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Rapid Communication

How Consumers Evaluate eWOM (Electronic Word-of-Mouth) Messages

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Abstract

This experiment explored how consumers evaluate electronic word-of-mouth (eWOM) messages about products. Each participant was exposed a 10-message set in a single board. Five groups were manipulated in terms of their ratios of positive and negative messages. The result showed significant differences across various sets of eWOM messages. Although more positive sets showed higher scores in many cases, this was not true in all situations, especially for the case of credibility. Involvement and prior knowledge partially moderated the relationship between the ratio of messages and the eWOM effect. The credibility of Web sites and eWOM messages can be damaged in the long run if all of the eWOM messages are positive.

Introduction

With the emergence of the Internet, eWOM (electronic word-of-mouth) has become an important influence on consumers' product evaluation. Prospective customers visit Web sites and read reviews from other customers (eWOM) to learn more about a product before making a purchase. In South Korea, while traditional media have shown a drastic decline as information sources, 80% of consumers refer to the postings about products or customer reviews on the Internet when they need product information.[1]

Because of its anonymous nature and wide range of contents, the power of eWOM is expanding. There are several critical antecedents of eWOM effects. First, the direction of eWOM messages (positive–negative) affects the customer's (reader's) response: customers are more likely to rely on eWOM messages if the direction of the messages are all the same. The consensus in eWOM represents the degree of agreement between two or more users regarding a product or its performance.[2] Therefore, the eWOM messages with higher consensus can be more persuasive and powerful than messages with lower consensus.

H1: The more positive sets of multiple eWOM messages would yield higher eWOM effects than the less positive sets.

Second, researchers widely agree that consumer-related factors, such as involvement with and prior knowledge about the product, greatly influence word-of-mouth effects.[3] As widely known, consumers tend to elaborate their information processing as their involvement with the product is increased. It is necessary to examine their relationships in the context of eWOM communication. Thus, the following hypotheses were proposed to investigate the interaction effects between these factors and the direction of messages on eWOM effects.

H2: There would be interaction effects between the involvement with a product and the ratio of positive messages on the eWOM effects.

H3: There would be interaction effects between prior knowledge about a product and the ratio of positive messages on the eWOM effects.

The current study investigated the causal relationship between the ratio of eWOM messages (positive–negative) and eWOM effects with the moderating roles of involvement and prior knowledge. The research design in Figure 1 represents the hypothetical relationships among these variables.

Methods

One hundred forty-three samples were collected in three universities in South Korea with self-administered question-

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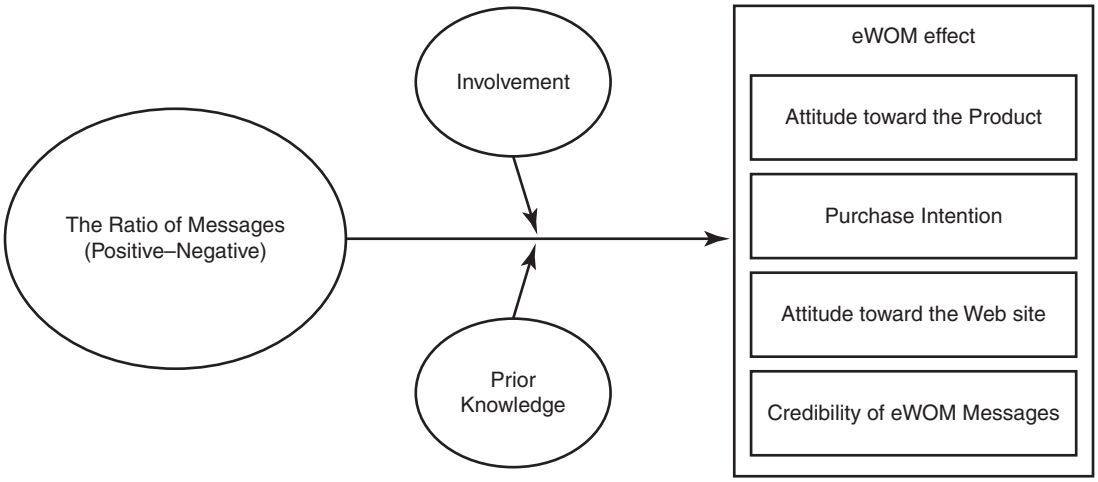

FIG. 1. Research design.

naires employing two product categories: movies and digital cameras. Participants were exposed to an experimental Web site containing different types of eWOM messages. All messages were originally collected from real Web sites and modified to be appropriate for the study. Each eWOM message set contained 10 individual messages, and the ratio of positive to negative messages varied with each set. The number of positive messages ranged from 6 to 10 in five sets, and the rest consisted of negative messages. Thus, the ratios of positive to negative messages were 10:0, 9:1, 8:2, 7:3, and 6:4. With pretests, all sets of individual eWOM messages were carefully manipulated to control biases such as the intensity and length

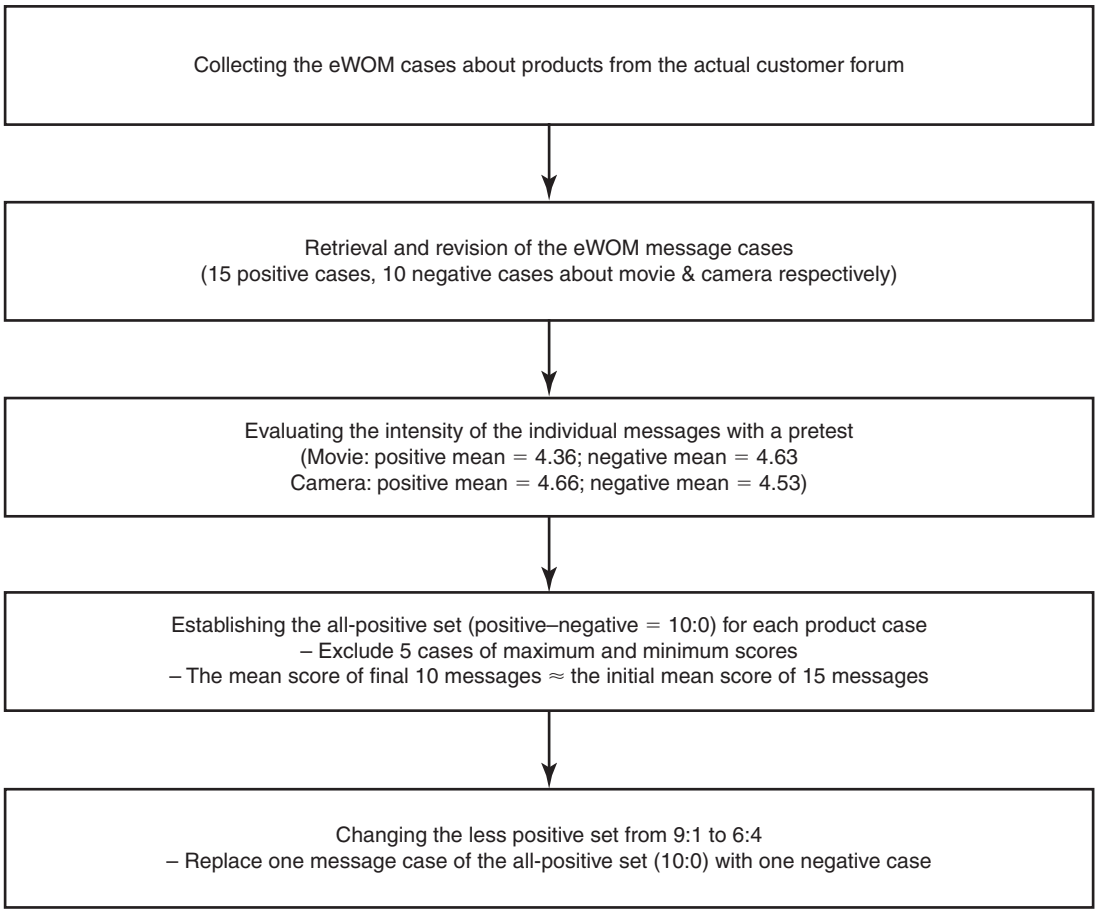

FIG. 2. The procedure to set the experimental eWOM cases with a pretest.

Table 1. Mean Scores of Each Group for the Effectiveness of eWOM

eWOM Effects	*10:0*	*9:1*	*8:2*	*7:3*	*6:4*	*Total*
Attitude toward the product	5.11	4.87	4.72	4.34	3.99	4.61
	(0.71)	(1.20)	(0.87)	(0.76)	(0.77)	(0.95)
Purchase intention	4.28	3.71	3.76	3.39	3.44	3.72
	(0.95)	(1.48)	(1.39)	(0.99)	(1.11)	(1.23)
Attitude toward Web site	4.21	4.54	4.46	4.21	3.85	4.25
	(0.90)	(0.99)	(0.62)	(0.54)	(0.86)	(0.83)
Credibility of eWOM	4.11	4.03	4.32	4.04	3.71	4.04
	(0.87)	(1.17)	(0.73)	(0.72)	(0.81)	(0.88)

Standard deviation shown in parentheses.

of message. Therefore, the mean scores of message directions in five eWOM sets were almost equal. The intervals between each group, from 10:0 to 6:4, were kept approximately equal, and statistical differences among them were confirmed ($F = 31.83$, $p < 0.001$). Figure 2 illustrated how experimental sets of eWOM messages with five combinations of positive and negative directions based on a pretest were manipulated.

The dependent variables were *attitude toward the product*, *purchase intention*, *credibility of eWOM messages*, and *attitude toward Web site*. Each construct was measured with multiple items that were developed and tested in previous studies.[4–5] All variables measured with multiple items were confirmed to have reliabilities with alphas of 0.74 or higher.

Results

Of the sample, 96.5% had made online purchases of one or more items and did so, on average, nine times per year. We found that participants frequently rely on eWOM messages with high credibility. Specifically, 97.9% of them usually referred to customer reviews (eWOM) prior to making online purchases. They read an average of 13.9 reviews per purchase. They also gave relatively high credibility to the customer reviews ($m = 4.94$ in the 7-point scale). In order to examine the proposed hypotheses, statistical analyses including analysis of variance (ANOVA) and general linear model (GLM) were conducted. Following are the findings for each hypothesis.

Influences of eWOM message directions (H1)

H1 examined how various combinations of eWOM messages could influence the eWOM effect in terms of attitude toward the product, purchase intention, attitude toward the Web site, and credibility of eWOM messages. Table 1 shows the mean scores of each group for four individual measures of eWOM effects.

As shown in Tables 1 and 2, eWOM effect measures, except for credibility of eWOM, were significantly different among the groups. Therefore, H1 was strongly supported. Attitude toward the product showed higher correlations with the number of positive messages. The group of 10:0 ($m = 5.10$, $SD = 0.71$) showed the highest scores, followed by groups of 9:1, 8:2, 7:3, and 6:4 respectively. As shown with post hoc tests (Table 2), the group of 10:0 showed significantly higher attitudes toward the products than did groups

Table 2. Differences in eWOM Effects among the Groups

Sources	*SS*	*df*	*MS*	*F*	*LSD*
Attitude toward the product					
Model	22.492	4	5.623		10:0–7:3, 6:4
Error	106.162	138	0.769	7.309***	9:1–7:3, 6:4
Total	128.654	142			8:2–6:4
Purchase intention					
Model	14.716	4	3.679		
Error	197.266	137	1.440	2.555*	10:0–7:3, 6:4
Total	211.982	141			
Attitude toward Web site					
Model	8.067	4	2.017		
Error	89.148	138	0.646	3.122*	9:1–6:4
Total	97.215	142			8:2–6:4
Credibility of eWOM					
Model	5.361	4	1.340		
Error	104.422	137	0.762	1.758	8:2–6:4
Total	109.783	141			

*$p < 0.05$; ***$p < 0.001$.

of 7:3 and 6:4, while the groups with higher positive messages, including 10:0, 9:1, and 8:2, showed no significant differences from the others.

These results imply that a perfect set of eWOM messages, such as 10:0, is not required to improve the customer's attitude toward the product. In other words, although positive messages should be helpful in promoting positive attitudes toward the products, a few negative messages within the majority of positive messages are not critically harmful. Thus, H1 was supported for the case of attitude toward the product.

Purchase intention showed similar patterns to those of attitude toward the product, and the result also supported H1. The highest score was shown in the group of 10:0, followed by 8:2, 9:1, 7:3, and 6:4respectively. The group of 10:0 showed the highest mean score, with statistical differences from the groups of 7:3 and 6:4. Other comparisons showed no significant differences in the post hoc test.

Attitude toward Web site showed somewhat interesting results. In fact, the group of 9:1, with one negative message, yielded the highest score ($m = 4.54$), and the following group, 8:2, showed the second-highest mean score of 4.46. The all-positive group (10:0) ranked the third-highest group, tied with the group of 7:3. With the post hoc test, the groups of 9:1 and 8:2 showed significant differences from the lowest group of 6:4, while the group of 10:0 did not. This result implies that a few negative messages should improve the performance of Web sites, while a perfect set of eWOM messages is not helpful, as indicated by our findings regarding credibility of eWOM.

Although the overall ANOVA results did not show significant differences among five groups for credibility of eWOM, the group of 8:2 showed the highest score, followed by 10:0, 9:1, and so forth. With a sophisticated post hoc test, this could be confirmed. Specifically, the group of 8:2 yielded higher credibility than the group of 6:4, while the group of 10:0 did not show any significant differences from other groups. This result is likely due to consumers' suspicion that the set of perfect positive messages stems from corporate unethical behavior such as stealth marketing activities. Because some companies reportedly try to manipulate and manage the voice of general consumers with intentional interruptions in online user-to-user communication, some participants did not trust the sincerity of perfect sets with all positive messages. This suspicion might influence the results regarding the attitude toward Web site, and credibility of eWOM.

Role of involvement (H2)

H2 examined the relationship between involvement and the ratio of positive eWOM messages regarding their influence on consumers' responses. At the initial stage of the analysis, however, the interaction effect of all five groups and two levels of involvement (high and low) did not show any significant results. Nevertheless, further analyses to compare individual groups in terms of their interactions with involvement showed some significant results. Thus, H2 was supported in part.

Specifically, regarding attitude toward the product, groups 7:3 and 6:4 showed interaction effects with involvement ($MS = 1.673$, $F = 4.121$, $p < 0.05$). At the low-involvement context, group 7:3 showed higher scores than group 6:4, while at the high-involvement condition, their differences were minimal; even group 6:4 showed a slightly higher score. Therefore, it can be inferred that consumers with lower-involvement situations are likely to prefer the product with 7:3 combination over the 6:4 set, while the reverse should be true in a higher-involvement context. A higher involvement situation may cause consumers to become suspicious about the positive messages, and the effect of negative messages would therefore be increased.

The main effect of involvement was also examined. Most eWOM effect measures showed significant differences between high- and low-involvement groups. Specifically, for eWOM effect measures except purchase intention, high-involvement groups showed significantly higher scores than low-involvement groups (Table 3).

Role of prior knowledge

The last hypothesis examined the role of prior knowledge about the product. The interaction effect between the ratio of positive messages and prior knowledge was analyzed. Similar to the case of involvement, no significant interaction effect was found when examining the five groups with two prior knowledge levels.

However, a further analysis based on this initial result showed some significant interaction effects. Therefore, H3 was partially supported. Groups 7:3 and 6:4 showed significant interaction effect with the level of prior knowledge for purchase intention ($MS = 5.663$, $F = 5.356$, $p < 0.05$). For the low prior knowledge group, group 7:3 showed higher scores for purchase intention than did group 6:4. However, this turned reversed at the context of higher prior knowledge.

Table 3. Differences in eWOM Effects between Low- and High-Involvement Groups

eWOM Effects	*Involvement*	*N*	*Mean*	*SD*	*df*	*t*
Attitude toward the product	Low	69	4.44	0.95	140	−2.207*
	High	73	4.79	0.92		
Purchase Intention	Low	68	3.56	1.31	139	−1.476
	High	73	3.86	1.14		
Attitude toward Web site	Low	69	3.93	0.82	140	−4.930***
	High	73	4.56	0.71		
Credibility of eWOM	Low	69	3.78	0.82	139	−3.687***
	High	72	4.30	0.87		

*$p < 0.05$; ***$p < 0.001$.

Another eWOM effect measure showed significant interaction effect between the ratio of positive messages and prior knowledge. In attitude toward Web site, the interaction effect between two sets (8:2 and 9:1) and prior knowledge was significant ($MS = 3.111$, $F = 5.639$, $p < 0.05$). The group of lower prior knowledge showed similar scores for attitude toward Web site regardless of ratios of positive messages; consumers with higher prior knowledge showed significantly different attitude toward Web site for 9:1 ($m = 5.19$) and 8:2 ($m = 4.33$). This finding shows that consumers with higher prior knowledge can be more sensitive to the negative messages than consumers without prior knowledge. A further investigation was performed to examine the mean differences between low and high prior knowledge groups for eWOM effect measures. However, eWOM measures did not show any significant differences between low and high prior knowledge groups.

Discussion

A few negative messages can be helpful in promoting positive attitude toward Web site and credibility of eWOM messages. This might be fairly reasonable, because some consumers may suspect the credibility of the Web site or the set of multiple eWOM messages if they find hardly any negative messages. A single negative message itself can be harmful for product evaluation; however, one negative message in a 10-message set is not much harmful and even can be beneficial in the eWOM context. The moderating roles of involvement and prior knowledge were also supported in some situations.

This study can contribute to the eWOM research field in some respects. Previous studies simply confirmed that negative messages were more influential than positive ones. However, this finding should be further investigated with multiple messages. Moreover, the credibility of individual messages should be considered in future research. Evaluation of eWOM source credibility can differ from evaluation of traditional word-of-mouth contexts. Because this study limits its scope to within the online shopping mall, future research needs to explore somewhat different contexts of eWOM. Although the intimacy and source credibility are not critical in the context of online shopping malls, they should play important roles in other types of Web sites, such as online brand communities.

Disclosure Statement

The authors have no conflict of interest.

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