted on product attitude and purchase intention. The mean and standard deviations of the dependent variable are presented in <Table 2>. The effect of interaction between (Website Trust) and (Two-sided Types) on product attitude and purchase intention is significant. The three-way interaction is significant in product attitude, but it is marginally significant in purchase intention.

(Attribute importance) x (Two-sided Types) interactions in the three-way ANOVAs are not significant. Further analysis has been conducted by computing

separate 2 x 2 ANOVAs (Attribute importance x Two-sided Types) in each case of website trust (<Figure 4>). Under high website trust, the interaction between (Attribute Importance) and (Two-sided Types) ($F(1, 93) = 3.79, p < .05$) significantly influences product attitude (H3a, partially accepted). Under low website trust, the interaction between (Attribute importance) and (Two-sided

Types) ($F(1, 95) = 5.26, p < .05$) is significant, yet the direction is opposite. Low important attributes have no advantage by refutation in both low and high website trust; however, the effect of refutational OCRs with high important attributes are different direction: refutational OCRs had higher product attitude than non-refutational OCRs under high website trust while refutational OCRs had lower product atti-

<Table 2> The Effect of Two-Types of Two-Sided OCRs on Product Attitude and Purchase Intention

Website Trust	High				Low			
	High		Low		High		Low	
Attribute Importance	High		Low		High		Low	
Two-sided Types (Ref. vs. non-Ref.)	Ref.	Non-Ref.	Ref.	Non-Ref.	Ref.	Non-Ref.	Ref.	Non-Ref.
Product Attitude	5.28 (0.61) <i>n</i> = 25	4.46 (0.98) <i>n</i> = 24	5.23 (0.92) <i>n</i> = 22	5.08 (0.84) <i>n</i> = 26	3.81 (0.98) <i>n</i> = 21	4.43 (1.14) <i>n</i> = 28	4.96 (0.71) <i>n</i> = 23	4.67 (1.00) <i>n</i> = 27
Purchase Intention	4.28 (1.16) <i>n</i> = 25	3.48 (1.03) <i>n</i> = 24	4.28 (1.18) <i>n</i> = 22	3.92 (1.06) <i>n</i> = 26	2.98 (1.12) <i>n</i> = 21	3.48 (1.08) <i>n</i> = 28	3.85 (1.09) <i>n</i> = 23	3.67 (1.09) <i>n</i> = 27

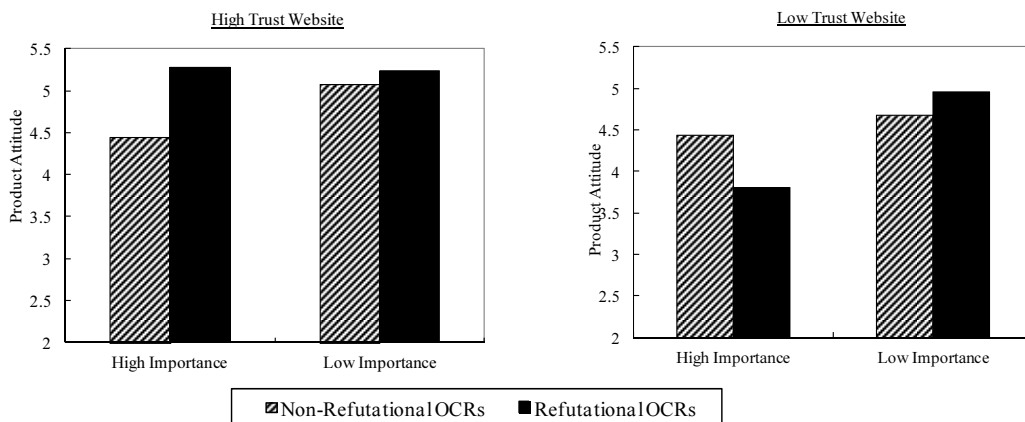
Note: Numbers are means (and standard errors) and cell size (*n*).

<Table 3> Results of 3-way ANOVA

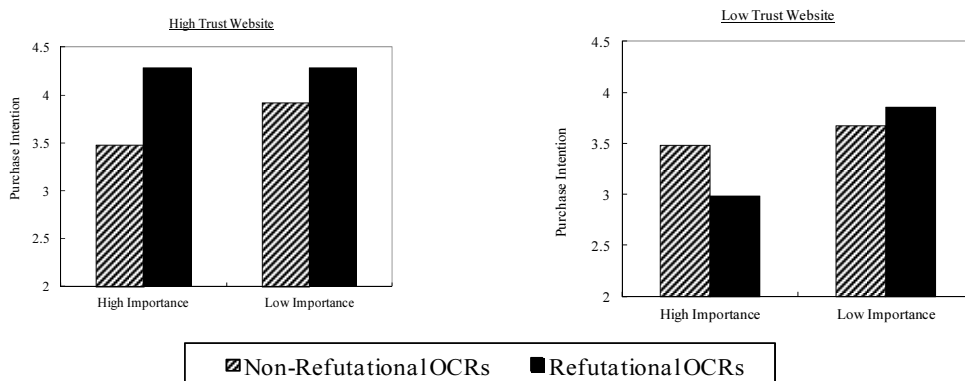
	<i>F</i>	<i>P</i>
<i>Product Attitude</i>		
Website Trust	17.21	0.00
Attribute Importance	13.77	0.00
Two-sided Types	1.50	0.22
(Website Trust) x (Attribute Importance)	2.43	0.12
(Website Trust) x (Two-sided Types)	6.13	0.01
(Two-sided Types) x (Attribute Importance)	0.20	0.65
(Website Trust) x (Attribute Importance) x (Two-sided Types)	9.03	0.00
<i>Purchase Intention</i>		
Website Trust	9.80	0.00
Attribute Importance	5.56	0.02
Two-sided Types	1.70	0.19
(Website Trust) x (Attribute Importance)	0.96	0.33
(Website Trust) x (Two-sided Types)	5.43	0.02
(Two-sided Types) x (Attribute Importance)	0.14	0.71
(Website Trust) x (Attribute Importance) x (Two-sided Types)	3.23	0.74

tude than non-refutational OCRs under low website trust. More specifically, these results indicate that the effect of refutation is influenced by the level of website trust. In the case of high important attributes, the effect of refutational two-side OCRs on product attitudes is positive under high website trust, whereas the effect of refutational two-side OCRs is negative under low website trust. This implies that as website trust decreases, the effect of refutational reviews on product attitude decreases as well (H4a accepted). In other words, refutation has a reverse effect in low website trust.

For the results of purchase intention, although the (Attribute Importance) x (Two-sided Types) interaction is not significant under high website trust, purchase intention had the same trend as product attitude (see <Figure 5>). Purchase intention of refutational OCRs with high attribute importance is higher than non-refutational OCRs ($M_{\text{Refutational}} = 4.07$, $M_{\text{Non-refutational}} = 3.54$) under high website trust, whereas purchase intention of refutational OCRs is lower than purchase intention of non-refutational OCRs ($M_{\text{Refutational}} = 2.98$, $M_{\text{Non-refutational}} = 3.48$) under low website trust (H4b marginally accepted).



<Figure 4> The Effect of One-Sided vs. Two-Sided OCRs on Consumer Product Attitude



<Figure 5> The Effect of One-Sided vs. Two-Sided OCRs on Purchase Intention

V. Discussion

5.1. Results Summary

Two experiments have been conducted following the integrated framework for the two-sided persuasion (Crowley and Hoyer, 1994). The first experiment investigated the effect of two-sided OCRs using message structure variables, such as attribute importance, by comparing them with one-sided OCRs. The findings supported the proposed theories in accordance to the attribution theory; moreover, the trade-off effect of negative OCRs between source credibility increase and favor decrease existed. As hypothesized, the two-sided OCRs, using low important attributes, yield significantly higher attitudes toward the target product than one-sided OCRs. However, criticism regarding high important attributes decreases product attitudes/purchase intention. Therefore, the two-sided effect is more effective when using low important attributes than high important attributes.

The second experiment is a more specified experiment to see the context effect of website trust using the types of two-sided messages and attribute importance. The findings reveal that website trust moderates the two-sided message type and attribute importance. Under the trustworthy website, the inoculation theory may prove to be a useful conceptual framework when the attribute included in negative information is highly important. Similar to other previous researches, refutational two-sided OCRs with low important attributes have no difference with non-refutational two-sided OCRs. However, under the low trustworthy site, the refutation could make negative effects on product attitude/purchase intention.

5.2. Academic Contributions

This study will contribute to academic research in several ways. First, it is an early study of two-sided research in the OCR context. Some of the previous research used two-sided effect theory to study persuasion and advertising in physical environments. However, OCRs provide a good communication platform for studying the effect of two-sided messages because consumers freely post their positive and negative reviews at the same time and at the same place. This study used OCRs to investigate various message structure variables, such as importance of the negative attributes in two-sided message research. Therefore, this study could test the propositions and explains the inconsistent previous research in the two-sided message research realm.

Second, this study is the first study using attribute importance as a message structure variable, following the two-sided framework (Crowley and Hoyer, 1994). Several studies have investigated the integrated framework for two-sided persuasion (Eisend 2007), however, they have been limited to testing the attribute importance because in advertisement it is unrealistic to expect any (completely) truthful evaluations, such as a critical

evaluation about any shortcomings of the product attributes. Our results demonstrate that two-sided messages are more effective than one-sided messages only when the attribute importance in negative messages is low. Also, the question as to why refutational and non-refutational two-sided message have no differences in previous studies could be explained by the attribute importance.

Third, this study adds the context factor, such as website trust, into the two-sided message framework. Previous research did not consider the source credibility of the speaker, who was usually general marketer

or advertiser of a normal brand. However, a two-sided message could make a different effect depending on who is talking. In particular, trust is critical success factor in an online market because, in general, the cyberworld, including the online market, provides anonymity. This study shows that trust of a website is an important factor in the two-sided message framework. When trust in website is high, the previous theory in terms of inoculation theory is acceptable. However, when trust in website is low, a two-sided message cannot show the expected results.

Fourth, this study contributes the research on two-sided types. While some studies stated that a refutational two-sided message was more favorable than a non-refutational two-sided message (e.g., Szybillo and Heslin, 1973), some studies showed that refutation was not necessary (e.g., Kamins et al., 1989). Our results showed that context such as trust in website could influence the effect of two-sided type on product attitude. In high trustworthy website, attribute importance of negative information also influence the effect of two-sided type on product attitude as Crowley and Hoyer (1994) expected. However, in low trustworthy website, refutational OCRs engender a negative effect on product attitude and purchase intention.

5.3. Practical Implication

Online marketers can use our results to manage online shopping malls. First, marketers need to be open-minded about negative reviews on their websites in order to ascertain if there is any truth in the statement. Current news, such as fake online reviews, has made people disbelieve all positive OCRs more than before (Sussin and Thompson, 2012). According to our results, one-sided OCRs make greater pressure to adopt a particular position than

two-sided OCRs ($F(1, 81) = 4.20, p < .05$). In this environment, some negative reviews conduce to more positive effects on consumers' product attitudes. If possible, it may be beneficial to display a few negative OCRs in the first page. Customers will feel that OCRs are credible.

Second, marketers must closely observe and respond to a negative review that criticizes very important product attributes. Marketers could manage the OCRs in two ways to reduce a negative effect. First, they can officially respond by posting a clarification below a negative review in order to engender a similar effect to a review that is a rebuttal. It could be a good idea to hire a specialized team to manage discussions about the product on external platforms because it is very important for an official representative to identify and track the shortcomings presented in negative reviews (Fruth and Neacsu, 2014). Second, another way is to reorganize the related positive reviews in order to produce a refutation effect. Marketers cannot change original reviews to refutational reviews against the negative reviews directly but they can relocate the related positive reviews with the same attributes. The reorganization will be helpful to consumers who are comparing various opinions about the same attribute.

Third, an online shopping mall should consider an interactive review system. In particular, a high trustworthy online marketer's website should adopt an interactive review system that helps customers to interact and reply to each other. Every product has a weak point; in other words, one person's meat is another person's poison. Consequently, an environment where consumers voluntarily reply to one another could be an effective tool to ameliorate the downside effects of negative reviews, as well as to make consumers easily understand what are the real pros and cons. This kind of review system will allow

positive refutational effects for product attitudes and purchase intention in OCRs. On a low trustworthy website, marketers should add a refutational message in their advertisement that has been mentioned in a negative review. Official comments or additional information in advertisement could have a positive effect as two-sided advertising, especially in the case of an anonymous consumer's refutational review that is related to a negative review, which could have a negative effect at a low trustworthy website.

5.4. Limitation and Future Research

In many cases, product attitude is highly related with purchase intention, but the relationship could depend on consumer involvement (Petty et al., 1983). A high-involved consumer's product attitude leads to purchase intention, whereas a low-involved consumer's product attitude does not lead to purchase intention. To investigate the underlying mechanism, theoretical explanations could be refined by adding the relevant moderating variables, such as involvement or need for cognition. They can explain the variability of the effects of two-sided messages because receivers differing in involvement or need for cognition may evaluate the message in different profoundness and thus go different ways in forming attitudes and intention.

Source credibility is a key variable in the heuristic-systematic model and with the dual process models in general. Source credibility serves as a peripheral cue that leads directly to positive attitude and purchase intention. The function of source credi-

bility in marketing communication is consistent with previous findings (Chaiken and Matheswaran, 1994; Zuckerman and Chiken, 1998). Also, high quality information includes what people think is important in making decisions; hence, the attribute importance could be related with the quality of information, which is the central cue in the dual process model. In future research, elaboration processing of two-sided messages has to be cutinized. Although some studies use the involvement in a two-sided eWOM environment (Doh and Hwang, 2009), they do not control for attribute importance and also do not test the relationships among dependent variables, such as source credibility, attitude and purchase intention. If then, inconsistent results regarding attitude and purchase intention in the previous studies could be explained more clearly.

Our study has certain limitations. The sample of this research is comprised of only students. Thus, the findings and contributions of this study are exploratory in nature. Future research must be conducted by using samples of actual online shopping mall users. Also, it is possible for people to make neutral comments (between positive and negative); however, our study only considers positive and negative recommendations. Neutral comments utilizing a star rating system could be considered in future studies. Further, this study merely focuses on trust in websites as a context factor, whereas other factors such as seller's reputation could influence consumer attitude and credibility. Future research needs to consider other factors that could increase the credibility of OCRs.

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<Appendix A> Examples of Online Consumer Reviews in the Experiments

(1) Positive OCRs for One-Sided OCRs and Two-Sided OCRs

Huge memory space

M. Yang

This product has memory stick and CF memory slot. All you need to do is switch the knob in the back of the Camera. You do not have to worry about the memory space for the video and still images.

Various manual functions. Especially night mode

K. Lee

I am posting my review one week after my purchase. I went to the theme park with my girlfriend at night. It came out fantastic at night. It's small yet various modes! Love it

(2) Positive Reviews of High Important Attributes Used in One-Sided OCRs

Stable camera

SD. Park

Thank you. It is exactly what I had expected. All my friends envy me on this small yet stable feeling camera. The weight of camera gives me stable support when I take pictures. I think I bought the right product. Love it! Yeah~

(3) Positive Reviews of Low Important Attributes Used in One-Sided OCRs

Playback function is excellent

J. Seo

You can rewind the video images quickly while looking and reading at all the video images easily. I did not fully understand all functions, but it's truly useful device. Small but it contains various modes and function. Good!

(4) Negative Reviews of High Important Attributes Used in Two-Sided OCRs

Shakes!

J. Lee

I see lots of camera image shakes. 2 out of ten images are only good. I guess it has the shaking image because I used one hand. The camera should be better regarding on the stability image quality. I regret to buy this product.

(5) Negative Reviews of Low Important Attributes Used in Two-Sided OCRs

Only one play back speed

M. Choi

It was delivered one week ago. There is no special playback mode. Only normal speed to play back. So, it takes to find the specific moment of video.

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Submitted: April 30, 2015; 1st Revision: August 31, 2015; 2nd Revision: October 31, 2015; Accepted: November 5, 2015
