Exploring the effect of e-WOM participation on e-Loyalty in e-commerce

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ABSTRACT

The idea behind the concept of Electronic Word of Mouth (e-WOM) is very important to the visibility of individuals and businesses seeking exposure on the Internet. e-WOM is defined as "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet" [39]. The purpose of this study is to understand how electronic word of mouth influences the online shopping patterns of customers. This study draws on motivation theory and identification theory to understand how e-WOM influences online shopping behavior. The results from the empirical examination are very encouraging. The proposed research model is supported as well as the accompanying hypotheses. The findings illustrate that the intrinsic motives (e.g., desire to help other customers) are more important than the extrinsic ones (e.g., monetary rewards) as the antecedents of e-WOM participation. It was also found that personal site identification has a greater impact on e-loyalty when compared to social site identification.

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1. Introduction

Virtual community participation and User Generated Content (UGC) are the prevailing social activities in virtual spaces. Along with such trends, word-of-mouth (WOM) transactions have also increased dramatically. WOM information on the Internet (henceforth e-WOM) has become an important information source for shopping. e-WOM is defined as “any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet” [39]. e-WOM is known to have a strong impact on purchase decisions and a key factor in the Internet shopping market [61].

Consumers now use blogs, search engines, internet communities, social media, consumer review systems and online instant messenger services to gather and disseminate product information. These tools are the basis for e-WOM networks and are used for information searching, decision-making, and forming brand images [13,38]. The emergence of these e-WOM tools has changed the way customers interact with other customers as well as how they engage with businesses. Today’s online shopper compliments and complains in a more aggressive and bold way in this brave new world of faceless e-commerce [37]. Traditional word-of-mouth interactions are not as far reaching as e-WOM because they are restricted by time, space and relationships. This is in contrast to the e-WOM environment where there are very few restrictions in terms of time and place of interaction due to the fact that the Internet is always available. In essence, range and speed of electronic word-of-mouth is wider and faster than traditional word-of-mouth communication [17].

Most e-commerce sites attempt to encourage their customers to produce more e-WOM because consumer-produced information provides potential customers with a sense of trust [35]. e-WOM is considered a viable marketing strategy to attract new customers and to retain existing customers. Researchers have recognized the growing importance of e-WOM in e-business. For example, there have been several studies on e-WOM participation involving the motives of customers (e.g., [14,39]), the effects of negative e-WOM (e.g., [13]), and the relationship between revenue and e-WOM (e.g., [15,35]). Most of these studies deal with the role of e-WOM as an information source for customers, or focus on how to motivate customers to participate in the process. However, very little is known about the relationship between e-WOM participation and the participant’s next purchase. The purpose of this study is to investigate the role of e-WOM participation as it relates to loyalty to an online shopping site.

In order to investigate the influence of e-WOM participation on e-loyalty, we developed an integrated framework that consists of theories of motivation, participation and identification. Cermak et al. and Wind and Rangaswamy found that customer participation in service specification or mass customization leads to an increase in customer satisfaction, loyalty, and repurchase [12,66]. Creating e-WOM by writing comments or posting a review is a type of extra-role behavior carried out by the buyer. Our study uses motivation and identification...
theory to investigate the effect of e-WOM participation on partici-
pant's e-loyalty towards a web site.

In the next section of this paper, we will review previous studies on
e-WOM; we will then present hypotheses and develop a structural
equation model based on the theoretical framework, which is followed
by introducing the measurement instruments and the survey items.
Finally, we will present the empirical results and discuss them.

2. Literature review

Compared to the offline environment, there exists a large amount of
e-WOM information about specialized activity and product and service
communities, along with consumer reviews [64]. Chatterjee constructed
an imaginary internet shopping mall, and using an imaginary consumer
survey, investigated the effects of e-WOM [13]. The results show that a
negative consumer review has a critical influence on the consumer's
trust and purchase intention at the internet shopping mall. Moreover,
in the case of a bargain shopper who prefers to purchase at a lower cost,
the negative word-of-mouth impact is even greater. It appears that on-
line shoppers are much more sensitive to negative e-WOM and this is
particularly true of low-priced products. As this finding is more promi-
nent in the case of small online shopping malls, Chatterjee pointed out
that the management of negative e-WOM is crucial for those companies
solely dependent on their cost advantage when they do not have brand
power.

Hennig-Thurau and Walsh studied the customer motives for reading
online word of mouth and the resulting effects. Their study found that
the most important motivations for reading reviews were: diminution
of risk, lowering of search time, understanding the various methods
for how to consume a product, reduction or curtailment of purchase re-
gret, compensation from an imaginary community, searching for new
products, and increasing social status [39]. Diminution of decision mak-
ing time and better purchase decision making motivation were shown to
be the most significant factors motivating the customer to read
e-WOM. In addition, Hennig-Thurau et al. studied the motivation to
post e-WOM on the internet [40]. These results can be summarized in
terms of consumers' desire for social interaction, economic incentives,
and increase in social status.

Gruen et al. viewed e-WOM as a kind of know-how exchange among
the customers. And that the development of the know-how or e-WOM
was preceded by opportunity, motivation and ability [36]. Furthermore,
when e-WOM is well managed, it was shown that it has positive effects
on the customer evaluation of the company and on intentions to
repurchase.

Bickart and Shindler allowed customers to gather information on 5
product categories for a period of 12 weeks [10]. The results show
that customers actually pay more attention to the information provided
by other customers rather than those of the salesperson or marketers
because they have used the product. In short, the information they pro-
vide is more appealing and meaningful to the potential customers than
that of the salesperson or marketers. Chevalier and Mayzlin also studied
the effects of e-WOM on actual sales by examining online book reviews
posted on Amazon and Barnes and Noble [15]. The results illustrate that
more positive e-WOM is posted on online book stores than offline, with
Amazon having far more positive e-WOM in both quantity and quality
than Barnes and Noble. Overall, this study demonstrated that high
levels of e-WOM increases book sales.

Dellarocas stressed that game theory, which is based on evaluation
and trust, may be the most useful method for explaining the importance
of e-WOM interactions. Pavlou and Dimoka analyzed text-oriented
e-WOM [53]. Their study shows e-WOM in the form of text, as opposed
to simple customer ratings, constructs more trust and creates price pre-
miums on the products. One problem with e-Bay is that the interactions
between sellers and buyers are very constrained. This leads to trust
problems that are caused by the lack of interaction between a salesper-
son and a customer in e-commercial transactions, as well a lack of a
pathway that would allow the customer to actually investigate the
product being offered [22].

Through the literature review, we found that most studies on
e-WOM show how e-WOM influences future customers and how it
benefits online shopping malls. However, few studies have attempted
to reveal the relationship between a customer’s e-WOM participation
and his/her next purchase, or illuminate the psychological aspect of
e-WOM participation and the process of enhancing e-loyalty. The ob-
jective of this study is to fill this gap. The next section delves into the
research model used in this study.

3. Theory building and hypotheses development

Based on the above discussion, the conceptual framework illustrated in
Fig. 1 will be used to examine the importance of e-WOM in
generating awareness. This framework draws on motivation theo-
ry, participation theory and identification theory. Motivational theory
is the force behind the process of e-WOM participation. Secondly,
participation explains how the customer’s e-WOM posting behavior
leads to positive and negative attitudes toward certain online shop-
ning malls. Finally, identification theory is employed as a mechanism
to explain the process of the e-WOM participants’ increased loyalty to
online shopping malls.

3.1. Motivational theory

The first stage of our conceptual framework, as shown in Fig. 1, is
the customer’s motivation to participate in e-WOM. In this stage, we
discover significant motives that make the customer participate in
writing e-WOM. It is important to examine motive in this study, be-
cause it provides practical and theoretical implications to boost
e-WOM participation. Motivation has been studied in a wide range
of research studies and is considered an important theoretical vari-
able [21]. Woolfolk defines motive as a psychological state that in-
duces, directs and maintains human behavior [68]. Deci separates
motive into intrinsic and extrinsic motives [20]. On the one hand, in-
trinsic motives trigger behavior by reason of interest, enjoyment, and
satisfaction caused by the behavior itself. On the other hand, extrinsic
motives are followed by reason of compensation obtained by result of
external activity. These intrinsic and extrinsic motives simultaneously
influence the intention of the individual.

In the context of information systems, Davis et al. introduced mo-
tivation theory in terms of technology acceptance [19]. Consistent
with previous studies examining other behavior, their study found that
both intrinsic and extrinsic motives were key factors in behavor-
al intention, leading to actual acceptance of new technology. In their
study, intrinsic motive refers to perceived enjoyment—the extent to
which using a computer is perceived to be enjoyable distinct from
any performance outcomes that might be obtained. Empirical support
for enjoyment as a determinant of behavioral intention to use a spe-
cific technology has been demonstrated for both computer games
[50] and computer technology in the workplace [19]. Extrinsic motive
refers to the use of a specific technology in the workplace by linking it
to more productively performing job-related activities. Individuals
are often rewarded for good and productive behavior with raises, bo-
uxes, etc. Therefore, if a technology is perceived to be useful in facil-
itating the individual’s productivity, s/he is likely to have extrinsic
motivation to use a given technology [19]. The consistent results of
Garrity et al. also showed that ‘task support satisfaction’ and ‘shop-
ing enjoyment,’ adopted as extrinsic and intrinsic motives of ‘intent
to use an electronic commerce web site’ are significant factors [33].

In this study, we examined four motives (i.e., concern for other
customers, self enhancement, social benefit and economic incentives)
that were posited to facilitate e-WOM participation behavior. Con-
cern for other customers refers to other-oriented emotions evoked by
and congruent with the perceived welfare of someone in need
Fig. 1. Conceptual framework for enhancement of e-Loyalty.

[7]. Self enhancement works as a type of motivation that helps to make people feel good about themselves and to improve self-esteem by participating in e-WOM [56]. Social benefit is a type of motivation wherein customers want to interact with other customers by posting e-WOM [40]. Economic incentives refer to a desire to participate in making e-WOM because of potential monetary rewards.

In this study, the four motives are categorized as being intrinsic or extrinsic motives. Concern for others, self enhancement, and social benefit are categorized primarily as intrinsic motives. Whereas economic incentives are categorized as being extrinsic. Intrinsic motives lead to e-WOM participation because they are associated with positive sensations of enjoyment, friendship, and pleasantness and are beneficial to themselves and other customers. Extrinsic motives can be facilitated by offering monetary benefits, such as gift certificates, extra air miles and other prizes. Intrinsic and extrinsic motives are assumed to drive or generate e-WOM participation, leading to the following two hypotheses:

H1a. Intrinsic motives will have a positive impact on e-WOM participation.
H1b. Extrinsic motives will have a positive impact on e-WOM participation.

3.2. Participation

The second construct examined in this model relates to customer's participation behavior. In this study, participation is operationalized as the actual level of involvement and frequency in e-WOM writing and reviews (i.e., how much time and how much effort was invested in writing e-WOM text). The importance of consumer participation has been conceptually and theoretically substantiated in previous studies as there have been a number of studies on the relationship between consumer participation and productivity and profitability [29].

Related studies have been conducted on the motives and effects of customer participation in service production and delivery [4,23], on psychological aspects and the impact on service quality of customer participation [18], on the impact of customer participation regarding the level of satisfaction, on repurchase and preference [26], and finally, on the effect of customer participation on the service provider [42]. We found that most studies on participation demonstrate a strong connection to positive attitudes, satisfaction, and preferences for a brand or for a company.

There are conflicting opinions about how customer participation influences service evaluation. One is that when customers are not satisfied, the unsatisfactory service result is usually attributed to the service provider. In other words, because a high degree of participation is costly to the customer, the customer expects high quality services that compensate for his or her participation costs. Therefore, if the service is poor in terms of the participation cost, the service failure causes the customer to place blame on the service provider rather than him/herself.

It should be noted that customers having a high degree of participation tend to attribute unsatisfactory service to him/herself rather than to the service provider [58]. It appears that customers who participate actively in e-WOM feel responsible for a poor product or service. Such an assertion indirectly supports the idea that the customer who has low levels of participation tend to attribute service failure to the service provider, while the customer who has high levels of participation do not [30]. To summarize, these studies do not directly explain the causal relationship between participation and customer loyalty; however, they do indirectly support the flow of our conceptual framework, which posits that e-WOM participation behavior enhances the participant’s e-loyalty.

3.3. Identification theory

Research on identification theory is a remarkably important bridge between participation and e-loyalty and helps to highlight how psychological variables explain the connection between participation and e-loyalty. The phenomenon of identification is often studied in organization research. Organization identification means that employees perceive a sense-of-connectedness to an organization and identify themselves in terms of it [48]. Cable and Judge show that high suitability between person and organization reduces separation intention and increases the intention to recommend the organization [11]. These results imply a relationship between e-WOM and identification.

Bhattacharya and Sen examined the idea that a customer who has a deep involvement in a company or product becomes a supporter of that product or company [9]. As a result, based on social identity theory and organization identification theory, a customer identifies him/herself with a company or product in order to meet his/her self-definition, which is based on needs. Underwood et al. proposed a mechanism of combined emotions between brand and customer, which he called social identity [63]. Social identity theory is based on the self-concept, which refers to the awareness of and feelings for individuals and consists of personal identity and social identity.

Those phenomena have been investigated in the context of brand identification in the marketing area [25,27,49]. Researchers in marketing have studied consumers’ perceptions and they have found that the perception of a brand goes beyond the functional attributes and benefits and includes nonfunctional, symbolic qualities (often referred to as the “brand image”) [6]. The concept of a brand personality is often used as a component of the brand image [49]. Brand personality is usually defined as the portfolio of human characteristics that are associated with a brand [1]. A number of studies have shown that a consumer’s attitude is influenced by matching the perceived product image with their own self-concept [59]. Brand identification happens when a consumer sees his or her own self-image as overlapping with the brand’s image [4]. Recent research findings further support the assertion that consumers construct their self-identity and present themselves to others through their brand choices based on the congruency between brand-user associations and self-image associations [27].

Rio et al. divide brand identification into two categories: personal and social brand identification. Personal brand identification begins with a customer's affinity for a brand [55]. Social brand identification is subsequently enhanced when a customer is a member of a community [47]. In brief, when the brand image enriches, matches and protects a customer’s self-image, this leads to a better evaluation result for the brand. Consequently, a better evaluation of a product or service leads to increased brand awareness [41].

We used the work of Rio et al. and classified identification in terms of personal identification and social identification [55]. Both personal
identification and social identification with an online shopping site are investigated in this study. Personal site identification is the relationship between an online shopping site and the customer, whereas social site identification occurs among customers through an e-WOM system. Personal site identification refers to the extent to which a customer thinks the image of an online shopping site matches his/her own image. Social identification refers to the identification that a customer feels with respect to interactions, via the e-WOM system, with other customers on the same online shopping site. Social identification also includes the degree to which the customer thinks these relationships are valuable and how the relationships facilitate the achievement of an identity in the online customer community.

When a customer engages in an e-WOM activity, this participation can be an opportunity for him or her to interact with an internet shopping mall, and to understand the identity of the online social community [8]. According to Bhattacharya, participation with a web site via e-WOM and other activities is the most effective method for promoting identification. Thus, we can infer that interactions with internet shopping malls, such as expressing satisfaction, giving advice and getting feedback from a seller through an e-WOM system, can enhance the participant's personal site identification. Meanwhile, Dick et al. discuss extra-role behavior as having a positive impact on the formation of identity in the group [24]. Feather and Rauter also suggest that extra-role behavior enhances a sense-of-connectedness and promotes social identity in the group [28]. Therefore, we can assume that customers, who frequently participate in e-WOM, have a higher sense-of-connectedness and membership than those who do not. In essence, increased levels of customer participation are related to higher levels of recognition. After all, e-WOM participation may enhance a customer's social site identification. Based on the literature review, we propose these hypotheses:

H2a. e-WOM participation has a positive impact on personal site identification.

H2b. e-WOM participation has a positive impact on social site identification.

3.4. e-Loyalty

It is the ultimate goal of this paper to confirm the existence of a causal relationship between e-WOM participation and e-loyalty. In other words, we attempt to find out whether policies that online shopping malls use to stimulate and encourage customers to write e-WOM are effective in increasing customer loyalty or e-loyalty.

e-Loyalty refers to customer loyalty in the internet market [54]. Since internet shopping malls have different structural features, such as no human element and material relating to non-existent facilities, the concept of customer loyalty in the internet market is also different. Generally, customer loyalty represents the attitude and preference of a customer for a particular company and product. However, e-loyalty is conceptualized as a kind of revisit attitude or revisit behavior in relation to a particular internet site [2]. Several recent studies have conceptualized e-loyalty in a similar manner [260].

According to the extant literature [41,55], there is a strong relationship between a customer’s e-loyalty and identification with a brand. Several studies also explain the psychological aspects of this process [9,57,69]. A customer's high site identification means that s/he understands the site well and has an affinity with it [9]. A brand image that decidedly matches the customer's self-image makes the transaction satisfactory [57]. In addition, the customer tends to increase the amount of purchasing activity when there are high levels of brand identification [69]. This in turn leads to high levels of personal site identification, which in turn translates to stronger e-loyalty.

Ashforth and Mael suggest that a community member with a strong sense of social identity among other members becomes devoted and loyal [3]. Moon et al. also verify this assertion, where they found that blog use increases social identity with the blog and in turn strongly influences loyalty formation towards the blog service provider [51]. Based on these assertions and previous research findings, we suggest the following hypotheses:

H3a. Personal site identification has a positive impact on e-loyalty.

H3b. Social site identification has a positive impact on e-loyalty.

4. Research model

Based on the discussion of the six hypotheses, we also developed a structural model that is presented in Fig. 2. This model is designed to verify the relationships among motives, e-WOM participation, identification and e-loyalty in an e-commerce environment. As discussed earlier, intrinsic and extrinsic motives are set as preceding factors of e-WOM participation. Personal and social site identifications are set as preceding factors of e-loyalty. In order to verify our research model, a research survey was conducted and a structural modeling analysis tool was used to substantiate the research model.

5. Research method

5.1. Measurement development

The unit of analysis of this study is the individual user of e-WOM systems. Measurement items for the focal constructs were derived from prior research and adjusted for our study. The survey was developed for the Korean online market space and careful attention to measurement issues were taken in order to insure psychometric validity. After measurement item development, items were translated into a Korean version of the survey. Since there are language-oriented differences such as nuance and interpretation, close attention was given to the translation. In order to check cleanliness of items, reliability and construct validity of the adjusted items, the pilot test for these items (i.e., Korean version) was conducted with 26 graduate students in Korea.

As noted earlier, the intrinsic motive construct is a multidimensional construct [32]. We therefore set intrinsic motive as second order factor consisting of the following first order factors: concern for other customers, self enhancement, and social benefit. The relationship between the second order factor and first order factors are reflective because separate motives are manifestations of the construct, intrinsic motive [43]. Garver and Mentzer pointed out that when researchers consider a hierarchical structure for their measurement model, they need to use two approaches [34]. If the correlation coefficients between two constructs are higher than 0.70, the measurement model is encouraged to be specified as a second order factor along with its first order factors, which are classified as two sub-constructs. However, the criterion 0.70 is not an absolute value, and thus, if theoretical basis strongly supports a sub-construct model, it too should be set as a second order factor rather than a first order factor.

The items that were employed to measure personal site identification and social identification were adapted to our research setting [48,55]. Participation was adjusted to investigate the respondents' frequency and involvement in e-WOM writing. We then consulted the research of Cermak et al. [12] and constructed tools to measure e-WOM participation. Lastly, items from Anderson and Srinivasan [2] were selected to measure e-loyalty. These constructs demonstrated substantial reliability and internal consistency. All details of the items are attached in Table 1. One question, “Do you agree with the opinion that the internet connection fee via mobile phone is likely to be raised in the future?” is added as a marker variable to examine common method bias in the questionnaire survey.

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Table 1

<table>
<thead>
<tr>
<th>Items</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic motive (I write comments on customer review because…)</td>
<td>IM1. …I want to help others with my own positive experience.</td>
</tr>
<tr>
<td></td>
<td>IM2. …I want to give others the opportunity to buy the right product.</td>
</tr>
<tr>
<td></td>
<td>IM3. …This way I can express my joy about a good buy.</td>
</tr>
<tr>
<td></td>
<td>IM4. …I feel good when I can tell others about my buying successes.</td>
</tr>
<tr>
<td></td>
<td>IM5. …I believe a chat among like-minded people is a nice thing.</td>
</tr>
<tr>
<td></td>
<td>IM6. …It is fun to communicate this way with other people in the community.</td>
</tr>
</tbody>
</table>

Extrinsic motive (I write comments on customer review because…)

| EM1 | …of incentives I receive (e.g., cyber money). |
| EM2 | …I receive a reward for my writing. |
| EM3 | …I can get discount coupons on my next purchase on the site. |

e-WOM participation

| EP1 | I frequently write a customer review. |
| EP2 | When I leave a customer review, I elaborate write it. |
| EP3 | I spend much effort in posting review. |

Personal site identification

| PI1 | This online shopping mall is associated with my life style well. |
| PI2 | I have positive feeling at this online shopping mall. |
| PI3 | This online shopping mall suit with my self-image. |

Social site identification

| SI1 | I interact with other customers through review system. |
| SI2 | I have positive feeling with other customers. |
| SI3 | I become important person to other customer through review system. |
| SI4 | Because of product review I wrote, other customers respect me. |

e-Loyalty

| EL1 | I seldom consider switching another to internet shopping mall. |
| EL2 | I believe that this is my favorite internet shopping mall. |
| EL3 | When I need to purchase, this shopping mall is my best choice. |

5.2. Data collection

In order to target online users, we employed a web-based survey. Online surveys have several advantages over traditional paper-based surveys: (1) the sample is not restricted to a single or local geographical location, (2) lower costs accrue, and (3) faster responses are likely. We collected data in Korea since the e-commerce environment of Korea is very well developed, and customer’s involvement in the Internet was prevalent. For example, Korea has the largest percentage of wireless broadband users in the world [52]. Korean e-commerce environment is considered to represent general customer behavior online. A particular internet shopping mall (K company) was targeted and requested to conduct our survey. K company is one of the popular internet shopping malls in Korea. Its online review system is used well by customers. This site is considered to have an appropriate environment for this study.

First we sorted customers who have at least one transaction record within a recent 6 months to avoid fake accounts or lost accounts. Within the customer database, we randomly selected 300 customers as our informants, and invitation emails were sent to them. The questionnaire consisted of an instruction page that opened a separate Web browser window containing the items to be assessed. At the last page, we placed an advertisement, which offered a prize to the respondents, to try to improve the number of high-quality responses. The respondents were asked to answer all the questions based on their experience, using a 1–7 Likert-type scale with an anchor of 1 for “strongly disagree” to 7 for “strongly agree.” Answering all the questions was required to click the submit button.

A total of 257 responses were gathered. The response rate was 85.6% (257/300). Seven of the 257 were printed out rather than sent back electronically. Participants received about $5 worth of incentives for completing the questionnaire. Fifty-nine percent of the respondents were female, and the majority of respondents were people in their 30s and who had more-than-10-times experience with e-commerce. During the analysis process all 257 responses were used because specific outlier and omitted responses were not found.

6. Results

Assessment of the research model was conducted using PLS (Partial Least Square). PLS is a structured equation modeling technique that can analyze structural equation models (SEMs) involving multiple-item constructs, with direct and indirect paths. PLS works by extracting successive linear combinations of the predictors and is effective in explaining both response and predictor variation [16]. PLS is a powerful tool for analyzing models because of the minimal demands on measurement scales, sample size, and residual distributions. In addition, PLS avoids two serious problems, inadmissible solutions and factor indeterminacy [31]. SEM approaches, such as LISREL and AMOS, are not able to deal with non-normal distributions, and they can yield non-unique or otherwise improper solutions in some cases [31]. PLS is not as susceptible to these limitations [67]. The emphasis of PLS is on predicting the responses as well as in understanding the underlying relationship between the variables [62].

6.1. Measurement assessment

A PLS analysis involves two stages: (1) the assessment of the measurement model, including the reliability and discriminant validity of the measures, and (2) the assessment of the structural model.
Individual item loadings and internal consistency were examined as a test of reliability. Individual item loadings that are greater than 0.7 are considered to be adequate. As shown in Table 2, loadings for all measurement items are above 0.7, indicating that there is sound internal reliability. In addition, all the weights are statistically significant at p < 0.01. The almost uniformly distributed weights show each item contributes to each construct equivalently. In addition, we also investigated Cronbach’s alpha for internal consistency. Table 2 shows that Cronbach’s alpha for all constructs was greater than 0.7. The Average Variance Extracted (AVE) was also calculated. This shows the variance that a construct captures from its indicators, relative to the variance contained in measurement error. This statistic is generally interpreted as a measure of reliability for the construct and as a means of evaluating discriminant validity [5]. All AVEs for the constructs in our study were greater than 0.7. The indicated that 70% of the variance of the indicators could be accounted for by the latent variables. Also, if all composite reliability values are higher than 0.7, it can be concluded that the measurement has both internal consistency and convergent validity [65]. According to the results shown in Table 2, all result values in this study are higher than 0.8, which means that the measurement model of this study has suitable composite reliability.

The AVE is also used to assess discriminant validity. The square root of AVE should be greater than the correlations among the constructs; that is, the amount of variance shared between a latent variable and its block of indicators should be greater than the shared variance between the latent variables. Table 3 shows the inter-correlations of the constructs and variance shared between the latent variables and their indicators. The diagonal elements in Table 3 are the square root of the AVE. This showed that the square roots of each AVE value were greater than the off-diagonal elements. The measurement model, thus, had a reasonable degree of discriminant validity among all of the constructs. The results of the measurement analysis also indicated that all the constructs and measures have acceptable discriminant validity.

In order to verify the discriminant validity in more detail, a cross-loading analysis was also conducted. As can be seen in the cross-loading table (Table 4), all the loadings of the constructs of the latent variables were over 0.7 and all the factor loadings were significant at a confidence level of 0.01. Furthermore, for other constructs the loadings (cross-loadings) were below 0.7. This shows that the measurement model of this study has strong discriminant validity.

### Table 2
Internal consistency and convergent validity.

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
<th>Loading</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic motive</td>
<td>IM1</td>
<td>0.209</td>
<td>0.854</td>
<td>3.86</td>
<td>1.40</td>
<td>0.920</td>
<td>0.937</td>
</tr>
<tr>
<td></td>
<td>IM2</td>
<td>0.208</td>
<td>0.858</td>
<td>3.86</td>
<td>1.38</td>
<td>0.920</td>
<td>0.937</td>
</tr>
<tr>
<td></td>
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<td>0.908</td>
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<td>na</td>
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<td>1.23</td>
<td>na</td>
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Note: CMB marker is an item to check the common method bias in the study.

### Table 3
Correlation of latent variables.

<table>
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<tr>
<th>IM</th>
<th>EM</th>
<th>EP</th>
<th>PI</th>
<th>SI</th>
<th>EL</th>
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<td></td>
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<tr>
<td>Extrinsic motive</td>
<td>0.672</td>
<td>0.914</td>
<td></td>
<td></td>
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<tr>
<td>e-WOM participation</td>
<td>0.699</td>
<td>0.618</td>
<td>0.872</td>
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<tr>
<td>Personal identification</td>
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<td>0.461</td>
<td>0.604</td>
<td>0.511</td>
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<tr>
<td>CMB marker</td>
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<td>0.076</td>
<td>0.135</td>
<td>0.161</td>
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<tr>
<td>e-Loyalty</td>
<td>0.392</td>
<td>0.251</td>
<td>0.314</td>
<td>0.682</td>
<td>0.487</td>
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Note: The number in parenthesis is the square root of AVE.

### 6.2. Structural model assessment

The structural equation model proposed for this study is assessed, as shown in Fig. 3. With an adequate measurement model, the hypotheses were tested by examining the structural model. The R² value was used to assess the proportion of variance in the endogenous constructs that could be explained by the antecedent constructs. Approximately 53% of the variance in e-WOM participation was explained by the two motivational factors, and 49% of the variance in e-loyalty was explained by the two identification factors, making the interpretation of the path coefficients meaningful. The results also confirmed that intrinsic motive is a more influential motivational factor affecting e-WOM participation than extrinsic motive (b = 0.517, p < 0.01), e-WOM participation has more influence on social site identification than personal identification (b = 0.604, p < 0.01), and personal site identification has a stronger impact on e-loyalty than social site identification does in the e-commerce environment (b = 0.586, p < 0.01). The path coefficients from the PLS analysis are shown in Fig. 3. The coefficients in the model represent standardized regression coefficients.

After computing path estimates in the structural model, the PLS software was used to perform a bootstrap to obtain the corresponding t-values. Support for each hypothesis can be determined by examining the sign (positive or negative) and the statistical significance for the t-value for its corresponding hypothesis. All hypotheses were accepted with a significance level of 0.01, as represented in Fig. 3.

### 6.3. Testing mediating effect

After the structural model assessment, we investigated the mediating effect of ‘Site Identification’ at the relationship between ‘e-WOM Participation’ and ‘e-Loyalty.’ First of all we tested Model A of Fig. 4, a direct relationship of ‘e-WOM Participation’ and ‘e-Loyalty.’ As a result, the relationship is significant but the R² is relatively low (0.101). In Model B, and C of Fig. 4, we tested the mediating roles of ‘Personal Site Identification’ and ‘Social Site Identification.’ Fig. 4 shows that ‘Site Identification’ fully mediates the relationship between e-WOM participation and e-loyalty because significances of direct relationship disappear in both cases. Furthermore, each R² of the dependent variable is increased more than two and four times respectively, compared to the direct relationship. Consequently, these results indicate the importance of the role of site identification in converting the consumer’s behavior into loyalty to the site.

### 6.4. Common method bias

We investigated the presence of common method bias because dependent and independent variables come from the same source. The partial correlation technique was adopted by using a marker variable to control the common method bias [45,46]. Lindell and Whitney [46] showed that if a variable can be identified theoretically, it should not be related to other variables included in the study. Thus, it can be used as a marker variable. Therefore, any associations between marker and any of the other variables can be assumed to be due to the common method bias.
First, we computed the correlation coefficient between the marker and other variables (see Table 3). And we tested the significance of the relationships among our core variables after partialing out the impact of the marker variable. Next, we checked every relationship among constructs, which remained significant. As a result, we confirm that the correlation coefficient between the marker and other variables is not significant and the relationships among our core variables, after partialing out the impact of the marker, still remain significant.

7. Discussion and implications

This study attempted to examine the impact of e-WOM participation on e-loyalty from the perspective of the participant, not the reader. We introduced motivation theory to explain e-WOM participation, and employed identification theory to analyze the psychological aspect of the e-WOM participant. To achieve the goal of this study, we conducted a survey and proposed a model including 6 accompanying hypotheses. Implications from the results for academia and practitioners are discussed as follows.

First of all, we found that both intrinsic and extrinsic motives have a significant impact on e-WOM participation. This result is consistent with the results of Davis et al. [19] and Garrity et al. [33]. Our results combined with their results suggests that motivation theory can explain e-WOM participation. We compared path coefficients and found that intrinsic motives have a stronger influence on e-WOM participation than extrinsic motives. This difference implies that customers are more motivated by considering e-WOM participation as a ‘kind’ and ‘good’ behavior to themselves and to other customers; furthermore, they expect that other customers’ e-WOM participation will help them later. The previous literature also discusses the fact that intrinsic motives play a more important role than extrinsic motives in education and learning [21]. In addition, it has been found by other researchers that strong external compensation weakened intrinsic motives [44]. Hence we can motivate customers to participate in e-WOM by stimulating their intrinsic motives through, for example, advertising e-WOM participation as ‘kind’ and ‘benevolent’ behavior, as well as promoting extrinsic motives through mileage, bonus points, or other compensation. In other words, to make the customer aware of the ‘goodness’ and ‘kindness’ of e-WOM is more effective than to incite them by simple external compensation.

We also found that e-WOM participation behavior enhances social identity among customers. The findings of this study also suggest that social identity plays a role in using the e-WOM system. It is necessary for practitioners to maintain an e-WOM system from the perspective of communication media so that they can develop strong social identity on the site through enhanced interaction with other customers. As discussed earlier, attempts such as increasing economic incentives, enhancing interaction with a manager’s active feedback, and promotion of campaigns inspiring altruism in terms of e-WOM helps to improve the interactions between customers so that they can develop a strong social identity. Also, installation of an e-WOM system through which customers can post e-WOM using richer media, such as images and videos, is also helpful in enhancing the quality of the interaction between customers. The net result is that this will lead customers to build e-loyalty towards the online site.

Finally, both personal and social site identifications turned out to have a significant influence on customer e-loyalty. However, personal identification has a stronger path coefficient and higher mean value than social site identification. Personal site identification was measured by the degree of fitness between the image achieved by products and the service that the site provides, and the image of the customer. The take-away is that when customers identify themselves by continuing the service that the site provides, and the image of the customer. The previous literature also discusses the fact that intrinsic motives have a stronger path coefficient and higher mean value than social site identification. Personal site identification was measured by the degree of fitness between the image achieved by products and the service that the site provides, and the image of the customer. The take-away is that when customers identify themselves by continuing the service that the site provides, the image of the customer. The previous literature also discusses the fact that intrinsic motives have a stronger path coefficient and higher mean value than social site identification.

Fig. 3. Structural model results.

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online shopping site. Practically speaking, this result stresses the importance of the customization of internet services and site interactivity. To promote personal site identification, customized content service and proper feedback replies from shopping sites are required. Customized content service and high interactivity of site enhance customers’ satisfaction and give them opportunities to understand the shopping site. In order to corroborate these aspects, machine learning technology that customizes sites and extends communication channels, can be employed.

This study demonstrates that these strategies (e.g., customization of internet services and site interactivity enhancement) increase personal site identification, and ultimately make customers loyal. Furthermore, the interaction among customers promotes the formation of social site identification. Loyal customers are recognized as those who believe themselves to be important to other customers on the site. Thus, as discussed earlier, the installation of an e-WOM system that allows customers to easily interact with others must be one of the key success factors of the loyalty program of an e-commerce site. Furthermore, the development of a communication channel connecting customer to customer is a requirement, as well as a channel between the shopping site and the customers. For example, it is helpful for enhancing social site identification to encourage customers to reply to other customers’ e-WOM or to offer them an exogenous reward for doing so.

This study provides several opportunities for future research. First, the surveys were mainly conducted in a single online shopping mall. Thus, in order to further generalize our results, we need to collect data from a variety of online shopping malls. Secondly, we investigated the respondents’ satisfaction with a shopping site. There were a few respondents that had bad feelings about them. Customers who have negative feelings may write negative e-WOM comments because they do not like the online shopping experience. This behavior can be different from that of the respondents who are satisfied with the online shopping experience. Thirdly, the research model and analysis methods of this study were designed based on a cross-sectional data set. This has the apparent limitation of not allowing for the consideration of the lifecycle of social identity. Thus, time-series analysis methods will be necessary to identify dynamic relationships between participation behavior and online social identity development.

Finally, according to product type, the customers’ site identification might be different depending on product types (e.g., CDs, DVDs, books vs. fresh food, clothes) because they feel much more uncertainty when they purchase heterogeneous goods (e.g., fresh food, clothes) rather than homogeneous goods (e.g., CDs, DVDs, books) from the internet; that is, customers who purchase heterogeneous goods have a greater tendency to rely more on e-WOM. Eventually, the role of e-WOM for heterogeneous goods must be more critical than that of the others. It would be worthwhile to study the effect of the interactivity of an online shopping site on different product types. The results of such a study would have profound practical implications for online shopping mall management.

8. Conclusion

We believe that e-WOM has become an important part of the online shopping experience. Understanding the phenomena is essential to electronic commerce systems and user behavior. This study has helped to bring additional insight to the relationship between customer participation in e-WOM and consumer purchases. The empirical findings suggest that the level of motivation encourages customers to participate in review systems, which is in line with prior e-WOM research. Specifically, it was found that internal motivation is more powerful in promoting e-WOM systems. At the same time, the results of this study also reveal that customer’s review participation has a significant impact on site identification building and should not be ignored by online retailers. These insights not only help researchers better understand how incentives for review posting and customer’s review posting behavior work in electronic markets, but also provide guidelines for online retailers to better adjust their IT strategies to improve customer retention.

It is hoped that future research will be conducted on user review posting behavior and site identification. Is theory could be extended from the typical context of using the system to purchase goods to situations in which users make voluntary contributions to systems. Given that electronic markets have become an irrevocable part of modern society, further research on identification and user participation is warranted.

References


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