Impacts of Sociability on Perceived Information Quality of Customer Reviews for Online Shopping Sites

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ABSTRACT

Although there have been studies regarding the influence of customer reviews on consumer decision making at online shopping sites, research on factors affecting the perceived customer review quality for online shopping sites is limited. This study posits that sociability, which is one of the environmental factors of an online shopping site, can affect the quality of customer reviews. Sociability is a key factor in building a collaborative environment online, but studies have been limited to applying sociability to customer reviews that are the result of a collaborative environment. This study expects that sociability affects the performance of online shopping sites through the perceived information quality of customer reviews, and customers' efficacy. More specifically this study investigates the structural relationship between sociability, self-efficacy, collective efficacy, and the perceived information quality of the reviews in an online shopping context, regarding the patronage intention of customers. This study was conducted using a survey of 361 college students. The structural equation model results indicate that user perception of sociability increases self-efficacy and collective efficacy. The improved efficacy enhances the perceived information quality of reviews for online shopping sites, which increases patronage intention of customers. This study found that online shopping sites require a platform for customers to engage in social interaction to enhance their customers' loyalty and lifetime value.

Key words: *Customer Review, Sociability, Efficacy, Information Quality, Patronage Intention.*

1. INTRODUCTION

Online retailing is one of the fastest growing methods of retailing. In Korea, online retail accounts for 10.9% of all sales in 2013, and 14.7% in 2015 [1]. There is fierce competition among online shopping sites, which has resulted in online retailers focusing on customer retention since costs for acquiring customers are much higher than retaining customers. Therefore, online retailers stress sustaining patronage behavior relative to acquiring new customers [2].

Prior research on patronage behaviors for online shopping sites have focused predominantly on perceived value [2]-[4]. System quality (security and accessibility), information quality (variety and currency) and service quality (quickness and responsiveness) influence perceived value of an online shopping site and can increase patronage intention [3]. In addition to perceived value, low information searching cost and moral hazard can increase repeat purchase intention [4]. And it is argued that repeat purchase intention can be increased by satisfying utilitarian goals with product information, price, and convenience of the site, and by satisfying hedonic goals concerning adventure and gratification [2].

Customer reviews have been considered an important factor affecting consumer buying behavior for online shopping sites [5]-[7]. During the initial stages of internet shopping development, most internet shoppers bought searching goods, such as books, and music CDs online, and it was questionable that shopping goods, such as clothing, could be sold effectively online. However, customer reviews related to product motivated customers to conduct considerable shopping using the internet. Accordingly, customer reviews have become an important element that can affect patronage behavior [5]. It is demonstrated that the number of customer reviews on a product can be interpreted as the popularity of the product, resulting in an increase in customer intention to buy the product [6]. The quality of customer reviews incorporating relevant, timely, accurate, and comprehensive information can positively impact product evaluation and intention to buy the product [7].

Although customer reviews related to product influence consumer decision making, there is limited research on factors that provide beneficial effects on customer reviews for online shopping sites. In particular, there is little research on the factors that positively impact perceived customer reviews' quality for online shopping sites. Since customer reviews are an important factor for consumer decision making in information search stage, perceived quality of customer reviews can affect the decision making process, including alternative evaluation, purchase, and post-purchase behavior. Therefore, this study

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examines the factors that influence perceived quality of customer review and its outcome.

This study has focused on sociability as a key variable in conducting research on customer reviews that may have a major impact on the performance of online shopping sites. The sociability of media is a key factor in overcoming the limitations of social cues that online is considered to be inferior to offline and establishing a collaborative environment [8]. Although customer reviews can be seen as collaborative activities among customers online, there is limited research that has adopted sociability in the context of online shopping sites. Since sociability can overcome the limitations of online and enable social collaboration through social interaction, this study tries to verify that the sociability of online shopping site affects the quality of customer review and that the results could improve the patronage intention.

This study was conducted in the context of the influence of information sources during information search stage in consumer decision making stage. When searching for online, the overall deal evaluation of the transaction is high, and when the perceived risk is low, the consumer's behavioral intention increases [9]. Therefore, when the information value of the consumer reviews as an information source is high, the assessment of transactions can be increased, the perception of risks can be reduced, and therefore lead to positive behavioral intention.

Specifically, this study posits that online shopping site's sociability has a positive impact on the perceived information quality of customer reviews, thereby enhancing patronage intention of online shoppers. Sociability refers to the extent that media environments support social interactions [10], and is influenced by environmental factors [11]. This author expects that sociability influences participants' perception of self-efficacy, which is the belief that a user can attain one's goal, and collective efficacy, which is the belief that the group can achieve a collective goal. Furthermore, this study contends that the strengthened perception of self-efficacy and collective efficacy lead to higher patronage intention by perceiving higher information quality from shopper reviews.

2. LITERATURE REVIEW

2.1 Sociability

Many online media sites support social interaction, resulting in social networking and knowledge sharing [12]. For online shopping site, which is the focus of this study, shoppers interact by exchanging reviews concerning product which influence purchase decisions.

In this sense, promoting social exchange among consumers is an important function for online shopping sites. As a result, online shopping sites try to become a social space where people can share their comments and reviews related to product, and obtain information from other consumers.

Sociability is referred to as an environmental factor of media that supports participants' interaction [13]. Accordingly, sociability is needed for the online shopping site attempts to create a sociable arena. Sociability is considered as a crucial

factor for determining a successful social application and transforming virtual space into social space [14].

Sociability is defined as "the extent to which users are facilitated to carry out social interactions and to maintain social relationships using the system" [11]. Sociability influences participants' cognitive and socio-emotional processes, such as learning and group dynamics, since it is the extent the online environment becomes social space [15].

Sociability is influenced by other environmental factors such as social climate, benefits and purpose, people, interaction richness, self-presentation, and support for formal interaction [11]. A study based on TAM (technology acceptance model) found that perceived sociability increases usefulness and ease of use, as well as resulting positive attitude and purchase intention [14].

In addition, sociability affects participants' self-efficacy perception. Perceived social support can increase self-efficacy [16]. Social linkages among participants enhance the perception of self-efficacy in the media context [17]. In social cognitive theory, enactive attainment, vicarious experience, verbal persuasion, and physiological state are factors that affect self-efficacy [18]. Sociability in online shopping sites can positively affect self-efficacy by creating favorable environments using vicarious experience and verbal persuasion. Therefore, this study predicts that the sociability of online shopping sites could increase the self-efficacy of successful purchase through the online shopping site, and suggests following hypothesis:

H1: Sociability has a positive influence on self-efficacy for online shopping site users.

Moreover, sociability has a positive impact on participants' perception of collective efficacy. A study on sociability found that an increasing number of connections in online media are strengthening perception of collective efficacy [19]. Antecedent factors that affect collective efficacy are identified as mastery experience, vicarious experience, persuasion, and socialization [18]. Since sociable environments can enhance social persuasion [20], this study assumes that sociability has a positive impact on collective efficacy of site users, which implies a customer group can make a successful outcome for online shopping sites.

H2: Sociability has a positive influence on collective efficacy for online shopping site users.

2.2 Self-efficacy

In social cognitive theory, self-efficacy is defined as "people's beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives" [18]. A person who perceives high self-efficacy performs better on given tasks than others [18], [21]. Self-efficacy exerts a strong influence on the degree of effort given during the task [22], and actual performance [23].

Prior studies have investigated self-efficacy in various contexts since self-efficacy is a task-specific construct [18]. For example, computer-efficacy refers to the belief that one has the ability to perform well in utilizing computer systems [23].

Internet self-efficacy [24], media self-efficacy [17], and social media self-efficacy [25] have been investigated as well.

Decision making at online shopping sites can be approached in terms of tasks for successful purchasing, prior research studied the impacts of self-efficacy in an online shopping context. Internet self-efficacy has a positive link to buying intention for internet shopping sites [26]. Online shopping self-efficacy affects positively online shopping attitude [27]. Still, there has been limited research to date concerning online shopping site-specific self-efficacy. As a result, this study focuses on self-efficacy in online shopping sites. It can be defined as the belief of people in their capability to reach desired outcome, that is, successful purchase for specific online shopping site.

Further, self-efficacy has a positive impact on collective efficacy [28], [29]. It is empirically validated the positive link between self-efficacy and collective efficacy in the computer-supported collaborative learning context [30]. Accordingly, this study assumes that self-efficacy for online shopping site has a positive impact on the collective efficacy of online shopping site users.

H3: Self-efficacy has a positive influence on collective efficacy of online shopping site users.

It is suggested that computer self-efficacy has a positive impact on computer-related affective response and actual performance [23]. Media self-efficacy facilitates the positive perception of media characteristics, such as media credibility and perceived media impact [17]. Social media self-efficacy has a positive link to the credibility of online social information, which is one of the information quality elements [25]. Thus this study assumes that self-efficacy for online shopping site enhances perceived information quality of reviews, which is one of the media characteristics.

H4: Self-efficacy for online shopping sites has a positive influence on the perceived information quality of reviews.

2.3 Collective Efficacy

Social cognitive theory defines collective efficacy as a group level efficacy. Collective efficacy is defined as "a group's shared beliefs in its conjoint capability to organize and execute the courses of action required to achieve designated goals" [28].

In the context of online shopping site, collective efficacy can be defined as the belief that a group of customers can distinguish good and unsuitable products from each other and perform successful purchases. This study suggested hypothesis 2 and hypothesis 3 based on theoretical background that sociability [19] and self-efficacy [28], [29] have a positive effect on the perception of collective efficacy in online shopping sites.

Hence, self-efficacy and collective efficacy are key elements of active participation in media usage [19]. Collective efficacy enhances the perception of capabilities of the group, and increases collective action. People who are perceiving strong collective efficacy provide more mutual support among group members, and work collaboratively to solve group problems [29]. Collective efficacy exerts a positive impact on the actual perception and performance of the group [31]. It directly influences mutual support, forming alliances, and performance quality of the group, by making group members more interactive and collaborative [28].

Thus, this study assumes collective efficacy for online shopping sites has a positive impact on perceived information quality of reviews which is one of the performance qualities of online shopping users.

H5: Collective efficacy for online shopping sites affects positively perceived information quality of reviews.

2.4 Information Quality

The perceived quality of information generated in the online community by participant interaction is affected by the degree of comprehensiveness, personalization, timeliness, and structure [32]. In the context of online shopping sites, this study manipulates the quality perception of reviews in terms of information quality. Information quality of reviews is defined as the degree to which reviews are helpful in the consumers' decision making process.

Information quality can be studied as a multi-dimensional construct. Information quality has dimensions such as completeness, which means how information can satisfy user's information needs, trustworthiness, which is related to accuracy of information [33], and timeliness associated with how up-to-date information is provided [34]. However, information quality can be studied at a single dimension as well. Based on the Information System Success Model [35], information quality can be studied in a single dimension, and there are measurements that ensure reliability and validity [36]. This study adopts the construct of information quality in a single dimension in order to verify the overall information quality of customer reviews.

Product reviews found on online sites are an important source of product information [37]. Since the quality of peer comments related to product reviews have informative value, it can satisfy shoppers' utilitarian goal, which in turn increases repeat purchase intention for online shopping sites [2].

Therefore, this study assumes the perceived information quality of reviews increases patronage intention for online shopping sites.

H6: Perceived information quality of reviews affects positively to patronage intention for the online shopping site users.

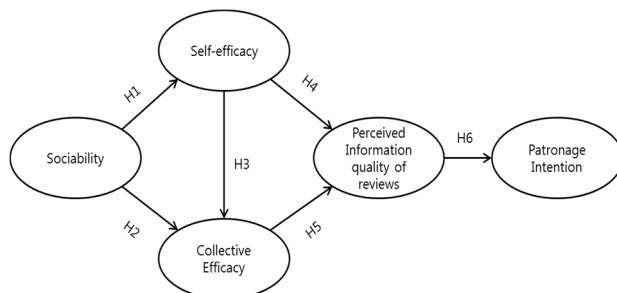The research model based on these hypotheses is shown in Fig. 1.

Fig. 1. Research Model

Meanwhile, patronage intention is being used as a typical behavioral intention applied to research related to retail store such as online shopping sites [38]. Patronage intention refers to the store loyalty, which means intention to visit a specific store continuously [39].

3. METHOD

3.1 Sample

Data was collected from 361 undergraduate students at a private university in Gyeongbuk, Korea, who had visited online shopping sites during the previous month. Participants answered questionnaires related to their online shopping site experience and responded based on a specific online shopping site they mainly used. Respondents' mainly used shopping site s were '11st'(109, 30.2%), 'G-market'(50, 13.9%), 'Auction(24, 6.6%)', and Others(178, 49.3%).

Other key characteristics of sample are as follows. 175 respondents (48.5%) were male and 186 (51.5%) were female. 341 respondents (95.8%) were aged 18~25.

132 participants (36.6%) had visited online shopping sites 1-2 times, 108 participants (29.9%) had visited 3-5 times, 73 participants (20.2%) had visited 6-10 times, and 48 participants (13.3%) had visited online shopping sites more than 10 times during the previous month with the purpose of buying goods, gathering information, or for gratification. In addition, 17 participants (4.7%) did not make purchases, 168 participants (46.5%) made one purchase, 93 participants (25.8%) made two purchases, and 83 participants (23.0%) made three or more purchases during the previous month.

3.2 Measurement

This study used a questionnaire using constructs based on previous literature (See Table 1). All constructs were measured on multiple items using a 7-point Likert scale (1=strongly disagree, 7=strongly agree), and adjusted to fit the research context of online shopping site.

Table 1. Measurement Items

Construct		Item	Factor Loading	Applied from
Sociability	SOC1	I can easily communicate with other shoppers in the shopping site	.859	
	SOC2	I do not feel lonely in the shopping site	.799	[13]
	SOC3	I feel comfortable with the shopping site	.862	
Self-efficacy	SE1	I am confident that I will be able to shop well in the shopping site	.855	
	SE2	I believe I have the ability to shop well in the shopping site	.863	[32]
	SE3	If it were entirely up to me, I am confident that I would be able to shop well in the shopping site	.828	
Collective Efficacy	CE1	I feel confident about the capability of users to perform the shopping very well	.719	
	CE2	The users are able to solve difficult shopping tasks if we invest the necessary efforts	.867	[33]
	CE3	I feel confident that users will be able to manage effectively unexpected troubles	.847	
	CE4	The users are totally competent to solve the shopping task	.821	
Perceived Information Quality of Reviews	IQC1	The reviews shared by users in the shopping site are relevant to the shopping	.599*	
	IQC2	The reviews shared by users in the shopping site are easy to understand	.586*	
	IQC3	The reviews shared by users in the shopping site are accurate	.826	[34]
	IQC4	The reviews shared by users in the shopping site are complete	.734	
	IQC5	The reviews shared by users in the shopping site are reliable	.799	
	IQC6	The reviews shared by users in the shopping site are timely	.761	
Patronage Intention	PI1	I intend to increase my use of the online shopping site in the future	.862	
	PI2	For future shopping I would use the online shopping site	.888	[35]

Note: 2 items(*) were removed due to the unsatisfactory loadings

3.3 Measurement Model

The exploratory factor analysis for the selection of the measurement items was conducted before reviewing reliability and validity of the measurement items used in this study. It should be noted that two items concerning information quality of reviews were removed due to the unsatisfactory factor loadings (<0.6) on their hypothesized factor (See Table 1).

Cronbach's alpha for each construct exceeded the minimum threshold of 0.7 as shown in Table 2, making the reliability of the constructs acceptable based on the internal consistency.

Table 2. Reliability and Convergent Validity

Construct	Item	Factor Loading	Cronbach α	C.R.	AVE
Sociability	SOC1	.839*			
	SOC2	.753*	.866	.706	.696
	SOC3	.904*			
Self-efficacy	SE1	.836*			
	SE2	.916*	.913	.843	.780
	SE3	.894*			
Collective Efficacy	CE1	.789*			
	CE2	.881*			
	CE3	.881*	.917	.868	.740
	CE4	.886*			
Perceived Information Quality of Reviews	IQC3	.856*			
	IQC4	.807*			
	IQC5	.857*	.898	.840	.691
	IQC6	.804*			
Patronage Intention	PI1	.975*			
	PI2	.863*	.913	.887	.848

* p<.01

And then confirmatory factor analysis (CFA) using AMOS 23.0 was applied to verify convergent and discriminant validity of constructs. Average variance extracted (AVE), composite reliability (CR), and the squared correlation matrix were employed to test the measurement model.

The result of CFA reports χ^2 =194.74, df=94(p=.000), GFI=.936, TLI(NNFI)=.970, CFI=.976, AGFI=.907, RMSEA=.055, and RMR=.078, indicating the goodness of fit of the measurement model is acceptable.

Convergent validity can be obtained when the factor loading for the construct is statistically significant and AVE is greater than 0.5 and CR is greater than 0.6 [36]. Convergent validity was assessed by AVE and CR values of the measurement model (see Table 2). Average variance extracted values ranged from .691 to .848, and composite reliability values ranged from .706 and .887, supporting the measurement model's acceptable convergent validity.

Discriminant validity can be confirmed when the AVE of a construct is greater than the squared correlation with other constructs [36]. As displayed in Table 3, AVE values are greater than the squared correlation of constructs, demonstrating the measurement model's discriminant validity is acceptable.

Table 3. AVE and $\emptyset^2$ Matrix

Construct	SOC	SE	CE	IQC	PI
SOC	**.696**				
SE	.080	**.780**			
CE	.124	.393	**.740**		
IQC	.208	.225	.360	**.691**	
PI	.172	.088	.071	.235	**.848**

Note: Values in diagonal line are the AVE, off-diagonal values are squared correlation(ϕ^2)

4. STRUCTURAL MODEL

As the reliability and validity of constructs were secured, the proposed research model was tested with structural equation modeling (SEM) by using AMOS 23.0. The results indicate an adequate fit of the proposed model with χ^2 =246.85, df=98(p=.000), GFI=.922, TLI(NNFI)=.957, CFI=.965, AGFI=.892, RMSEA=.065, RMR=.176. In addition, SMR(squared multiple correlation) was examined to confirm the explanatory power of the preceding variables for the endogenous variable in SEM. As a result, self-efficacy was .281, collective efficacy was .430, information quality was .382, and Patronage intention was .330.

Table 4 indicates the results of the hypotheses tests. All hypothesized paths were significant at the 0.05 or 0.01 level of significance.

The results suggest that sociability positively affects online shopping site self-efficacy (H1) and collective efficacy (H2). Self-efficacy in the online shopping site positively impacts collective efficacy (H3) and information quality of reviews (H4). Collective efficacy positively affects information quality of reviews (H5). Finally, the information quality of reviews positively impacts patronage intention for the online shopping site (H6).

Table 4. Result of Hypothesis Test

Hypothesis	Constructs constrained	Loading	t-value	Test Results
H1	Sociability ⇒ Self-efficacy	.220**	4.950	Supported
H2	Sociability ⇒ Collective Efficacy	.157**	4.082	Supported
H3	Self-efficacy ⇒ Collective Efficacy	.580**	10.682	Supported
H4	Self-efficacy ⇒ Perceived Information Quality of Reviews	.164*	2.589	Supported
H5	Collective Efficacy ⇒ Perceived Information Quality of Reviews	.482**	7.493	Supported
H6	Perceived Information Quality of Reviews ⇒ Patronage Intention	.533**	9.239	Supported

*$p < .05$, **$p < .01$

5. DISCUSSION

This study demonstrates that sociability in an online shopping site can enhance the perception of self-efficacy and collective efficacy of users. A heightened sense of efficacy can positively impact perceived quality of reviews. Perceiving higher quality of reviews increases consumers' patronage intentions. Study results suggest that an online shopping site should focus not only on selling goods, but also encouraging consumers to add valuable information, and enhance product knowledge in a sociable environment.

While prior studies related to customer review dealt with the importance of customer reviews, this study has significance in that it deals with the environmental factor of the online shopping site affecting the customer perception of information quality of customer reviews which leads to online shopping sites' performance such as patronage intention.

This study analyzes sociability within internet shopping sites due to the lack of research on sociability focusing on online shopping contexts. This study finds that in addition to providing accurate product information along with variety of product assortments, successful online shopping sites require a virtual social platform which enables customers to engage in customer-customer and customer-content interactions.

Result suggests that perceived information quality of reviews, which is an important factor in consumer decision making, can be improved by strengthening self-efficacy and collective efficacy of site users. Consumers with high self-efficacy and collective efficacy perceive that shared reviews are more accurate, complete, reliable, and timely. Thus an online shopping site with users having higher self-efficacy and collective efficacy serves as a more credible source of product information than its competitors.

Furthermore, perceiving good information quality of reviews is positively related to patronage intention of customers. The information quality of reviews can differentiate shopping sites while other sites are competing on price.

This study suggests that the research related to the sociability can be applied not only to social media such as SNS but also to online shopping sites where commerce is carried out. And it also has academic significance that it expanded the scope of research on customer reviews in the online shopping site that was limited in the meantime.

The results of this study can provide various practical implications for online shopping site management. An online shopping site that is in a fierce competition can increase the customers' lifetime value by looking for ways to enhance their social interactions with other customers and sellers. That is, it is necessary to manage sociability in order to establish lasting relationship with customers. Therefore, it is required to manage and compensate competent reviewers in the online shopping sites to support good quality of information. And it can increase customer loyalty and lifetime value by enhancing customer retention rate, and share of wallet.

An online shopping site can manage sociability by controlling factors that comprise sociability, such as social climate, benefits and purpose, people, interaction richness, self-presentation, and support for formal interaction [2]. Sociability can be strengthened when the online spaces can be provided with social support, which is one of the representative characteristics of social media such as SNS [44]. Self-esteem support, informational support, emotional support, and social network support are the areas where social support should be made [44], [45], and it is necessary to make the online shopping site to be a space where participants can interact with each other through such social support.

As self-esteem support can be implemented when tools are provided to enhance individual reputation [46], thus, it is possible to introduce reputation management system within online shopping sites to build profiles of individuals and assess their activities. Emotional support is an environmental factor necessary to establish intimate relationships with other users [47], an online shopping site can introduce features such as messaging system between users and a function that allows users to express emotions through various emoticons. Informational support can be enhanced when it is possible to provide personalized information while providing variety of information [48]. Therefore, the sociability of online shopping sites can be enhanced when they have the ability to provide customized information for individual consumers, such as presenting customer reviews of a preferred reviewer or of a reviewer with similar taste to an individual. Finally, since social network support can be provided when space for people with common interests is presented, community functions based on interests need to be introduced into online shopping sites.

6. LIMTATIONS AND FUTURE RESEARCH

This study focuses on the factors that can influence information quality of reviews shared on online shopping sites. However, a limitation to this study is the scope was limited to sociability and efficacy. Therefore, additional research is

needed concerning other factors that may affect the perceived information quality of reviews. Further research could address the antecedent variables to perceived information quality of reviews, such as characteristics of the system, users, and policy.

In addition, self-efficacy and collective efficacy may be factors that directly affect consumers' behavioral intentions, but this study focused on the quality perception of customer reviews and did not consider the path of efficacy beliefs to behavior. Thus, it is necessary to study the direct path of efficacy belief to behavioral intention along with other factors that could improve efficacy belief for future comprehensive study.

Also, this study suggests that the information quality of reviews is a significant factor that increases patronage intention. Hence, there is the need for extensive research on factors that increase patronage intention in the competitive environment of online shopping sites.

Future study needs to validate results due to the sample of this study was limited to undergraduate students in Gyeongbuk, Korea. Furthermore, it is necessary to determine whether there are differences in types of online shopping sites, as well as categories of products.

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