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Combined effects of valence and attributes of e-WOM on consumer judgment for message and product

The moderating effect of brand community type

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Abstract

Purpose – The purpose of this paper is to propose a model to test whether the combined effects of valence and objectivity/subjectivity of online review have an effect on consumer judgment and whether e-WOM platforms have a moderating effect.

Design/methodology/approach – In total, 480 respondents participated in online experiments with a four (positive+objective, positive+subjective, negative+objective, and negative+subjective online review) by two (marketer-generated vs consumer-generated brand community web sites) between subject design.

Findings – The experiment showed that: an objective negative online review was rated higher in terms of message usefulness compared to the other types of online reviews; positive reviews, whether they are objective or subjective, were rated higher in terms of attitudes toward and intention to purchase the reviewed product, and the effects of online reviews moderated by e-WOM platforms on consumer judgment were supported.

Research limitations/implications – The present study, based on an established theoretical foundation, will help the research community to gain a deeper understanding of the combined effects of online review valence and attributes on consumer judgment and whether user-generated web community is better for consumers to consult product experience.

Practical implications – The findings of this study can provide interested firms with useful strategies and tactics to enhance users' acceptance of online reviews in terms of who operates the web sites.

Originality/value – With increasing use of consumers' online reviews, the present study proposed and tested a comprehensive research model integrating both the valence and objectivity/subjectivity of online review, which has rarely been addressed in previous research.

Keywords Brand community, Attitudes, Intention to purchase, Message usefulness, Online review attributes, Online review valence

Paper type Research paper

Introduction

Previous research has shown that consumers trust peer consumers more than they trust advertisers or marketers (Lee and Youn, 2009; Sen and Lerman, 2007) and evaluate products/services using information that other people provide (Bone, 1992; Burnkrant and Cousineau, 1975; Herr *et al.*, 1991; Laczniak *et al.*, 2001). Previous studies have shown that

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WOM communication, which is defined as interpersonal communication about products and services among consumers, affects the message effectiveness, and evaluations of reviewed goods (Bone, 1992; Hong and Park, 2012; Harrison-Walker, 2001; Herr *et al.*, 1991; Park and Kim, 2008). Development of network technology and ubiquitous distribution of the internet have transformed traditional face-to-face WOM communication into computer-mediated WOM (e-WOM) communication. e-WOM refers to any statement made by potential, actual, and former consumers about a product, services, and/or companies, which is made available to a multitude of people and institutions via the internet (Henning-Thurau *et al.*, 2004). In reality, there exist diverse forms of user-generated e-WOM, which include short verbal depictions of customer experiences, rankings between different product elements, pictures/text/videos, etc. However, e-WOM in the present paper is limited and refers to short verbal depictions of customer experiences related to consuming and experiencing a product.

There are several differences between traditional WOM and e-WOM (Goldsmith and Horowitz, 2006; Lee and Youn, 2009; Lee and Koo, 2012). First, unlike face-to-face WOM, an unlimited number of unknown consumers post e-WOM, which produces vast amounts of unfiltered products/services information. This anonymous nature of the posted reviews about products in online environments makes it difficult for consumers to determine the levels of quality and trustworthiness of the e-WOM (Lee and Youn, 2009). Second, e-WOM contains product information from experienced peer consumers (Lee *et al.*, 2009). These online reviews contain characteristics of neutral, positive, negative, and/or objective and subjective information. Third, consumers' reviews are easily read and observed in an online environment. Online consumers' reviews are normally provided in text formats, the quality and content of which are thus easily retrieved, read, and evaluated. Fourth, consumers write their product experiences and read peer consumers' product evaluations on different platforms including retailers' web sites, brand community, independent web sites, and consumer blogs (Herr *et al.*, 1991; Lee and Youn, 2009). Online reviews posted on different platforms have different effects on the evaluations of consumers (Lee and Youn, 2009; Senecal and Nantel, 2004).

Previous research on e-WOM has studied how online reviews have influenced consumer judgment such as the persuasiveness of the message and evaluations of the reviewed products/services. Previous studies have demonstrated that characteristics of reviews such as valence and/or objectivity of the reviews produce differences in persuasion and product evaluation (Hong and Park, 2012; Lee and Koo, 2012). However, they neglected to investigate combined effects created by these review characteristics such as valence and objectivity. This combined effect of review valence and objectivity approximates real online product reviews and has rarely been investigated in previous studies. This constitutes the first research gap to be filled. Meanwhile, other studies have introduced personality and situational differences as moderators in order to explain inconsistent relationships between review valence and message effectiveness (Sen and Lerman, 2007; Hao *et al.* (2010); Zou *et al.*, 2011). Hao *et al.* (2010) investigated the effect of online review valence moderated by the two product types (search vs experience goods) on consumer product judgment and showed that the effect of positive reviews is greater for search goods than that for experience goods, whereas the effects of negative reviews have no significant difference between these two types of goods; and the impact difference between negative reviews and positive reviews is greater for experience goods than for search goods. Zou *et al.* (2011) stated that "the previous studies have shown inconsistent relationship between the valence (positive or negative) of online consumer reviews and consumer decision making" as a research gap

and investigated the effect of review valence moderated by consumer expertise on consumer decision making and reported that the impact difference between negative reviews and positive reviews is greater for consumers with low expertise than for those with high expertise. However, research investigating moderating variables is relatively under-studied and thus requires further investigation, which constitutes the second research gap to be filled in the present study. Building on this tradition of research, the present study aims to investigate the combined effects produced by review valence and review objectivity on consumer judgment of e-WOM messages and products including message usefulness and attitudes toward and intention to purchase the reviewed goods. The present study also investigated the moderating impact produced by different online platforms, that is, different effects produced by consumer-operated vs company brand community. The first objective may extend previous studies by confirming whether the combination of negative/positive and objective/subjective reviews have a differential effect on message and product judgments. The second objective may contribute to theory and managerial practices. Results from the investigation of moderator may help theoretically better explain under what conditions which type of reviews have a more significant effect on consumer judgments. Managerially, this will help managers with limited resources adjust the e-WOM strategies more economically and effectively. According to Sharma *et al.* (1981), the moderating variable modifies either the form and/or the strength of the relationship. The present investigation thus will show either that the effect of reviews in terms of the two web site platforms may be directionally opposite (the form) or that the magnitude of the effect may be different (the strength). For the directionally different effect of review valence, the managerial focus should be given to managing review characteristics such as valence and objectivity/subjectivity, i.e. how much time and effort should be invested on them. For the different magnitude of the review effect, the management attention has to be given to which type of platforms is to be managed with priority and which type of platforms are to benefit in positive (negative) and objective (subjective) reviews.

Following the introduction, "Literature review and hypotheses" provides a review of previous research on e-WOM and their relationships to consequences and proposes the hypotheses to be tested. "Method" describes the research methodology of the empirical study. "Results" reports on the testing of the hypotheses and presents a discussion. "Conclusion and discussion" presents implications, limitations, and suggestions for future research.

Literature review and hypotheses

Previous studies of online reviews

Previous studies of online reviews have concentrated their research attention to review quantity, review valence, and review objectivity. However, more recent studies have investigated various boundary conditions to advance previous studies. These studies are summarized in Table I.

(1) Popularity effects. The first research trend is related to the number of online reviews and shows that the number of online reviews is an important factor influencing consumers' evaluations of online reviews and the recommended products (Chen *et al.*, 2004; Duan *et al.*, 2008). Consumer evaluations investigated in previous research include message usefulness (Sen and Lerman, 2007; Lee and Koo, 2012), consumer attitudes toward and intention to purchase the reviewed product (Park and Kim, 2008; Chiou and Cheng, 2003), which were selected as dependent variables in this study.

Effects	Author(s)	Data	Findings
Popularity effects	Chen *et al.* (2004)	Amazon.com	The number of review recommendations is positively associated with sales, while consumer ratings are not related to sales
	Duan *et al.* (2008)	Site data from three firms	An increase in information leads to an increase in box office sales
Positivity effect	Gershoff *et al.* (2003)	Survey	Positive extreme agreement is more influential than negative extreme agreement when advice valence is positive
	Clemons *et al.* (2006)	Craft beer industry, ratebeer.com, April 2000-July 2004	Variance of ratings and the strength of the most positive quartile of reviews play a significant role in determining which new products grow fastest in the marketplace. Strongly positive ratings can positively influence the growth of product sales
	Doh and Hwang (2009)	Survey	Reviews that are more positive have a positive impact on attitudes toward the web site, product, and purchase intention, but no effect on message credibility
Negativity effects	Lee *et al.* (2009)	Survey	Extremely negative reviews has a stronger negative impact on attitude toward the brand than either moderately negative reviews or extremely positive reviews
	Yang and Mai (2010)	Gamespot.com, May 2003-March 2007	Consumers tend to pay more attention to negative e-WOM than positive e-WOM
	Xue and Zhou (2010)	Survey	Consumers tend to trust negative reviews more than positive messages, but consumers express more interests for products with positive reviews than products with negative reviews; positive reviews have a much stronger purchase intention than negative reviews
	Lee *et al.* (2008)	Experiment	Participants who are exposed to reviews that are more negative are more likely to follow the review posters' opinion
Objectivity effects	Lee and Lee (2009)	Experiment	Objective information for quality goods decreases purchase intention and preference for the product
	Lee and Koo (2012)	Experiment	Negative and objective reviews are perceived more credible
	Hong and Park (2012)	Experiment	Negative statistical online reviews are perceived more credible than positive narrative online reviews, and attitudes are more positive both in the positive statistical and narrative review conditions than in the negative statistical and narrative review conditions
No effects	Cheung *et al.* (2009)	Online survey	Message valence has no effect on credibility of e-WOM reviews

(*continued*)

Table I.
Previous e-WOM studies

Effects	Author(s)	Data	Findings
	Klein and Ford (2003)	Online survey	There is no significant relation between the importance of different attribute types and the proportion of search conducted on the internet
	Doh and Hwang (2009)	Survey	Reviews that are more positive have no effect on e-WOM credibility
Moderating effects	Senecal and Nantel (2004)	Experiment	Subject's propensity to follow a product on non-commercially linked third party web sites is not stronger than on commercially linked third party web sites. Consumers are more influenced by recommendations for experience goods than for those of credence goods. No moderating effects are observed
	Pan and Chiou (2011)	Experiment	Negative information for experience goods is seen as more trustworthy than positive information. This study shows that product category (experience vs credence goods) in conjunction with positive/ negative online reviews has a moderating effect on consumer's product judgment
	Lee and Youn (2009)	Experiment	Shows no interactional effect between e-WOM platforms and valence of e-WOM
	Xue and Phelps (2004)	Experiment	The superiority of an online forum to a brand's web sites to influence brand attitude appears when participants have low involvement with the product
	Lee *et al.* (2008)	Experiment	Highly involved participants who are exposed to more negative reviews and higher quality are more likely to follow the review posters' opinion, whereas low involvement participants who are exposed to more negative reviews follow the review posters' opinion regardless of the quality of the negative online reviews
	Park and Kim (2008)	Survey, experimental study	For consumers with high expertise, reviews framed as attribute centric have a better fit than reviews framed as benefit centric, but for consumers with low expertise, reviews framed as benefit-centric have a better fit than reviews framed as attribute centric

Table I.

Message usefulness refers to the helpfulness of the review information in the decision process (Sheinin *et al.*, 2011). Attitudes toward the reviewed product are the consumers' overall affective reactions toward recommended product (Simonin and Ruth, 1998). Intention to purchase the reviewed product is an individual's predisposition toward purchasing the recommended product in the future (Macintosh and Lockshin, 1997).

These variables were selected based on a dual role of online reviews (Park and Kim, 2008). According to Park and Kim (2008), online reviews function as an informant by providing user-oriented product information and also as a recommender by delivering

recommendations from previous consumers. According to Bickart and Schindler (2001), online reviews as an informant are credible because the opinions and accounts of personal product experiences found on an internet forum are from fellow consumers, who are perceived to have no vested interest in the product and no intentions to manipulate the reader. Thus online reviews have to be useful to the readers. In addition, an e-WOM product review plays a recommender for consumers and is written to either recommend or discourage others from buying the product (Sen and Lerman, 2007). And for firms, an e-WOM is useful in influencing the consumer's evaluation of their products (Mayzlin, 2006). Accordingly, persuasive online reviews have to affect attitudes and/or intentions.

In case of popularity effect, it is not important whether online reviews are positive or negative. The mere number or quantity of reviews posted by consumers may be interpreted as a signal of product popularity. In addition, an increase in the number of reviews means an increase in the amount of information to be processed. When consumers lack knowledge on a product or on the outcomes of using that product, they may engage in uncertainty reduction efforts to mitigate and/or eliminate the risk associated with it and to maximize the outcome value. Consumers can reduce the uncertainty by gathering more information about the product. Thus, the number of reviews influences review message processing. Previous studies confirmed that an increase in information leads to an increase in trustworthiness for the delivered message (Chen *et al.*, 2004) and box office sales (Duan *et al.*, 2008). From a global perspective, Jalilvand and Samiei (2012) show that consumer's general use of e-WOM has a positive influence on attitudes toward a tourist destination, subjective norm, behavioral control, and travel intention.

Negativity, positivity, and no effects. Second, the most frequently researched topic in consumers' online reviews is review valence. The valence of a review refers to the evaluative direction of the review and can be positive, neutral, or negative (Lee *et al.*, 2009). A neutral review provides the reader with descriptive information about the target object without any evaluative direction. A positive review offers information that evaluates the object positively and vice versa for a negative review. Although this topic has been studied extensively, the results have failed to produce a consistent conclusion. Most previous research showed that negative information generally has a stronger influence than either neutral or positive information (Herr *et al.*, 1991; Lee *et al.*, 2009; Xue and Zhou, 2010; Yang and Mai, 2010). This tendency is called negativity bias or negativity effect. According to this theory, when people form impressions of an object, they are more affected by negative characteristics than positive ones. This negativity effect occurs since negative information is scarcer and more diagnostic than positive information (Chiou and Cheng, 2003). Accordingly, individuals pay attention and give more weight to negative information than positive one (Fiske, 1980). Herr *et al.* (1991) showed that a negative WOM has a stronger impact than a positive WOM. This negativity result is further explained by prospect theory, which implies that losses loom larger than gains (Lee *et al.*, 2008). In contrast, positivity effects have also been observed in previous studies (Clemons *et al.*, 2006; Gershoff *et al.*, 2003; Lee *et al.*, 2009; Skowronski and Carlston, 1989), although they are less frequently studied. Gershoff *et al.* (2003) and Clemons *et al.* (2006) showed that positive reviews have a stronger impact than negative ones. According to a cue-diagnosticity model, the positivity effect is more likely to occur when positive cues are more diagnostic than negative cues (Skowronski and Carlston, 1989). Different from negativity or positivity effects, Cheung *et al.* (2009) demonstrated that message valence has no impact on message credibility.

In summary, negativity effects dominate positivity and/or no effect in previous research on online reviews.

Objectivity effects. Third, several studies have investigated the effect of online review attributes, which are related to classifying reviews based on their characteristics such as objective vs subjective, factual vs non-factual, attribute- vs benefit-centric, and/or satistical vs narrative information (Bickart and Schindler, 2001; Klein and Ford, 2003; Lee and Lee, 2009; Hong and Park, 2012; Park and Kim, 2008). Objective information includes factual, attribute centric, and statistical reviews and is characterized as factual, statistical, and search-type information such as prices, product specifications, usage rate, etc. whereas subjective information tends to be more personal, experience-based, narrative and thus subject to personal interpretations of the products/services such as wine, restaurants, and travel experiences. Hong and Park (2012) found that negative statistical online reviews are perceived more credible than negative narrative online reviews, and that attitudes toward the product are more positive both in the positive statistical and narrative review conditions than in the negative statistical and narrative review conditions. However, Klein and Ford (2003) found no differential effect produced by the review attributes. These studies on review attributes show that objective information has a more pronounced effect on consumer judgment than subjective information. That is, objectivity bias dominates over subjectivity bias.

In summary, inconsistent results found in studies about online review characteristics suggest that research with a more realistic design of online reviews is needed. In other words, online reviews may not solely be classified as positive vs negative or objective vs subjective. Rather, online reviews are a combination of both valence and attributes. A typical online review describes both positive/negative and objective/subjective information together. Accordingly, a combined effect produced by positive/negative and objective/subjective information included in online reviews has to be further investigated. This tentative conclusion comprises the first objective of the current study. Accordingly, the effects of the four different types of online reviews such as objective negative, subjective negative, objective positive, and subjective positive online reviews on consumers' message and product judgment was investigated, as shown in Figure 1.

The current study expects that objective negative online reviews may have the strongest effect on message usefulness, followed by subjective negative, objective

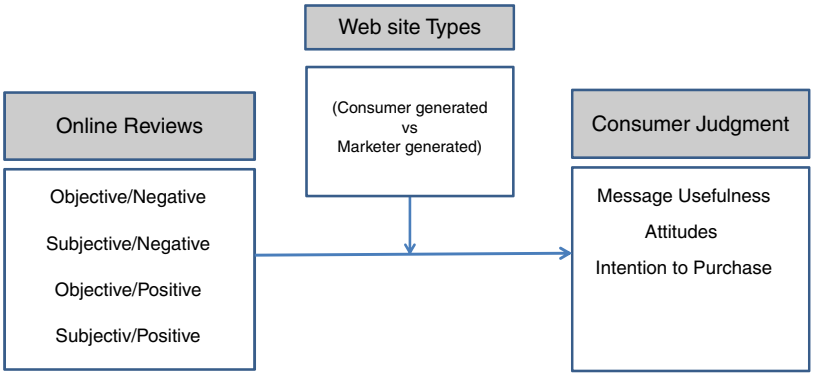

Figure 1.
Research model

positive, and subjective positive online reviews in descending order. However, this hypothesis is exploratory in its nature and the direction of the hypothesis is not designated, because it is not clear whether negative information is more influential than objective information in previous results. This combined effects produced by both the valence and attributes of the reviews were rarely investigated with the exception of Lee *et al.* (2009). Lee *et al.* (2009) examined the combined moderating effects produced by valence and extremity of the reviews. These authors reported that extremity and negativity together has a detrimental impact on brand attitude, brand attitude strength, and site attitude strength. Based on these discussions, following hypothesis is proposed:

H1. Objective negative reviews, subjective negative reviews, objective positive reviews, and subjective positive reviews may be rated differently in terms of message usefulness.

However, the effects produced by online reviews on consumers' product judgment may have an opposite direction. Doh and Hwang (2009), for example, demonstrated that positive reviews have a positive impact on attitudes toward the web site, product, and purchase intention, but no effect on message credibility. Hong and Park (2012) showed that product attitudes are more positive both in the positive statistical and positive narrative review conditions than in the negative statistical and negative narrative review conditions. These piecemeal evidences suggest that objective negative online reviews may have a strongest negative effect on attitudes toward and intention to purchase the reviewed product, followed by subjective negative, whereas objective positive and subjective positive online reviews will have a positive effect. Based on these discussions, the following two hypotheses are proposed:

H2 and H3. Objective negative online reviews would have a stronger negative effect on attitudes toward (*H2*) and intention to purchase (*H3*) the reviewed product followed by subjective negative, whereas objective positive reviews would have a stronger positive effect on attitudes toward (*H2*) and intention to purchase (*H3*) the reviewed product followed subjective positive reviews.

Moderating effects

As a fourth research trend, a few studies have introduced boundary conditions to better explain the inconsistent results between review characteristics and message effectiveness. As shown above, most past research demonstrated that a negativity effect dominates neutral or positivity effect (Herr *et al.*, 1991; Lee *et al.*, 2009; Xue and Zhou, 2010; Yang and Mai, 2010). However, Clemons *et al.* (2006), Gershoff *et al.* (2003), Lee *et al.* (2009), and Skowronski and Carlston (1989) showed a domination of positivity effect over negativity effect. In addition, Cheung *et al.* (2009) showed no difference of review valence on message credibility. To explain these inconsistent results, recent studies have introduced moderator variable, which is defined as one that systematically modifies either the form and/or the strength of the relationship between a predictor and a criterion variable (Sharma *et al.*, 1981). Personality and situational factors are investigated as moderators (Barron and Kenny, 1986). The boundary

conditions investigated include consumer traits, review writer's emotional or visual expressions, product category, consumer ratings, types of platforms, etc.

With respect to consumer traits, Park and Kim (2008) showed that while consumers with expertise tend to prefer attribute-centric reviews to benefit-centric ones, consumers with no expertise prefer benefit-centric reviews to attribute-centric ones. Zhang *et. al.* (2010) tested a moderating effect of consumers' consumption goals. They demonstrated that while consumers with promotion goals evaluate positive reviews more persuasive than negative ones, consumers with prevention goals evaluate negative reviews more persuasive than positive ones. Chang *et al.* (2013) demonstrated that the effect produced by group eWOM on brand community members' attitudes toward the negative events (far extension; dissimilar brand extension) is affected by members' levels of brand involvement. When the group eWOM support far extension, members with high brand involvement are strengthened by the group eWOM to promote favorable brand evaluations and attenuate negative impacts to the brand. Kim and Gupta (2012) demonstrated that negative emotional expressions in a single negative review decrease the review's negative information value and make consumer's product evaluations less negative, since consumers attribute the negative emotions to the reviewer's irrational dispositions (self-serving bias in attribution theory). Lin *et al.* (2012) showed that neutralized eWOM articles with visual information are rated higher than identical articles without visual information in terms of message quality, credibility, product interest, and purchase intention. Lee *et al.* (2013) demonstrated that positive reviews with angry-looking avatar rather than reviews with happy-looking avatar are rated higher in terms of causal attribution of the review to the product's performance, which subsequently has a positive effect on the strength of intention to purchase the reviewed product. However, they observed no difference between negative reviews with angry-looking avatar and negative reviews with happy-looking avatar.

Pan and Chiou (2011) showed that product category in conjunction with online review valence has a moderating effect on the product judgment of consumers. They showed that negative information for experience goods (vs credence goods) is seen as more trustworthy. Nettelhorst *et al.* (2013) tested an interactional effect of consumer reviews (case history) and consumer ratings (base rate) on attitudes toward a novel health beverage and reported a base rate neglect bias. These authors showed that: positive ratings and reviews affect attitudes positively, when both consumer ratings and consumer reviews are present, consumer reviews has more profound impact on attitudes toward the target health beverage regardless of the valence of consumer ratings. Qiu *et al.* (2012) showed that a conflicting aggregated rating decreases the review credibility and diagnosticity more for positive reviews than for negative reviews.

In addition to these various research trends, a couple of recent research proposed methods and/or system to detect influential reviews or review writers. Kaiser and Bodendorf (2012) combined text mining and social network analysis to identify opinions, communication relationships, and dialog acts of forum users and detect influential users and opinion tendencies. Liu *et al.* (2013) proposed a book review recommendation system, in which review-evaluation techniques were used to collect reviews from various heterogeneous sources on the internet. More research into these boundary conditions will improve our understanding about review characteristics and their effectiveness. In the present study, two different platforms are investigated as a moderator.

Web site platform. With respect to platforms, Bickart and Schindler (2001) investigated direct influences of web site types on interest in product topic and reported that consumers who gather information from independent online discussion forums reported greater interest in the product topic than did those consumers who acquired information from marketer-generated sources. Xue and Phelps (2004) demonstrated that the superiority of an online forum to a brand's web site to influence brand attitude appears when participants have low involvement with the product. However, Lee and Youn (2009) found that web site platforms have no direct impact on consumer judgment about a product such as attitude toward, intention to rent, and willingness to recommend the apartment to friends. Senecal and Nantel (2004) found no moderating effect between the types of products and web sites on the selection of a recommended product. These inconsistent results found on different platforms imply more research. Accordingly, as a second objective, the present study introduced online review web sites such as marketer-generated and consumer-generated brand community web site as a boundary condition between online reviews and consumers' judgments.

When consumers are on the internet, they usually do not know the identity of the review posters and/or their motivation, which makes it difficult to determine the true credibility and usefulness of the posted reviews. Accordingly, consumers tend to use cues to make causal inferences about the review posters' intention and motivation. One of the cues consumers use is the web site platform to which the review is posted. Web sites platforms are considered as information sources (Senecal and Nantel, 2004). Each web site has different purposes and provides different information. Previous studies have demonstrated that there are many different typologies in classifying web site platforms as is shown in Table II.

However, the platforms in the present study are classified into two different categories: marketer-generated and consumer-generated web sites. This classification is based on vested interest of operators. Sellers' web site such as Amazom.com, Corporate web pages, and commercially linked third party web site such as Mysimon.com and price.com can be included in the marketer-generated web site category. Whereas non-commercially linked third party web site such as Consumerreports.org, online discussion forum, and personal blogs are classified into the consumer-generated web site category. The individual or organization who/that owns and operates the web site has vested interests such as maximizing the number of visitors by controlling over the information posted. The operator can make additions or deletions to the information

Author(s)	Typology
Senecal and Nantel (2002, 2004)	Sellers' web site such as Amazom.com
	Commercially linked third party web site such as mysimon.com and price.com
	Non-commercially linked third party web site such as Consumerreports.org
Lee and Youn (2009)	Company brand's web site
	Personal blogs that contains personal diaries or journals
	Independent product review web site
Bickart and Schindler (2001)	Corporate web-pages
	Online discussions

Table II.
Classification of web site platforms

posted to better serve their users. Accordingly, whether a web site is marketer generated or consumer generated may serve as an important cue to consumers, because consumers may suspect that the reviews posted by various consumers on marketer-generated web sites are rewarded and the operator has selling intentions (Lee and Youn, 2009). A typical example of a marketer-generated web site is a brand's web site while a consumer-generated web site is owned and operated by an independent organization or individual to help general consumers make informed decisions by sharing their product experiences.

Web site platform as a moderator. In the current study, online reviews posted on a web site produced and operated by an individual is contrasted with online reviews on a company-generated web site. Even though Consumerreports.org can be classified as a non-commercially linked third party web site, it tends to take a more objective stance between consumers and companies than an individual consumer. Thus, the effect comparing online reviews posted on a personal web site to online reviews on a company-generated web site will be more pronounced.

This hypothesis is proposed based on the discounting principle from attribution theory (Kelly, 1973). Attribution theory predicts that if the consumer credits the review about a product to that product's actual performance, the consumer will perceive that the posted review is credible, have confidence in the accuracy of the review, and be persuaded by that review he/she has read. Because consumer-generated review web sites are known to be free of marketers' influence. Discounting principle in the attribution theory, however, predicts that, if the consumer suspects that the review is caused by incentives from the company, the consumer will discount the value of a product's actual performance reviewed as a reason for the poster to write such as review, perceiving that the poster is biased, and not be persuaded by that reviews (Lee and Youn, 2009; Sen and Lerman, 2007; Senecal and Nantel, 2004). According to this discussion, following hypotheses are proposed:

H4. Objective negative reviews and subjective negative reviews posted on a consumer-generated web site will be rated higher than those same reviews posted on a marketer-generated web site in terms of message usefulness, whereas objective positive reviews and subjective positive reviews posted on a consumer-generated web site will be rated lower than those same reviews posted on a marketer-generated web site.

H5 and H6. Objective positive and subjective positive online reviews posted on a consumer-generated web site will be rated higher in terms of attitudes toward (*H5*) and intention to purchase the reviewed product (*H6*) than those same reviews posted on a marketer-generated web site, whereas objective negative and subjective negative online reviews posted on a consumer-generated web site will be rated lower than those same reviews posted on a marketer-generated web site.

Method

Research design

The present study used experiments with a four (objective negative vs subjective negative vs, objective positive, vs subjective positive online reviews) by two (consumer-generated vs marketer-generated web sites) between subject design. A total of 480 participants

were randomly assigned to one of the eight conditions. Snowball sampling method, a non-probability sampling in which current respondents refer to and recommend subsequent respondents, was utilized in a wireless online environment on a smart-phone. Even though this sampling method is one of non-probability sampling methods, this sampling is considered relevant in studies such as word-of-mouth, opinion leaders, network, and buzz marketing (Keller and Berry, 2003).

Each respondent was identified with an individual number. One-half of the respondents was university students and the remaining half was from the general population. Over one-half of the mobile phone users were using smart-phones at the time of the experiment in South Korea. University students should not be problem as a relevant sample and are qualified because they tend to have smart-phones more than the general population, and search for information and purchase products using smart-phones more frequently than other population groups.

Stimuli

Experimental product. The smart-phone was chosen as the experimental stimuli for the experiment for two reasons. First, smart-phones appealed to the respondents and thus were easily accessed and purchased. Second, respondents had to show interest in knowing the opinions of other consumers regarding the target product. Accordingly, the present study selected a smart-phone, which satisfied these two conditions. The penetration rate of smart-phones in Korea is the highest in the world, and thus, consumers frequently use and purchase the product (Lee *et al.*, 2008). In addition, previous studies often refer to online reviews describing high-end products such as smart-phones (Mackiewicz, 2010; Mudambi and Schuff, 2010), which are considered as a relevant stimulus product. The smart-phone used in the present study has a fictitious brand name, Smart Ace.

Online consumer review. Before constructing online shopping malls to be tested, the authors observed various online review comments posted on various companies and consumer web sites. Based on these observations of the online reviews, sixteen different, and important attributes of smart-phones were identified. In addition, the number of online reviews, the number of lines in a review, and the letters found on a regular webpage were also identified. Through these observations and analyses, 30 different attributes and benefits of smart-phones were developed and put into a pilot test with 150 subjects. The pilot test asked about the valences and attributes of online reviews. With respect to online review valence, respondents in the pilot test rated online reviews as positive, negative, or neutral. With respect to review attributes, respondents described the reviews as subjective, objective, or neutral. Online reviews that more than 60 percent of the respondents in the pilot test rated as positive, and less than 20 percent rated as negative were classified into a positive review category. Meanwhile, online reviews that more than 60 percent of the respondents rated as negative, and less than 20 percent rated as positive were classified into a negative review. Review attributes were also classified using similar procedures. Based on these classifications, reviews were classified into one of four different conditions (positive and objective, positive and subjective, negative and objective, and negative and subjective), and each condition contained ten different descriptions. Objective positive reviews, for example, consisted of four objectives, four positive, one negative, and one subjective description. Subjective negative reviews contained four subjective, four negative, one objective, and one positive description. Similar procedures were applied

to create the remaining two reviews. These kinds of manipulation are found in previous studies (Lee *et al.*, 2008; Pan and Chiou, 2011).

Procedures and participants. The experiment was administered in an online context. In total, 20 trained graduate students who knew the product well and contents of the experiment approached approximately five friends and family members who own smart-phones and knew them very well, and asked them to participate in the experiment. Those who agreed to participate in the experiment received an invitation letter. The invitation letter was sent using a smart-phone-based application, called Kakaotalk, and contained a URL address button. The Kakaotalk application is pretty similar to, but more personal and popular than Facebook in Korea, and handles both text and multimedia files more easily. At the time of this experiment, approximately 74 percent of smart-phone users in Korea used this social application.

If a respondent pushed a link button contained at the end of his/her invitation letter, he/she was guided randomly to one of eight different experimental conditions. Even though the size of the smart-phone screen is relatively small, they look just like a regular internet webpage. The experimental web sites were constructed by a paid professional web site design firm and looked similar to professional smart-phone-based web sites frequently found in Korea. Participants were asked to imagine they were searching for information about a smart-phone, and the web pages they searched were a marketer-generated (www.SmartAce.com) or a consumer-generated (http://cafe.sobija.com/ACEuser; "sobija" in the IP address means consumer) brand community for the product, called Smart Ace. The respondents were asked to observe the first page of the experimental web site, in which the experimental treatments of the reviews were shown and then guided to survey questions. The first page of the web site contained explanations about what a marketer- or consumer-generated brand community is and various review comments posted by experienced consumers of Smart Ace. After reading the treatment, participants rated questions on online review usefulness, attitudes toward and intention to purchase the reviewed product, items for manipulation check, and other online review-related questions found on the second page and thereafter. To increase the external validity, the purpose of the experiment was not revealed. Most of the respondents, who were asked to answer what the purpose of the experiment was, did not identify the purpose of the research. When completing the questionnaire, the respondents were thanked for their participation in the experiment. Participants who did not answer all of the questions were re-directed to the beginning part of the experimental web site. After completing their questionnaires, the respondents were asked to call five friends and family members, explain the details of the experiment that they know of, and send the received experimental web pages to them. This snowball sampling continued until the number of respondents who answered the questionnaire for each of the eight conditions reached 80. Figure 2 shows a picture of sample pages of: marketer- and consumer-generated brand communities.

In total, 480 respondents participated in the experiment. Among them, approximately 47.5 percent of the respondents were males. 94.90 percent of the respondents were in their 20s and 30s; a majority of them (86.70 percent and 92.50 percent) were not married and had at least an undergraduate education. In total, 74.20 percent of the respondents were spending at least an hour to read online reviews per day and read more than ten reviews per session. Table III shows the demographics of the respondents.

Measurement. All measurement scales used in the present study, with the exception of items used in the manipulation check and demographics, were measured using

Notes: (a) Marketer generated; (b) consumer generated

Figure 2.
Sample pages of marketer- and consumer-generated brand communities

Construct	Classification	No	%
Gender	Male	228	47.50
	Female	252	52.50
Marital status	Married	416	86.70
	Unmarried	64	13.30
Age	< 20	2	0.40
	20-29.9	298	66.30
	30-39.9	128	26.60
	> 40	53	6.70
Education	High school	9	1.90
	Junior college	27	5.60
	University	340	70.80
	Graduate degree	104	21.70
Profession	Students	248	51.70
	Housewives	17	3.50
	Private employees	101	21.00
	Public employees	37	7.70
	Self-employed	13	2.70
	Professional	45	9.40
	Others	19	4.00
Time spent on reading online reviews before imminent purchase	Less than 30 min	21	4.40
	30 min. to one hr	103	21.50
	One to two hr	92	19.20
	Two to three hr	131	27.30
	Over three hr	133	27.70
The number of reviews reading per session	Less than 5	50	10.40
	5 to ⩽10	47	9.80
	10 to ⩽15	119	24.50
	15 to ⩽20	137	28.50
	More than 20	127	26.5

Table III.
Sample characteristics

a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree). Items used in the manipulation check were dichotomous variables (yes vs no). In all, three item measures of message usefulness were adopted from Sheinin *et al.* (2011). Attitudes toward the reviewed product are the consumers' overall affective reactions toward recommended product (Simonin and Ruth, 1998). Intention to purchase the reviewed product is an individual's predisposition toward purchasing the recommended product in the future (Macintosh and Lockshin, 1997). All measurement items used in the present study with their sources and their descriptive statistics such as item mean, concept mean, and Cronbach's α are found in Table IV. As we can see in Table IV, all constructs had mean values between 3.50 and 5.02. The average scores for attitudes and intention had relatively lower scores. All concepts used had α values greater than 0.94.

Results

Manipulation checks

In order to check the levels of the respondents' perceptions of the review valences and attributes, two items asked the respondents whether the online reviews were positive or negative, objective or subjective at the end of the questionnaire. The first item asked "whether the reviews they had read were objective or subjective" on a yes/no

Construct	Measurement items	Item mean	SD	Construct mean	α	Source
Review usefulness	I found the reviews are useful	5.04	1.24			Sheinin *et al.* (2011)
	The reviews helped me to shape my attitudes toward the smart-phone	5.02	1.24	5.02	0.94	
	The reviews helped me to make a decision regarding the smart-phone	5.00	1.33			
Attitudes toward the reviewed product	The smart-phone for which I have read the reviews was					
	Positive/negative	3.65	1.88	3.58	0.97	Simonin and Ruth (1998)
	Good/bad	3.52	1.81			
	Favorable/unfavorable	3.58	1.82			
Intention to purchase the reviewed product	I'm willing to use this product in future when I need to	3.53	1.89			Macintosh and Lockshin (1997)
	I'm willing to use this product very frequently	3.50	1.83	3.50	0.98	
	I'm probably willing to use this product in future	3.48	1.89			

Table IV.
Measurement items for each construct

dichotomy. The second item asked "whether the reviews they had read were negative or positive" on a yes/no dichotomy. Results from the χ^2 independence test showed that 76.25 percent of the respondents exposed to an objective review condition and 76.67 percent of the respondents exposed to a subjective review condition correctly identified their manipulation ($\chi^2_{(df=1)} = 134.408$). Meanwhile, 77.5 percent of the respondents exposed to a positive review condition and 75.4 percent of the respondents exposed to a negative review condition correctly identified their manipulation ($\chi^2_{(df=1)} = 117.074$). To check the manipulation for the web site design, respondents were asked "whether his/her web site was marketer-generated or consumer-generated" on a yes/no dichotomy. Results from the χ^2 independence test showed that 89 percent of the respondents exposed to the consumer-generated web site correctly identified his/her experimented web site ($\chi^2_{(df=1)} = 1{,}324.30$). These results suggest that the manipulations were successful. In addition, subjective knowledge about and involvement in smart-phone were measured and entered as control variables. Even though they affected our dependent measures, they did not distort or change the patterns our research variables produce when affecting dependent variables. Accordingly, these covariates were not further discussed.

Hypotheses testing

MANOVA was used to test all the proposed hypotheses. The MANOVA model in Table V was significant and had large effect sizes ($F_{\text{Usefulness, (df=8,472)}} = 1{,}123.97$, $p < 0.00$, $\eta^2 = 0.95$; $F_{\text{Attitudes, (df=8,472)}} = 714.64$, $p < 0.00$, $\eta^2 = 0.92$; $F_{\text{Intention, (df=3,472)}} = 597.97$, $p < 0.00$, $\eta^2 = 0.91$). The MANOVA results in Table V show that most of the hypotheses, with the exception of *H6*, were supported. In addition, the moderator, web site type, had main effects on both attitudes and purchase intention, but not on message usefulness. Specific statistical indices such as F value for each test, their partial eta squared, and the size of the effects are presented in Table V. Means, standard deviations, and cell sizes are listed in Table VI.

H1 proposed that four different reviews would be rated differently in terms of message usefulness. The MANOVA results in Table V show that the four different reviews were rated differently ($F_{(df=3,\ 472)} = 3.06, p < 0.028, \eta^2 = 0.02$) in terms of message usefulness. *Post hoc* analyses in Table VI show that objective negative reviews ($M_{\text{objective negative}} = 5.24$) were rated higher than other reviews such as subjective negative reviews ($M_{\text{objective negative}} = 4.94$), objective positive reviews ($M_{\text{objective positive}} = 5.10$), and subject positive reviews ($M_{\text{subjective positive}} = 4.81$). No differences were observed among subjective negative reviews, objective positive reviews, and subjective positive reviews. Thus, *H1* was partially supported.

H2 proposed that objective positive and subjective positive online reviews would be rated higher in terms of attitudes toward the reviewed product than that of the objective negative and subjective negative online reviews. The results in Table V show that the four different reviews were rated differently ($F_{(df=3,472)} = 258.18$, $p < 0.00$, $\eta^2 = 0.62$) in terms of attitudes toward the reviewed product. *Post hoc* analyses in Table VI show that objective positive reviews ($M_{\text{objective positive}} = 5.03$) and subjective positive reviews ($M_{\text{subjective positive}} = 4.97$) were rated higher than those of the objective negative reviews ($M_{\text{objective negative}} = 2.14$) and subjective negative reviews ($M_{\text{subjective negative}} = 2.14$). There were no differences between the objective positive reviews and subject positive reviews, and between objective negative reviews and subjective negative reviews. These results show that whether the reviews were objective or subjective, consumer attitudes toward the reviewed product were higher if the reviews contained positive information. The results show that *H2* was supported.

Source	Dependent var.	SS	df	MS	*F*	Significance level	η^2	Effect size
Model	Usefulness	12,154.96	8	1,519.37	1,123.97	0.00	0.95	Large
	Attitudes	7,147.57	8	893.45	714.64	0.00	0.92	Large
	Intention	6,813.10	8	851.64	597.97	0.00	0.91	Large
Online reviews (A)	*Usefulness*	*12.40*	*3*	*4.13*	*3.06*	*0.03*	*0.02*	*Small*
	Attitudes	*968.31*	*3*	*322.77*	*258.18*	*0.00*	*0.62*	*Large*
	Intention	*911.35*	*3*	*303.78*	*213.30*	*0.00*	*0.58*	*Large*
Web site types (B)	Usefulness	0.86	1	0.86	0.64	0.43	0.00	No effect
	Attitudes	31.18	1	31.18	24.94	0.00	0.05	Small
	Intention	15.17	1	15.17	10.65	0.00	0.02	Small
A×*B*	*Usefulness*	*38.14*	*3*	*12.71*	*9.41*	*0.00*	*0.06*	*Medium*
	Attitudes	*11.00*	*3*	*3.67*	*2.93*	*0.03*	*0.02*	*Small*
	Intention	*6.58*	*3*	*2.19*	*1.54*	*0.20*	*0.01*	*Small*
Error	Usefulness	638.04	472	1.35				
	Attitudes	590.09	472	1.25				
	Intention	672.23	472	1.42				
Total	Usefulness	12,793.00	480					
	Attitudes	7,737.67	480					
	Intention	7,485.33	480					

Table V.
MANOVA statistics

Table VI.
Means (standard deviations) for the effects of reviews on judgment

Dependent variables	Objective negative[a] ($n = 120$)	Subjective negative[b] ($n = 120$)	Objective positive[c] ($n = 120$)	Subjective positive[d] ($n = 120$)	Men difference ($n = 120$)
Message usefulness	*5.24 (1.11)*	4.94 (1.47)	5.10 (1.09)	4.81 (1.05)	a > b, c, d
Attitudes	2.14 (1.05)	2.14 (1.25)	*5.03 (1.23)*	*4.97 (1.07)*	a, b < c, d
Purchase intention	2.15 (1.04)	2.10 (1.04)	*4.87 (1.41)*	*4.89 (1.14)*	a,b < c, d

Notes: Tukey HSD was used in the *post hoc* analyses. The above results found in Table VI were used to test *H1*, *H2*, and *H3*. Mean differences are statistically different from each other at a $p < 0.05$

H3 proposed that objective positive and subjective positive online reviews would be rated higher in terms of intention to purchase than objective negative and subjective negative online reviews. The results in Table V show that the four different reviews were rated differently ($F_{(df = 3,\ 472)} = 213.30$, $p < 0.00$, $\eta^2 = 0.58$) in terms of intention to purchase. *Post hoc* analyses in Table VI show that objective positive reviews ($M_{\text{objective positive}} = 4.87$) and subject positive reviews ($M_{\text{objective positive}} = 4.89$) were rated higher than those of the objective negative reviews ($M_{\text{objective negative}} = 2.15$) and subjective negative reviews ($M_{\text{subjective negative}} = 2.10$). There were no differences between the objective positive reviews and subjective positive reviews and between the objective negative reviews and subjective negative reviews. These results show that whether the reviews were objective or subjective, consumers' purchase intention was higher if the reviews contained positive information. Accordingly, *H3* was supported.

The results found in *H1* through *H3* generally agree with previous studies demonstrating negativity and objectivity biases (Chiou and Cheng, 2003; Herr *et al.*, 1991; Lee *et al.*, 2009; Xue and Zhou, 2010; Yang and Mai, 2010; Lee and Koo, 2012). However, the results show that negativity bias is stronger than the objectivity effect. In addition, these results, by showing the combined effects of negative and objective information, may supplement to those found in the research of Lee *et al.* (2009), which showed that extremity and negativity together has a detrimental impact on brand evaluations.

H4 proposed that objective negative and subjective negative online reviews posted on a consumer-generated web site would be rated higher in terms of message usefulness than those same reviews posted on a marketer-generated web site, whereas objective positive and subjective positive online reviews posted on a consumer generated web site would be rated lower in terms of message usefulness than those same reviews posted on a marketer-generated web site. The results in Table V show that the interactional effect of web site type in conjunction with the four different reviews was rated differently ($F_{(df = 3,472)} = 9.41, p < 0.00, \eta^2 = 0.06$) in terms of message usefulness. Comparisons of the mean values shown in Table VII show that this hypothesis was partially supported. There were no statistical differences between the objective positive reviews ($M_{\text{marketer-generated}} = 5.18$ and $M_{\text{consumer-generated}} = 5.02$) and objective negative reviews ($M_{\text{marketer-generated}} = 5.24$ and $M_{\text{consumer-generated}} = 5.23$). However, there were differences between subjective negative ($M_{\text{marketer-generated}} = 4.43$ and $M_{\text{consumer-generated}} = 5.44$) and subjective positive reviews ($M_{\text{marketer-generated}} = 5.06$ and $M_{\text{consumer-generated}} = 4.59$). These results imply that as long as the reviews contain objective information, consumers do not discriminate consumer-generated or marketer-generated web sites when they collect product information. However, when the reviews contain subjective and negative information, they think information from consumer-generated web sites are more useful than the information posted on marketer-generated web sites, whereas when the reviews are subjective and positive, they perceive information posted on marketer-generated web sites more useful than the information on consumer-generated web sites. These results show: that consumers do not distinguish whether they are marketer generated or not when they gather objective information when the information is objective, and that consumers in a major way perceive negative experience-based information of other consumers from consumer-generated web sites more useful than the same information gathered from marketer-generated web sites. These results coincide with previous assertion that experienced-related information is more difficult to judge and accordingly consumers tend to rely on other consumers'

Table VII.
Means (standard deviations) of consumer judgment by web site type

Dependent var.	Review attribute	Web site type: Marketer generated ($n = 240$)		Consumer generated ($n = 240$)	Total
Usefulness	Objective negative	5.24 (1.09)	=	5.23 (1.14)	5.24 (1.11)
	Subjective negative	*4.43 (1.59)*	<	*5.44 (1.15)*	4.94 (1.47)
	Objective positive	5.18 (1.13)	=	5.02 (1.05)	5.10 (1.09)
	Subjective positive	*5.06 (1.09)*	>	*4.56 (0.94)*	4.81 (1.05)
	Total	4.98 (1.28)	=	5.06 (1.12)	5.02 (1.20)
Attitudes	Objective negative	2.33 (1.25)	=	1.95 (0.78)	2.14 (1.05)
	Subjective negative	*2.68 (1.42)*	>	*1.66 (0.77)*	2.17 (1.25)
	Objective positive	5.16 (1.35)	=	4.89 (1.09)	5.03 (1.23)
	Subjective positive	5.15 (1.10)	=	4.78 (1.02)	4.97 (1.07)
	Total	3.83 (1.84)	=	3.32 (1.78)	3.58 (1.83)
Purchase intention	Objective negative	2.34 (1.29)	=	1.96 (0.67)	2.15 (1.04)
	Subjective negative	2.46 (1.40)	=	1.73 (0.85)	2.10 (1.21)
	Objective positive	4.94 (1.49)	=	4.79 (1.33)	4.87 (1.41)
	Subjective positive	4.97 (1.37)	=	4.81 (0.86)	4.89 (1.14)
	Total	3.68 (1.88)	=	3.32 (1.76)	3.50 (1.83)

Note: Figures in parenthesis represent standard deviations

opinion found in consumer-generated web sites when they are engaged in purchase situation (Pan and Chiou, 2011).

H5 and *H6* proposed that objective positive and subjective positive online reviews posted on a consumer generated web site would be rated higher in terms of attitudes toward (*H5*), and intention to purchase the reviewed product (*H6*) than those same reviews posted on a marketer-generated web site, whereas objective negative and subjective negative online reviews posted on a consumer-generated web site would be rated lower than those same reviews posted on a marketer-generated web site. The results found in Table IV indicate *H5* ($F_{(df=3,472)} = 2.93$, $p < 0.03$, $\eta^2 = 0.02$) was supported, but *H6* was not ($F_{(df=3,472)} = 1.54$, $p < 0.20$, $\eta^2 = 0.01$). The feasible explanation for *H6* not being supported may be related to the distal nature of intention to purchase. That is, unlike usefulness and attitudes, intention to purchase is further away from perceptions related to stimuli to have an effect. Rather, perceptions related to online may affect intention indirectly, which is mainly mediated by usefulness and attitudes. In the case of *H5*, comparisons of the means as in Table VII show that this hypothesis was partially supported. The means show that attitudes were rated higher if the reviews were positive, and rated lower if the reviews were negative in both of the web sites. However, note that when the reviews were both subjective and negative, attitudes were rated much lower in a consumer-generated web site than in a marketer-generated web site. This result is just the opposite of the results found in *H4* (see Figure 3 for pictorial display for the results for *H4* and *H5*).

The results found in *H4-H6* are summarized such that: when consumers gather objective information, they do not distinguish between marketer- and consumer-generated web sites; consumers are biased toward collecting negative subjective information of other consumers' personal experiences from consumer-generated web sites; and when it is subjective negative reviews, attitudes were rated much lower in a consumer-generated web site than in a marketer-generated web site. These results confirm potential moderating impacts of situational differences raised by previous studies, which included consumers' levels of expertise, (Park and Kim, 2008), subjective knowledge (Lee and Koo, 2012), and product category (Pan and Chiou, 2011).

Conclusion and discussion

Discussion and implications

Previous studies showed that while negativity and objectivity biases were dominant, combined effects produced by valence and attributes of the reviews and moderating variables were rarely investigated. Building on this tradition of research, the current study extended prior research on two different fronts by examining the simultaneous effect of review valence as well as the objectivity/subjectivity of the online reviews and the moderating effect of the web site platform on consumer judgment. The results found in this study demonstrated that: an objective negative online reviews were rated higher in terms of message usefulness compared to the other types of online reviews; positive reviews, whether they are objective or subjective, were rated higher in terms of attitudes toward and intention to purchase the reviewed product; and the effects of online reviews moderated by e-WOM platforms on consumer judgment were supported. The present study has implications in terms of theories and practices.

With respect to theories, the present study, first, extends prior studies by examining the effects produced by both positivity/negativity valences and objectivity/subjectivity attributes of the online reviews. Most previous studies have investigated only one

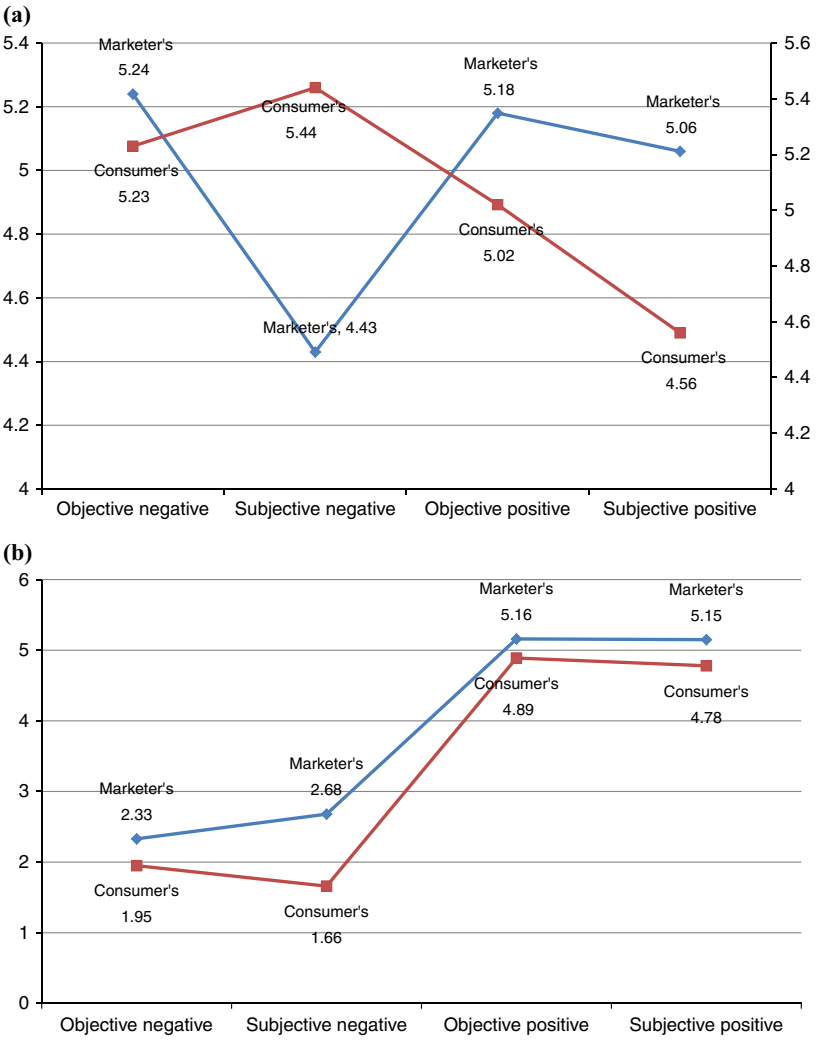

Figure 3.
Effects of reviews on usefulness and attitudes as a function of web site type

Notes: (a) Message usefulness; (b) attitudes

aspect of online reviews such as negativity/positivity and/or objectivity/subjectivity. However, the present study extends the previous knowledge by demonstrating that the combined effects of negativity and objectivity are more effective in changing consumer judgment for message and product. Second, the present study contributes to extant knowledge by examining the moderating effect arising from review characteristics and web site platforms on consumer judgment. The present investigation about the moderating role of different platforms confirms that web site platforms are not an independent variable, refuting the results found in Lee and Youn (2009), rather they are moderators, which extends previous research about moderators such as consumers' levels of expertise, (Park and Kim, 2008), subjective knowledge (Lee and Koo, 2012), and involvement (Xue and Phelps, 2004).

There are several practical implications derived from the present results. First, with respect to the results found in *H1*, managers are advised to manage experience-based negative product information for the products/services and use them carefully, since consumers tend to perceive other consumers' experience-based negative information found in reviews more useful than other types of reviews, especially when the information is on consumer-generated web sites. Accordingly, managers are advised to keep the level of product quality high and reduce any procedural mistakes, which are usually found in customer service sectors such as delivery and after sale services.

Second, managers have tried to encourage consumers to post positive product reviews, which had been paid for in terms of increased sales (Lee *et al.*, 2009; Chatterjee, 2001). In addition, managers sometimes have tried to manipulate online reviews on their web sites. Recent news reported misconducts done in major celebrity-owned online shopping malls. One of their misconducts was manipulation of consumer reviews by their employees. One of the shopping malls manipulated as many as 997 consumer reviews (each employee was forced to write five reviews per day), biased toward the operator (e.g. "Now I know the reason why this brand is so popular. This is amazing"). These practices seem to pay because positive reviews wherever they are posted have a positive effect on attitudes toward and intention to purchase the reviewed products. Accordingly, managers are recommended to engage in inducing consumers to post positive online reviews without using any illegal practices. In addition, they are suggested to reduce negative reviews posted on both company and consumer-generated brand communities. Origins of the negative reviews found in the production and marketing of the products should be removed in advance.

Third, managers are especially advised to manage experience-based negative reviews found in consumer-generated brand web sites, which have a detrimental negative impact on attitudes toward the reviewed product. Speedy resolution of complaints raised by consumers will do well in eliminating or reducing the increased experience-based negative reviews on consumer-oriented brand web sites.

Limitations and directions for future research

The present study has several limitations. First, the e-WOM reviews in the current study were classified based on positivity/negativity and objectivity/subjectivity into four different kinds of reviews. Even though this classification somewhat overcomes previous studies, they may not represents all aspects of online reviews. Thus future studies should investigate more diverse and stratified aspects of online reviews. Second, the current study investigated the differential effects produced by the characteristics of the online platforms. However, different categories of products and many aspects of individual characteristics may also produce different moderating effects. With respect to information processing, individual differences in cognitive thinking, search patterns (global vs local), and situational difference may moderate the effects produced by reviews characteristics on consumer judgment. Future study should consider these variables as potential moderating variables. Third, the current study used a smart-phone as an instrument product, for which consumers may write and read online reviews. Smart-phones are basically classified as a utilitarian product, which is consumed to meet functional needs and obvious in terms of its description of the features. However, more users use this product for hedonic purposes to satisfy their emotional and experiential benefits. The present study has not considered these diverse aspects. Accordingly, the present results should be interpreted cautiously. Fourth, the

current study used a convenient sample of students and general population, who own smart-phones and used the Kakaotalk application. Even though these respondents represent valid users of smart-phones and online reviews, they may not have represented all types of customers. Future studies should use more diverse samples taken from different social and cultural groups.

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