

# Does the Consumer Knowledge Moderate the relationship between the Information Characteristics and Word of Mouth Performance in Online Environment?

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## ABSTRACT

*This study identified online information characteristics and investigated the effects of information characteristics on word of mouth performance in online environment. And the consumer knowledge was found to be a moderator of the relationship between information characteristics and WOM performance in online environment. The implications of this work to both researchers and practitioners were discussed.*

*Key Word : online information, online WOM(word of mouth), consumer knowledge*

## INTRODUCTION

Internet communications provoke the new forms of communication of online word of mouth (WOM) and made it more powerful. The exponential growth of the Internet has rendered the WOM process as one of the most powerful interpersonal communication means in our society today.

Consumer to consumer communications via online community are text-based and non-limited in time and space. So, Message characteristics are more important in online WOM rather than traditional one. So, it would be one of the main issues to identify the information characteristics of online WOM. Studies on the information characteristics of online WOM and the effects of those factors are very important to understand the online consumer to consumer communication.

The purpose of this study is to investigate the effects of information characteristics of online WOM and the applicability of WOM to marketing, and to find some implications for the online marketing communication strategy. First, we explore the information characteristics of online WOM and investigate its effects on the WOM performance. Second, we also investigate the moderating effect of consumer knowledge in the relationship between information

characteristics and WOM performance. Finally, we discuss the implications for marketing strategy using online WOM.

## THEORETICAL BACKGROUND

Online WOM is defined as any positive or negative statement made by potential, actual, or former customers about a product, services or company, which is made available to a multitude of people and consumers via the Internet (Hennig-Thurau, Gwinner, Walsh, and Gremler, 2004). Researchers have generally considered WOM in terms of advice given and received within the context of face-to-face conversations. It is important to appreciate, however, that, in principle, WOM recommendations of products, services, brands, and retailers can be transmitted in person, over the phone or via the Internet. The present study represents one of the first systematic investigations of WOM messages transmitted over the Internet.

Existing studies on online communication and WOM point out information characteristics as a major characteristics of online environment. Schindler and Bickart (2002) present the level of consumer's consensus as a important tip in judging for usefulness and validity of online WOM. In traditional WOM study, the number of message is dealt as a main variable of WOM effect (Bone, 1995; Yang and Jo, 2000). Elliott (2002) presents the concept of consensus by other consumers as a important point of reference for the validity of online WOM.

The effects of consensus information on WOM influences are investigated in this study. The scope of WOM is expanded exponentially in online environment, and the consensus of other consumers on product and service evaluation is very important factors for purchase decision making. Researchers found a linear relationship between group size and influence in Social Impact Theory (Latane, 1981).

Relative to the pallid messages carried by the media, WOM information tends to be more vivid

and salient, largely because it emanates directly from another consumer who personally recounts his or her experiences (Newman, 2003). WOM has been described as live and not canned like most other company communications (Hanna and Wozniak, 2001). It is live because it is custom tailored to the people who are participating in it. WOM is more relevant and complete compared to any other form of communication (Newman, 2003). Vivid information is more appealing and long lasting in consumer memory (Sundar and Kalyanaraman, 2004). Vividness is a major feature of internet advertising (Rodgers and Thorson, 2000).

A number of reasons explain why WOM appears more vivid than messages received via the media. First, WOM has personal relevance, which increases receivers' involvement levels and, consequently, the information's impact. Second, WOM is concrete, containing detailed facts about specific people, situations, actions, and outcomes. Third, WOM testimony occurs in close temporal, spatial, and sensory proximity to receivers. The story is fresh and new, its setting and context are local and recognizable, and the account describes the narrator's firsthand experience, to which listeners can likely relate.

Detailed stories of personal experiences, recommendations for various contexts and specific tools such as emoticon could increase the vividness of online WOM.

The significant role the Internet plays in enhancing the power of consumer WOM has led some writers to report the rise of virtual communities (Newman, 2003). These include Internet users who are expected to tip the balance of power in commercial transactions toward the customer (Hagel and Armstrong, 1997).

We can hypothesize as to community interaction and user control of WOM information on the Internet. Online consumer

communities are very good basis for online WOM. Consumers exchange their experience and information for various products and brands via various online community (Chatterjee, 2001; Newman, 2003).

Okleshen and Grossbart(1998) showed in their research of usenet group that the more active user, the more frequent opinions and put more values for the information of community. Their research showed membership perception is linked to the behavior change. Consciousness of kind and moral responsibility of community (Muniz and O'Guinn, 2001) can be activating factors for the communication via community interaction.

So, the interactivity of consumer to consumer and interactivity of consumer to community can be very important variables for online WOM performance (Elliott, 2002; Martin, Gardikiotis and Hewstone, 2002).

Mckenna and Bargh(2000) point out increased control for time and interaction pace as main characteristics of online communication. Customized information is a important benefit of internet communication (Peterson and Merino, 2003). This means increased user control for searching and getting information.

Elliott (2002) asserts that the possibility of storing and editing information is a main feature of online WOM. He point outs these accessibility and flexibility exhanche the effects of online WOM.

## HYPOTHESIS

In this study we formulate several hypothesis regarding the relationship between online information characteristics and online WOM performance. Hypothesis analysed in this study are as follows.

**Table 1. Hypothesis**

relationship	hypothesis
Consensus→WOM performance	H1 : The higher information consensus is met by online WOM, the higher online WOM performance.
Vividness→WOM performance	H2 : The higher information vividness is met by online WOM, the higher online WOM performance.
Community Interaction→WOM performance	H3 : The more community interaction is met by online WOM, the higher online WOM performance.
User Control→WOM performance	H4 : The more user control is met by online WOM, the higher online WOM performance.

## RESEARCH METHODOLOGY

### Sample

The subjects for this study were confined to the online users who have experienced online word of mouth. An interview survey (face-to-face) was conducted in Seoul, Korea. The sample consisted of 293 respondents including 108 male and 175 female. In the sample, 92% were in their twenties. The mean time of Internet usage per week was 14.5 hours and 97% of the sample had online shopping experience.

### Measurement

Consensus was measured 4 items on a seven-point rating scale of agreement (1=very strongly disagree, 7=very strongly agree ;the seven-point scale was used for all subsequent items, unless noted otherwise). The following four items are adapted from Elliott (2002), Chiou and Cheng (2003): (1) "Many people read online WOM of this site" (2) "Many people reply online WOM of this site", (3) "Many people recommend online WOM of this site", and (4) "Many people agree to online WOM of this site".

Vividness was measured by agreement with the following three statements adapted from Schlinger (1979): (1) "This online WOM gives rise to experiential empathy," (2) "This online WOM is concrete", and (3) "This online WOM is realistic".

Community interaction was measured by agreement with the following four statements adapted from Wu (2000), Kang (2000), Lee (2003): (1) "This online community have recent WOM " (2) "This online community have abundant WOM", (3) "This online community have various WOM of many consumers", and (4) "This online community members communicate quickly for information exchange".

User control was measured by agreement with the following two statements adapted from Wu (2000), Lee (2003): (1) "I was in control over the information display format, condition when using this site", (2) "I was in control over the content of this site that I wanted to see".

WOM performance was measured by agreement with the following three statements adapted from Harrison-Walker (2001), Kim and Hwang (1997): (1) "This online WOM is useful to get product information", (2) "This online WOM is useful for building positive product image", and (3) "I came to have intention to purchase product due to this online WOM".

### Reliability and Validity of Measures

The overall factor solution has an excellent loading pattern and explains 74.29% of the variation. Therefore, convergent and discriminant validity for all measures are strongly supported.

Following Anderson and Gerbing (1988), we also conducted confirmatory factor analysis to further establish the reliability and discriminant validity of the multi-item scales. GFI (0.915), AGFI (0.877), NNFI (0.934), CFI (0.949), SRMR (0.046) and RMSEA (0.067) indicate satisfactory model fit. All the items' loadings indicated significant t-values, suggesting convergent validity was achieved. And, the confidence interval for each pairwise correlation estimate does not include the value of 1, suggesting discriminant validity was achieved.

Measure validation was also examined for internal consistency by computing Cronbach's alpha coefficient. Cronbach's alpha was found to be greater than 0.70 (minimum value is 0.784 for online WOM effect), in accordance with Nunnally's (1967) standard.

## RESULTS

### Hypothesis Testing

The hypothesized relationships were tested using regression analysis to maintain consistency with earlier studies. VIF is less than 1.554 in every variable, which suggests multicollinearity is not a serious problem. Table 2 presents a summary of the hypothesis tests, suggesting all the hypotheses were supported.

### Moderating Effect of Consumer Knowledge

In this section, we investigated the differential effects of online information characteristics on WOM performance according to the level of consumer knowledge for discussing the more interesting managerial implications. In this study, consumer knowledge was measured by three items adapted from Brucks (1985), Bettman and Park (1980) : (1) I feel that I am experienced user of the product (2) I feel that I have special knowledge about the product (3) I feel that I am familiar with how to use the product. The response was measured on a 7-point Likert-scale with end points "strongly disagree" and "strongly agree". The 3-item consumer knowledge scale has alphas of 0.7837. The consumer knowledge score is calculated with the mean of 3-item scales. Grouping is done by a median-split on respondents' knowledge scores. Table 3 shows comparison of hypothesized paths across groups.

Table 2. Results of hypotheses tests

variable	Unstandardized Coefficients	Standard Error	Standardized Coefficients	t-value	p-value
Constant	1.995**	0.286		6.963	0.000
Consensus	0.117*	0.052	0.138	2.277	0.024
Vividness	0.250*	0.052	0.285	4.785	0.000
Community Interaction	0.130**	0.049	0.156	2.642	0.009
User Control	0.143**	0.044	0.176	3.284	0.001
R <sup>2</sup> = 0.326					
F (4, 284) = 34.308**					

\* p < 0.05, \*\* p < 0.01

Table 3. Results of comparing hypothesized paths across groups

	Hypothesized path	Low-knowledge group		High-knowledge group	
		Standardized Coefficient	t-value	Standardized Coefficient	t-value
H1	Consensus→WOM performance	0.222**	2.634	0.070	0.797
H2	Vividness→WOM performance	0.265**	3.191	0.271**	3.199
H3	Community Interaction→WOM performance	0.182*	2.241	0.138	1.597
H4	User Control→WOM performance	0.120	1.626	0.230**	2.938
		R <sup>2</sup> = 0.355 F = 19.014**		R <sup>2</sup> = 0.276 F = 13.335**	

\* p < 0.05, \*\* p < 0.01

There are differences in the estimates for path coefficients across groups. Hierarchical regression analysis (Cohen and Cohen 1983) was conducted in order to test statistically

moderating effect of consumer knowledge. We conducted F-test for statistical significance of the increase in R-square accounted by interaction variable. Results are presented in Table 4.

Table 4. Results of moderating effect of consumer knowledge

Dependent Variable	Stage	Independent Variable	R <sup>2</sup>	F	ΔR <sup>2</sup>	F-test	Significance
WOM performance	1	Consensus(A) Knowledge(B)	0.176	30.506**			
	2	A, B, A×B	0.189	21.993**	0.013	F(1,285)=4.57	P < 0.05
	1	Vividness(A) Knowledge(B)	0.240	45.015**			
	2	A, B, A×B	0.248	31.252**	0.008	F(1,285)=3.03	P < 0.10
	1	Community Interaction(A) Knowledge(B)	0.171	29.493**			
	2	A, B, A×B	0.189	22.026**	0.018	F(1,285)=6.33	P < 0.05
	1	User control(A) Knowledge(B)	0.143	23.794**			
	2	A, B, A×B	0.170	19.335**	0.027	F(1,285)=9.27	P < 0.01

According to these results, the moderating effect of consumer knowledge was significant

for consensus, community interaction, and user control at significance level of 0.05.

The analysis for elasticity of moderating effect reveals that consensus have a greater influence on WOM effect for the low-knowledge group than for the high-knowledge group. On the other hand, community interaction and user control have a greater influence on WOM effect for the high-knowledge group than for the low-knowledge group.

## DISCUSSION AND IMPLICATIONS

The primary contribution of this research is investigation of relationships between online information characteristics and online WOM performance, which suggests implications for practitioners of online marketing communication. In addition, to our knowledge, our research is the first attempt to examine empirically online WOM performance model.

The new findings are as follows: First, the four online information characteristics (consensus, vividness, community interaction and user control) which are identified by this research has a significant effect on online WOM performance. Second, the effects of these online information characteristics on the WOM performance are moderated by consumer knowledge. This means that marketing communication strategy for maximization of WOM performance should be differentiated by consumer knowledge level.

### Theoretical Implications

By reviewing the literature and identifying key characteristics of online information, this study makes an important contribution to the emerging literature on online WOM.

This study offers significant implications for research on online consumer behavior, especially online WOM. The effects of online information characteristics on WOM performance, to the best of the authors' knowledge, has neither been theorized, nor empirically validated. Consequently, the proposed model can serve as an initial blueprint for understanding online WOM.

### Managerial Implications

This study offers several guidelines for practitioners to develop online marketing communication strategies.

First, it is possible and very important for marketers to manage strategically online WOM because it is text-based and can be traced, compared with offline WOM. Marketing communication should be driven by utilizing the online information-specific characteristics such

as consensus, vividness, community interaction and user control.

Second, online marketers should develop marketing communication programs that appeal to online community which are important basis for online WOM. Our findings show that community interaction have a significant impact on WOM performance. This highlights the importance of online community management. Therefore, marketing practitioners must make an effort to build attractive online community sites.

Finally, online marketers should develop marketing communication programs differently according to consumer knowledge level. For low-knowledge group, social proof strategy focused on consensus will be useful. On the other hand, for high-knowledge group, user control is essential factor for maximization of online WOM performance.

### Limitations and Further Research

The proposed key drivers of online WOM performance are merely focused on online information characteristics, and are not exhaustive of other potential drivers of online WOM performance. Future research could explore other related constructs that better predict online WOM performance, calling for a comprehensive model of online WOM performance.

Although all the measures used in the study are modified through in-depth interviews and pretests, further analysis of the items is needed to establish definitive proof of reliability and validity.

Besides these limitations, several further research directions follow from this study. Subsequent research could address the inclusion of quantitative variable of online WOM such as WOM frequency or interval.

Another promising future research would be to develop a longitudinal model that delineates the diffusion of online WOM.

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