

How Do Negative Online Consumer Reviews Influence Consumer Product Attitude Depending on Involvement?

Jumin Lee^a, Do-Hyung Park^a, and Ingoo Han^a

^a 207-43, KAIST Graduate School of Management, Chungrayganri2-dong, Dongdaemun-gu, Seoul, Korea
Tel: +82-2-985-3685, Fax: +82-2-958-3604, E-mail: leejumin@kgs.m.kaist.ac.kr

Abstract

Online consumer review (OCR) is information that consumers create after buying a product from the consumer's view point. This study investigates the effect of negative OCR as one of the negative electronic word-of-mouths (eWOM) on consumer product attitude using the negativenss and the quality of negative OCRs with involvement. The involvement moderates the effects of the negativenss and the quality of OCR on consumer product attitude. The low-involvement consumers are more influenced by the negativenss than high involvement consumers. The high involvement consumers are influenced by the quality of negative OCRs while the low-involvement consumers are not.

Keywords:

Online Consumer Review(OCR), Electronic Commerce, Negativeness of Online Consumer Review, Involvement, Information Quality, Elaboration Likelihood Model(ELM), electronic Word-of-Mouth(e-WOM)

Introduction

Many studies have shown that WOM affects consumer attitudes about products and services [17, 13]. The WOM is transformed to various types of electronic WOM (eWOM). Entertainment guides such as Citysearch solicits display the user rating of restaurants, bars, and shops [25]. With exponential growth of internet usage, expansion of the eWOM is changing people's behavior. People make offline decisions based on online information [14] and rely on other consumer opinions to make decisions from what movie to watch to what stocks to invest in [12].

OCR is the product information which consumers create by allowing consumers to post comments on the seller's website about the product from a user's perspective [3]. Although the studies on positive OCR have investigated the effect of OCR as word of mouth or part of the marketing communication mix, researchers are probably paying little attention to negative OCR [10, 12, 14]. Negative WOM has a stronger influence on customer's brand evaluations [21, 33] and purchase intentions of potential buyers than positive WOM [5, 8, 33]. However, the negative WOM is difficult to be observed or managed by marketers. The

companies could cope with customers complains when an individual makes a contact with companies. The companies run post and passive way of action. Therefore, researchers have studied indirect ways to mitigate the harmful effects of a negative WOM with advertising [29] and developed the advertising process and response with negative WOM [30]. However, negative OCR unlike negative WOM can be observed. Moreover negative OCR is manageable in terms of online sellers' decisions about ordering of OCRs, types of reviews to post such as star rating or experience story and inclusion of names, date, and pictures.

In OCR, moderating factors are not investigated from information processing perspective. In our reviews of the many approaches to attitude change employed in social and consumer psychology, the concept of "involvement" is an important moderator of the amount and type of information processing elicited by persuasive communication [6, 23]. The involvement could moderate the effect of OCR.

This paper investigates the effect of the negativenss of OCR and the quality of negative OCR with involvement to answers the following questions:

- (1) Does the negativenss of OCRs influence consumer product attitudes?
- (2) Does the involvement moderate the effect of the negativenss of OCRs?
- (3) Does the quality of negative OCRs influence consumer product attitudes?
- (4) Does the involvement moderate the effect of the quality of negative OCRs?

Literature Review

Positive and Negative OCRs

During purchase processing, consumers want to have attribute-value information and recommendations from information sources [26]. OCR has the roles of an informant and a recommender. With the two roles, OCRs have enough capability to influence consumers' decision-making.

According to negative WOM research, the negative WOM has a stronger influence on customer's brand evaluations and purchase intentions than positive WOM [1, 21, 33]. In this sense, the effect of negative OCR [9] may be stronger than positive OCR. Besides of the characteristics of OCR such as voluminosity and reachability, the effect of negative OCR could be expected more serious than

traditional WOM. Customers may distribute their complaints globally and unhappy customers try to strengthen their individual complaints through collective protest actions. Additionally, angry customers hang a boycott message of the products or companies on their own homepage, so other people can click on different areas and get detailed information on the incident to boycott the products [31]. Therefore, the negativeness of OCR could be an important factor for OCR research.

The negativeness is related to the number of consumers who have been unsatisfied with the product among consumers who have already bought the product [9, 10]. A large number of positive reviews could reduce consumers' perceived risk of purchasing while negative reviews could increase the risk. In this study, the negativeness is defined as the ratio of the number of negative reviews to total number of reviews. In this sense, OCR with low negativeness means that positive reviews are much more than negative reviews and seems to result in the increase of favorability toward the product. On the other hand, OCR with high negativeness could deteriorate product attitude.

Hypothesis 1: As the negativeness of OCR increase, a consumer product attitude becomes unfavorable.

The Negativeness of OCR and Involvement

Recent research in consumer behavior and social psychology has focused on the concept of "involvement" as an important moderator of the amount and type of information processing elicited by persuasive communication [6, 23]. This view stems from the Elaboration Likelihood Model (ELM), one of the most active studies in consumer behavior for the past 20 years. This theory can help to explain the reaction of consumers to OCRs by focusing on the kind of information-processing procedures that they follow in response to OCRs. The ELM is about the processes responsible for attitude change and the strength of the attitudes. The model suggests both motivation and ability to process information are important variables in the evaluation of the message such as OCR. The likelihood of elaboration is influenced by the individual's motivation and ability to process [7, 23]. Motivation reflects a person's willingness and intention to process the information [18]. Involvement with a product equips a consumer with the ability and motivation to initiate product-related conversation with others [1, 4]. When involvement is high, individuals have motivation to comprehend the salient information and tend to elaborate the meanings during the comprehension stage of information processing. When involvement is low, however, individuals will rely on peripheral cues from the stimulus such as number of arguments. Low-involvement consumers could be more salient to the change depending on the negativenss of OCR than high-involvement consumers.

Low-involvement consumers who lack interest in information search employ other easier methods of reaching a decision - like simply asking others [20]. These low-involvement consumers are likely to avoid the effort of information search and rely instead on WOM such as OCR.

Thus, low-involvement consumers are likely to be influenced more by negativeness of OCRs than high-involvement consumers.

Hypothesis 2: The negativeness of OCR influences low-involvement consumers more than high-involvement consumers.

The Quality of Negative OCR and Involvement

The MIS literature represents information quality as how information is credible, objective, timely, understandable and sufficient [2, 22]. It is generally known that the better and more the information is, the greater the user satisfaction is. As consumer satisfaction becomes greater, their product attitude becomes favorable. Therefore, information quality can affect consumer product attitudes positively. In marketing, the strong messages which are understandable and objective are more effective than weak ones which are emotional and subjective [23, 27].

There is no standard information format for OCR. For this reason, OCRs are different among one another. For example, some reviews are subjective, emotional and having no reason for arguments. On the contrary, other reviews are specific, clear and having reasons for arguments. In this study, we define review quality as the level of each review's contents from the perspective of information characteristics (relevance, understandability, sufficiency and objectivity). Previous studies consistently have found the interaction effect between the quality of argument and involvement [16]. Low-involvement consumers simply accept what other consumers recommend since they have low motivation to process other consumers' opinions. Because the low-involvement people do not have enough information sources to process high quality reviews, the level of quality do not make different effects on product attitudes. That is, the review quality is less important for them while the number of OCRs to show product popularity is more important as a peripheral cue. However, the high-involvement people have enough information sources to process high quality reviews which are logical and persuasive with sufficient reasons based on the specific facts about the product. High-quality reviews are useful information, which leads to higher purchasing intention.

We suggest that the quality of negative reviews differently influence consumer product attitudes depended on involvement. Negative reviews of high quality may influence consumers rather than negative reviews of low quality.

Hypothesis 3: The high-involvement consumers are influenced by negative reviews of high quality more than negative reviews of low quality.

Hypothesis 4: The low-involvement consumers have no different response depending on the quality of negative reviews.

We conduct two experiments in this study. The first experiment investigates the effect of negativeness of OCR and the moderating effect of involvement. The second experiment tests the quality of negative OCR and the

moderating effect of involvement.

Experiment 1

Research Methodology

Experiment Design and Subjects

Experiment 1 has a 2(involvement: low and high) x 2 (the negativeness of OCRs: low and high) full factorial design. The subjects are eighty four college students who are randomly assigned to conditions and are given an award. A pretest is conducted to decide a total number of OCRs before the main experiment. Along a pretest results, the number “eight” is selected as the appropriate number of OCRs in this study. All OCRs are based on real OCRs from online shopping malls. Each OCR includes a title, a poster name and contents. The length of an OCRs is set at about 3 lines (150 characters) to eliminate the effect of varying lengths because the length of OCRs can affect information quality and quantity [11]. We replicate the product information page based on a real internet shopping mall. The location of the OCRs is under the product information. An electronic product, PMP (Portable Multimedia Player), is used for our study. Figure 1 shows the experiment website.

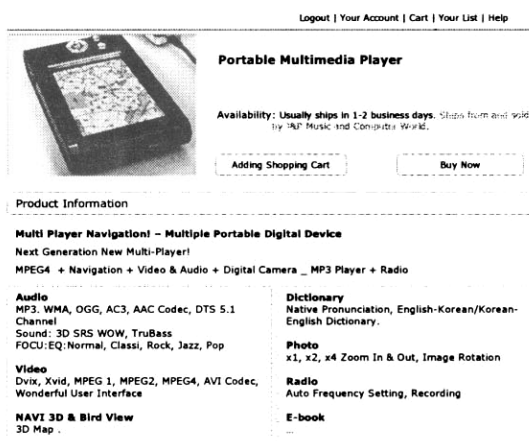


Figure 1 – The Experimental Shopping Mall Website

Variables and Experiment Procedures

The negativeness of OCR is an independent variable while involvement is a moderating variable in this experiment. The operational definition of the negativeness of OCR is the ratio of the number of negative OCRs to the total number of OCRs. “High-negativeness of OCR” is operationalized with four negative OCRs among eight OCRs, while “low-negativeness of OCR” is operationalized with two negative OCRs.

Current literature on e-commerce defines the shopping tasks that consumers conduct online as two major types: searching and browsing [15]. Using this concept, subjects are informed about a different product situation message on the same product using searching and browsing [19]. The dependent variable is consumer product attitude. The term attitude is used to refer to a reviewer’s overall evaluation of

persons, objects, and issues [24]. The attitude toward evaluating product is measured by four items with paired anchors [32].

There could exist the confounding effects of variables such as brand effect, prior product knowledge, and personal trait toward OCRs. To eliminate brand effects, the brand name is hidden. The prior product knowledge and personal trait toward OCRs are used as covariate variables.

The procedure consists of three parts. First, we explain this experiment and the contents of experiment to subjects. Before subjects enter the shopping mall site, we give involvement stimuli. Second, the virtual shopping mall site is provided for each subject. The shopping mall site contains the target product information including a product picture and OCRs. Finally, the subjects answer the questionnaires which consist of dependent variables, manipulation check, and demographic information. The subjects in all cells are given the same questionnaire.

Results

To assess the manipulation of OCR negativeness, two questions about the overall recommendation and evaluation are asked. There exists the difference of perceived negativeness between low and high (ML = 3.05, MH= 4.21, $p < 0.01$). As a check on the involvement, subjects are asked to try to recall the functions that are presented in the shopping mall [28]. The subjects in the high involvement group significantly recall more than those in the low-involvement group ($p < 0.05$). It means that the high involvement condition prompts extensive processing of the product information. Thus, our manipulations of negativeness and involvement are successful.

To test the hypotheses, we perform an ANCOVA with prior product knowledge and personal trait toward OCRs. The covariate effect of prior knowledge is not significant and the personal trait toward OCRs (Cronbach’s alpha : 0.753) is not significant. Cronbach’s alpha is 0.828 for the consumer product attitude.

Table 1 - Means, Standard Deviations of Consumer Product Attitude: Experiment 1

Involvement	Low			High		
	Low	High	Diff.	Low	High	Diff.
Means (Standard Deviations)	3.78 (0.71)	2.70 (0.76)	1.08	3.63 (0.57)	3.23 (0.70)	0.40

Table 2 – Summary of Results: Experiment 1

Variables	F	P
Involvement	1.818	0.181
Negativeness	23.980	0.000
Involvement x Negativeness	4.515	0.037
Personal Trait toward Reviews	0.048	0.828
Prior Product Knowledge	1.101	0.274

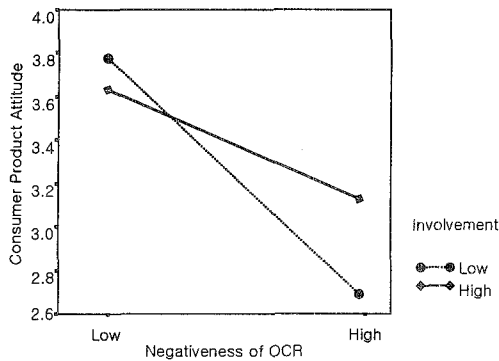


Figure 1 – Negativeness of OCR and Involvement

The mean and standard deviations of the dependent variable are presented in Table 1. Figure 2 shows the results. Table 2 represents summary of all results. The main effect of negativeness is significant. It means that subjects with low-negativeness of OCR have more favorable attitudes (H1 accepted). The interaction between the negativeness of OCR and involvement is significant. The attitude change by the OCR negativeness is assessed through one-way ANOVA using a planned contrast. As the negativeness of OCR increases, the attitude change of low-involvement consumers is much greater than that of high-involvement consumers (planned contrast, $F(3, 83) = 10.203, p < 0.01$) (H2 accepted).

When the negativeness is low, the main effect of involvement is not significant. However, the attitude of low and high involvement could be different depending on the quality of negative reviews. If the quality of OCR is low, high involved consumers would not change their attitude. To investigate the quality effect of negative reviews with involvement in the low negativeness of OCR, additional experiment is conducted.

Experiment 2

Research Methodology

Experiment Design and Subjects

Experiment 2 has a 2 (involvement: high vs. low) x 2 (the quality of negative OCRs: high vs. low) full factorial design. The subjects are eighty six students in a management program who are randomly assigned to conditions with an award. The quality of negative OCRs is manipulated using the dimensions of the quality attribute including relevance, objectiveness, understandability, and sufficiency. High-quality OCRs are product-relevant, expressing understandably, having sufficient reasons for the opinion, and objective. A low-quality OCR is emotional, subjective, without reason, and difficult to understand. That is, low-quality OCRs presented subjective feelings, interjections, and non-relevant information.

Before the main experiment, a pretest was conducted to determine the quality of each OCR. Along the pretest results, two high-quality negative OCRs and two low-quality negative OCRs are selected. The measure of low negativeness of OCR in experiment 2 is the same as that of OCR in experiment 1. The quality of negative OCRs

is used for an independent variable. As experiment 1, product attitude are used for a dependent variable and involvement is a moderating variable. The control variables are the same as experiment 1. Table 3 shows the examples of negative reviews.

Table 3 – Examples for Negative OCRs : Experiment 2.

Low Quality	High Quality
<p>Should have known better It has been the worst investment I have done in all my life. I don't know why I choose it! That is WACK! Save your money and buy anything else...</p>	<p>Not so great *very* limited battery life! It also has no hold button, which means I have to take out the batteries when I'm not listening. Sometimes, it makes a really high pitched buzz in the earphones...</p>

Results

The subjects' responses on the manipulation checks relevant to the quality of OCRs is examined (Cronbach's alpha : 0.897). The difference between low and high-quality negative OCRs are significant ($p < 0.05$). The subjects in the high involvement group significantly recall more than those in the low-involvement group ($p < 0.05$).

We run ANCOVA with prior product knowledge and personal trait toward OCRs. Both covariate variables are not significant: personal trait toward OCRs (Cronbach's alpha : 0.788) and prior product knowledge. Reliability for consumer product attitude is 0.780. The main effect of quality is significant and the main effect of involvement is not significant. The interaction effect between involvement and quality is significant. When involvement is high, the effect of negative OCR quality is significant ($t = 3.348, p < 0.01$) (H3 accepted). When involvement is low, the effect of negative OCR quality is not significant ($t = 0.139, p = 0.449$) (H4 accepted). This result shows that high-involvement subjects have different product attitudes depending on the quality of negative OCRs while low-involvement subjects do not have different product attitudes depending on the quality of negative OCRs. These results are consistent with the predictions of the ELM. Figure 3 shows the results. Table 3, 4 represents summary of all results.

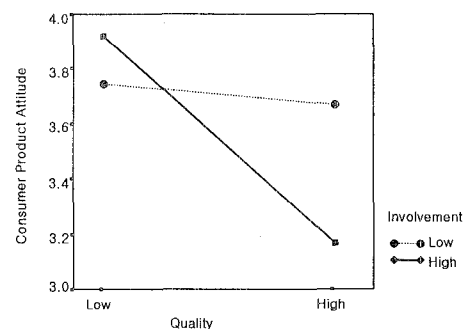


Figure 2 – Negative OCR Quality and Involvement

Table 4 – Means, Standard Deviations of Consumer Product

Attitude: Experiment 2

Involvement Quality	Low	High
Low	3.798 (0.705)	3.943 (0.752)
High	3.608 (0.910)	3.155 (0.792)

(): Standard Deviation

Table 5 – Summary of Results: Experiment 2

Variables	F	P
Involvement	0.883	0.350
Quality of Negative Reviews	5.447	0.022
Involvement x Quality of Negative Reviews	3.956	0.049
Personal Trait toward Reviews	3.502	0.065
Prior Product Knowledge	0.026	0.873

Conclusion

Summary Results

The first experiment shows that the effect of OCR negativity and the moderating effect of involvement on consumer product attitudes. The results indicate that consumers are influenced by the negativity of OCR. High negativity of OCR makes less favorable attitudes than low negativity of OCR. Both high and low-involvement subjects are influenced by negative OCR. But the attitude change is different between low and high involvement. The attitude change with low-involvement is greater than the attitude change with high involvement. In the low negativity of OCR, there is no difference between low and high involvement. According to ELM, however, the quality of negative OCR could make difference between low and high involvement. Additional second experiment shows the quality effect of negative OCRs and the moderating effect of involvement on consumer product attitude.

All results are consistent with ELM approach. Various message factors such as the mere number of OCRs can serve as simple cues and affect judgments when the involvement is low. The attitudes of low-involvement consumers result from low-effort scrutiny of information and the casual use of resource processes such as the number of positive OCRs. Low-involvement consumers unlike high involvement consumers have less motivation to comprehend the product information and rely on the number of OCRs as a peripheral cue. Moreover they recognize the number as a sign of popularity using heuristics. However, high involvement consumers are influenced by the quality more than low-involvement consumers.

Academic Contributions

This study explains the effects of negative eWOM. Because traditional WOM in offline environments is not measured easily, it is difficult to understand the effects of the quality and negativity of WOM message. However, eWOM is observable, so the study is able to investigate the effects of

the quality and negativity of eWOM message. Besides, this study contributes to investigate the relationship between involvement and eWOM.

Moreover, this study extends the use of ELM to e-Commerce environment. Since OCR plays a role as informants to provide additional product information, it can be explained by applying the ELM for the consumer information processing.

Practical Contributions

The results have business implications in several ways. This study could give rationales for the summary information such as the proportion of positive to negative OCRs and the number of positive and negative OCRs because the summarized number information is useful for information processing of OCRs and influence the consumer attitude especially for low-involvement consumers.

Second, this research provides a click-stream strategy for using the online shopping behavior. If a seller has more positive OCRs already, the marketer had better induce more impact from consumers by showing the ratio or percentage information of negative and positive OCRs when consumers browse a website (low-involvement).

Third, this study could provide managerial implication to sellers (or online mall managers). Because OCRs give benefit to or hurt online sellers depending on OCR contents, OCR management will be indispensable in the future. Especially negative OCR has a more powerful impact on the consumer attitude than positive OCR, so sellers should keep watching the quality and number of negative OCRs rather than positive OCRs. Sometimes, there exist too subjective and unreasonable negative OCRs. The existence itself of these OCRs negatively influence consumer product attitude. Although the negative OCR include non-related information (low quality), the effect could occur for low-involvement consumers. Thus, the content of OCR needs to be observed before uploading.

Limitations and Future directions

In this experiment, students are used as subjects and one high-tech product is used. The extension of this study to other product categories would be interesting because the review contents can be different according to the product types. Persuasive information is processed by consumers sequentially over time. Placement of the negative attributes may be a critical aspect of the negative reviews. Thus, the order in which the consumer receives and processes attribute information may affect the impact of the message.

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