

Understanding the antecedents of consumer brand engagement by managing brand communities on social media

Kuan-Yu Lin Travis K. Huang Yi-Ting Wang Yung-Hao Liao
 Ling Tung University Ling Tung University Ling Tung University Ling Tung University
ntustmislalab@gmail.com travisk.huang@gmail.com yw7yw7k@gmail.com A7M5001@stumail.ltu.edu.tw

Abstract

As social media provide companies with opportunities to create touch-points by enabling consumers to interact with brands in new ways, a key issue for organizations is how to use brand communities to engage customers and enhance their relationships with brands. Brand community interactivity is one of the latest developments to engage consumers in online brand communities. The objective of brand communities is not only to attract potential customers, but also to retain loyal consumers and gain advocates. Thus, brands and companies' social media activity should be appropriately organized and managed for high-level consumer brand engagement (CBE), which is a comprehensive construct that allow companies to examine the bond between their brands and consumers. The essence of this CBE bond is related to the involvement of consumers, as it increases the touch-points between them and the brand. This study examined perceived interactivity as a driving factor in the context of a brand community on social media with the purpose of encouraging consumer community engagement, community satisfaction, and consumer brand engagement (CBE). Two second-order constructs were operationalized in the research model. Communication, responsiveness, and control were treated as reflective factors to create the second-order construct "perceived interactivity," while the other second-order construct "CBE" comprised cognitive processing, affection, and activation as reflective indicators. The results, based on data collected from 328 social media users who are followers of smartphone brands' Facebook pages, indicated that perceived interactivity is likely to significantly affect consumer community engagement and community satisfaction, which in turn foster brand engagement. Successful social media marketing practices for companies should take responsibility for transforming consumer community engagement into CBE, as it is imperative for organizations building brand communities to enhance their consumer community satisfaction through proper community management to achieve high CBE.

1. Introduction

Over the past decade, social media has presented a unique opportunity for brands to foster their relationships with customers. As Baird and Parasnis [1] suggested, companies need to exploit the potential of social media by designing experiences that deliver tangible value in return for retaining consumers. As the number of social media users is expected to exceed 200 million in 2019, the number of monthly social media active users is expected to reach 3.02 billion by 2021 [2]. We can foresee the growth of brand communities on social networking sites (SNS) in the future. Brand communities on social networking sites are spaces online for social media users of common interests to share experiences [3][4][5], thereby providing opportunities for instant engagement. In fact, Brand communities on social media have been proved to positively influence customer and brand relationships [3][4][5]. A key issue for organizations is how to use brand communities to engage customers and enhance their relationships with brands.

Most consumer interactions take place on consumer-generated platforms such as social networking sites [6]. Social media has become the best way for sharing experience ever developed [7]. Once establishing successful customer-brand relationships through SNS, organizations have a new channel to convince consumers that it is wise to choose their products or services by posting appropriate content. By means of social influence, social media can facilitate brand advocates to affect other people's attitudes toward their brands [8]. Jahn and Kunz [9] showed that Facebook fan pages are useful for reinforcing the relationships between brands and consumers. Customer-brand relationship characteristics have been proved to affect consumers' engagement with Facebook brand pages. The objective of brand communities is not only to attract potential customers, namely social media users, but also to retain loyal consumers and gain advocates. Actually, brand communities on SNS enable customers to form an emotional connection with the specific brands. Thus, brands and companies' social media activity should be

appropriately organized and managed for building better consumer brand relationships.

Consumer brand engagement (CBE) is a relatively recent concept that expands on existing theories of relationship marketing. CBE implies emotional commitment to a brand, and it has been regarded as a critical driver of the consumer decision-making process. A successful CBE strategy allows all participants to share their experiences with the brand, eventually resulting in brand growth in terms of increased revenues, profitability, market share, and brand loyalty [10]. Thus, CBE has become a worthwhile investment for companies seeking to increase customer loyalty. Companies need to implement their CBE strategies successfully to involve real consumers in the presentation of their products or services. As mentioned above, brand communities on SNS are the best way for companies to execute CBE effectively.

As the literature on consumer engagement has grown significantly, the antecedents and outcomes of CBE have been revealed [10]. Higher levels of brand-related consumer engagement lead to successful outcomes of social media activities [6], which have positive effects on the users' attitudes and behavior [11]. For instance, consumer engagement significantly affects the dimensions of CBE (cognitive processing, affection and activation), and that affection and activation positively influence brand loyalty. Surprisingly, cognitive processing negatively impacts brand loyalty [10]. Besides, the use of SNS leads to greater online behavior by the users [12]. That is to say, user's engagement will increase. For example, the daily use of Facebook has also been shown to be a strong predictor of social media user's community satisfaction from SNS [13]. This study's goals were focused not only on consumers' engagement with specific brands, but also on their engagement in specific brand communities. These two types of engagement, namely community engagement and CBE, are different in nature. Both play important roles in shaping social media management within brand communities on SNS. The relationships between consumers' community engagement and CBE were further explored and identified in the following sections.

Many studies have examined the effects of perceived interactivity between users in terms of their psychological state during interactions with specific online media or websites [14][15][6]. For instance, perceptions of interactivity have a positive effect on the user's emotional response to the brand community [16]. Companies need to be conscious of the experience they're delivering, and to deliver it consistently. As social media users are sensitive to

highly interactive features [17], clarifying the nature of the perceived interactivity in brand communities seems to be the key to establishing successful social media tactics. Perceived interactivity may include interactions with both other consumers and the brand companies. Hence, the study investigated how social media user perceptions of interactivity affect their community engagement and community satisfaction.

Evaluation of the relationship between perceived interactivity and community satisfaction is incomplete without considering the effects of community engagement. Even social media users who perceive high interactivity may still improve their community satisfaction through greater community engagement. After clarifying this effect of community engagement, organizations are able to take action to enhance user levels of perceived interactivity.

When consumers look for a feature-rich smartphone with top-of-the-line specifications, they tend to shop online and consider a wide range of smartphones from top brands such as Apple, Samsung, Sony, and more. However, the consumer's favorite brand leads to the actual choice. This is precisely the effect of CBE. The target community of this study is smartphone brand communities on SNS in Taiwan. The top nine smartphone brands in Taiwan are Apple, Samsung, ASUS, SONY, OPPO, HTC, Mi Taiwan, Sharp, and LG. Each brand has its own Facebook fan page. Social media users not only contribute personal information related to their interests, but also participate in specialized groups on SNS. Hence, the study investigated the effects of perceived interactivity for brand communities on SNS in the context of smartphone brands in Taiwan.

An investigation was conducted over three months. The study participants were members of smartphone brand communities in Taiwan. In fact, they were the social media users who were consumers of the brand communities in SNS websites. In addition to gaining greater understanding of how to increase members' community engagement and community satisfaction by launching brand communities on SNS, the study objectively assessed the factors that increase the degree of CBE. Hence, the causal linkages between consumers' community engagement and CBE, and also between their community satisfaction and CBE, were evaluated. The study aimed to answer the following questions: How does consumers' perceived interactivity in brand communities on SNS improve their community engagement and enhance their community satisfaction? What is the relationship between members' community engagement and their community satisfaction with a brand? Does social media users' community engagement affect CBE?

2. Literature review

As the study intended to identify the effects of brand communities' perceived interactivity, appropriate dimensions were considered and included in the research model. These dimensions were identified by referencing the literature on perceived interactivity. The concept of CBE was introduced as a source of cues for exploring the possible outcomes of perceived interactivity, such as community engagement and community satisfaction.

2.1. Consumer brand engagement

In past decades, the concept of consumer brand involvement has gained great attention and been treated as a valuable indicator of the relationships between consumers and brands [18]. Consumer brand involvement refers to a consumer's perception of the personal relevance of a brand, and measures his/her passive (rather than active) attitudes and behaviors. However, as social media environments greatly affect consumer/brand relationships, the dynamics of interactive consumer/brand relationships should be considered within a broader context. Hence, consumers' active roles and behaviors in brand-related processes have been observed in recent studies, and measured using the concept of consumer engagement, which is defined as a psychological state that arises due to interactive consumer experiences with a brand [19]. The literature on consumer engagement is growing significantly, as engagement is viewed as a cognitive and affective commitment to more "active" relationships with brands [11].

By reviewing the conceptualizations of engagement across several academic disciplines, especially marketing [19][20], the concept of CBE was proposed to have three dimensions [21], which are related to the cognitive, emotional, and behavioral nature of engagement. The first dimension is cognitive processing, which is defined as "the consumer's degree of brand-related thought processing and elaboration during the interaction between consumer and brand." The second dimension is affection, which refers to "the consumer's level of positive brand-related affect during the interaction between consumer and brand." The third dimension is activation, which represents "the consumer's degree of energy, effort and time spent on a brand during the interaction between consumer and brand." [21]. An associated measurement instrument, the CBE scale, was developed by Hollebeek, Glynn, and Brodie [21]. This 10-item scale has exhibited construct validity [22][23][24].

CBE has been treated as a new indicator for evaluating brand performance [25][26], and has been proven to positively affect organizational performance outcomes, such as consumers' brand loyalty, brand referrals, sales growth, and profitability [27][10]. Hence, it is critical for organizations to keep finding ways to increase CBE. Indeed, several different business strategies exist for accomplishing or approaching this goal. With the trend toward social media, we foresee that the number of social media users and the amount of their usage will continue to grow [28]. Organizations increasingly tend to establish brand communities for customers to discuss their experiences and opinions. The formation of brand communities has been proven to increase consumer loyalty [4][5]. Facebook fan pages have proven highly useful for strengthening the relationships between organizations and their customers [9]. Establishing brand communities on SNS is an excellent strategy from a digital marketing perspective. Most importantly, organizations should manage their brand communities well, for example, by prompting members' engagement or improving their satisfaction, if higher-level CBE is desired.

Brand communities on SNS are the most up-to-date, collaborative customer relationship management systems. They can establish and manage strong relationships between organizations and users through creating positive experiences concerning the organization's brands, products, and services. Moreover, brand communities on SNS are able to extract the greatest value from customers over the lifetime of the relationship [1], and to turn the organization's social media connections into loyal customers [8].

Consumers form meaningful connections with a specific brand by annotating, transforming, and recirculating various types of social media content. Once organizations establish their own brand communities, they have a chance to facilitate dialogue and collaborative experiences that their consumers will appreciate [1]. Hence, it is helpful for organizations to establish their own branded social network groups or pages on social media networking sites [4][5].

This study's goals were focused not only on consumers' engagement with specific brands, but also on their engagement in specific brand communities. The relationships between consumers' community engagement and brand engagement were further explored and are explained in the following sections.

2.2. Perceived interactivity

Brand communities on SNS are popular environments for people with common interests to

interact with one another by exchanging information, ideas, or comments. Social media have shifted organizations' influence from traditional consumers to social media users, who may not have an actual purchase experience or a clear interest in a brand. Therefore, for the sake of internet marketing, organizations should use brand communities on SNS to interact with social media users, whether or not they are community members.

The concept of perceived interactivity was first proposed for content analysis of e-mail messages [29]; interactivity was defined based on the dimensions of efficacy and perceived interactivity. Wu [30] used these two dimensions to investigate perceived interactivity by renaming them "internal-based efficacy" and "externally based system efficacy." "Internal-based efficacy" refers to "perceived control," whereas "externally based system efficacy" represents "perceived responsiveness." After McMillan and Hwang [14] and Liu [31] identified a third dimension of "communication" to measure the degree of two-way interaction, many studies used these three dimensions as the core constructs of perceived website interactivity [14][32][33][34][35][36][15][6]. Perceived interactivity is now treated in the literature as users' psychological state during their interactions with a website [33].

With the emergence of social media, the evidence that our understandings of the effects of perceived interactivity on SNS must be verified has increased. For example, the degree of interaction in virtual communities was proven to influence users' commitment to a community [37]. Peer communication and socialization via social media do not only influence community members' product attitudes directly, but also their purchase intentions indirectly [38]. In the current study, perceived interactivity was investigated in the context of brand communities on SNS. It is believed that the level of such perceived interactivity in social media use is different from what is experienced on websites. Thus, perceived interactivity was adopted, and defined as the users' perception of communication, responsiveness, and control in the brand community on SNS.

The website has become the most highly used interactive marketing tool [39]. Most marketers and website designers always try to promote the interactive capabilities of their websites. In terms of pinpointing the importance of brand interactivity, some researchers have demonstrated that following a brand's Facebook updates can lead to positive brand evaluations [40]. What social media users see on SNS directly affects their impression of the brand, their loyalty, and their intention to purchase. As the significant effects of website interactivity on users' thoughts, emotions, and

behaviors have been revealed [41], it is now necessary to examine the influence of brand communities' interactivity on SNS.

2.3. Perceived interactivity and community engagement

The level of interactivity in a virtual community has been found to enhance consumers' engagement [3] and increase their intention to engage in collective actions such as co-shopping [37]. As most consumer engagement takes place on SNS [6], most social media users are passive consumers, rather than being actively engaged. Hence, organizations should seek to increase consumer engagement. For example, providing personal information is more effective in driving higher levels of consumer engagement than providing impersonal information. In general, community engagement amplifies the strength of relationships between consumers and brand communities [5]. We expect that when community members perceive a high degree of interactivity, they will be more likely to participate in a brand community on an SNS that has a high level of community engagement. This observation leads to the following hypothesis

Hypothesis 1: Perceived interactivity is positively related to community engagement.

2.4. Perceived interactivity and community satisfaction

Numerous studies have indicated that users' perceived website interactivity positively and significantly affects their satisfaction. For instance, Sicilia, Ruiz, and Munuera [17] showed that reciprocal relationships were facilitated by presenting highly interactive website features. Lowry, Romano, Jenkins, and Guthrie [35] used a computer-mediated communication (CMC) interactivity model to prove that interactivity enhances communication quality and process satisfaction in CMC-supported teams. Cui, Wang, and Xu [36] indicated that consumers' perceived interactivity positively affects their attitudes toward websites.

However, the emergence of social media has led to increasing evidence that our understandings of perceived interactivity on SNS must be updated. For example, the level of interaction in virtual communities has been proven to influence consumers' commitment to such communities [37]. Wang, Yu, and Wei [38] demonstrated that peer communication and socialization on social media not only influence community members' product attitudes directly, but also affect their purchase intentions indirectly.

Moreover, social media interaction, which is measured by the quantities of various social media used, has been shown to positively affect satisfaction [16].

In terms of pinpointing the importance of brand interactivity, some researchers have demonstrated that following a brand's Facebook updates can lead to positive brand evaluations [40]. Indeed, it is more absorbing for community members to share information and experiences through social media pages with higher interactivity. By offering increased interactivity, brand communities are more likely to encourage community members to browse or share their experiences. Consequently, the users will perceive greater satisfaction, as perceived interactivity leads to a positive attitude toward the brand community and enhances community satisfaction. This observation leads to the following hypothesis.

Hypothesis 2: Perceived interactivity is positively related to community satisfaction.

2.5. Community engagement

Guthrie et al. [42] defined engagement as a psychological state that goes beyond task fulfillment and is characterized by involvement, expenditure of effort, the full use of cognitive capability, and being energized and active. When people are engaged in an activity, they are engaged in the process of that activity.

This state of engagement can be activated and motivated by using cognitive strategies to expedite comprehension [11]. The effects of such engagement have been explored in the literature. For instance, Mollen and Wilson [11] showed how online engagement positively affects users' attitudes and behaviors. Consumers are more willing to interact with businesses online if the outcomes, such as coupons or specific information, benefit them [1]. Higher levels of brand-related consumer engagement commonly lead to greater positive effects [5] and successful outcomes for social media activities [6], such as community satisfaction. Based on the foregoing reasoning, the study proposes the following hypothesis.

Hypothesis 3: Community engagement is positively related to community satisfaction.

In general, the mission of industry marketing is to promote CBE, i.e., find ways to keep consumers engaged with a brand. Managing a brand community on SNS, such as Facebook pages, is just one CBE

strategy. That is to say, when social media users view a brand's Facebook page, the brand has the opportunity to engage their attention and ultimately to transform them into loyal consumers. Hence, understanding the effect of social media users' community engagement on CBE has recently become a critical issue.

As Baird and Parasnis [1] explained, engaging with a company via social media often leads to a feeling of connectedness. This emotion is similar to a sense of membership, and is an important determinant of a user's willingness to become active in a brand community [43]. Specifically, social media users with higher levels of engagement usually demonstrate a stronger sense of membership, which helps encourage the development of relationships not only between consumers and brand communities, but also between consumers and brands [44]. Hence, the study proposes the following hypothesis.

Hypothesis 4: Community engagement is positively related to consumer brand engagement.

2.6. Community satisfaction and consumer brand engagement

As brand communities on SNS can establish and manage strong relationships between organizations and users through creating positive experiences concerning the organization's brands, products, and services. Brand communities on SNS are able to extract the greatest value from customers over the lifetime of the relationship [1], and to turn the organization's social media connections into loyal customers [4][5][8], organizations should manage their brand communities well by improving their satisfaction, if higher-level CBE is desired. We expect that when community members perceive a high degree of satisfaction, they will be more likely to have a high level of CBE. This observation leads to the following hypothesis.

Hypothesis 5: Community satisfaction is positively related to consumer brand engagement.

The study examined the effects of perceived interactivity on both community engagement and community satisfaction. In addition to measuring the direct effects of community engagement and community satisfaction on CBE, the study assessed the indirect effect of community engagement on CBE via community satisfaction. The research model is summarized and illustrated in Figure 1.

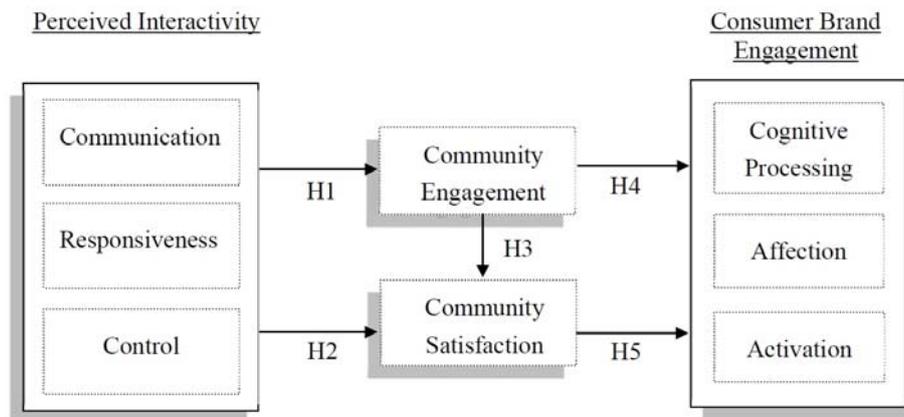


Figure 1. Research model

3. Research Design

Social media platforms offer a convenient and effective way for community members to share their experiences. There are several reasons for consumers to stay up to date with specific brand communities on social media. Triggering activities may include following the status of information, contributing to relevant avenues or posts, searching for new ideas and support, or evaluating options and making decisions. However, successful social media marketing practices for companies should take responsibility for transforming consumer community engagement into CBE. To identify the antecedents of CBE, it is necessary to test our conceptual model in advance.

3.1. Subjects

Approximately 350 current followers of Taiwanese smartphone brands' Facebook pages filled out an online questionnaire. They were asked to choose the most impressive target community. These subjects

were social media users who had experience not only browsing posts, but also performing activities such as posting their thoughts, feelings, or related news to specific smartphone brands' Facebook pages. In addition, the subjects were familiar with responding to others by texting, sharing photos and videos, or posting links. The subjects were members of the smartphone brands' communities.

3.2. Procedure

To investigate the effects of social media users' perceived interactivity in terms of sharing experiences between community members, an online questionnaire was created for social media users, who participated via smartphone brands' Facebook pages. The participants were informed that they were involved in a research project, but were blind to the research hypotheses.

This questionnaire survey assessed the respondents' perceived interactivity, community engagement, community satisfaction, and CBE when using social media to interact with other members on a specific

Table 1. AVE values and correlations between Variables

	AVE	1	2	3	4	5	6	7	8
1. Communication	.673	.820							
2. Responsiveness	.641	.671**	.800						
3. Control	.509	.730**	.763**	.713					
4. Community engagement	.691	.450**	.580**	.466**	.831				
5. Community satisfaction	.782	.604**	.678**	.621**	.606**	.884			
6. Cognitive processing	.705	.403**	.486**	.485**	.389**	.598**	.839		
7. Affection	.730	.405**	.542**	.529**	.444**	.708**	.626**	.854	
8. Activation	.745	.343**	.418**	.422**	.373**	.505**	.660**	.628**	.863

Note. *p<.05. **p<.01.

smartphone brand's Facebook page. Although the respondents may have used several smartphones and followed different brand communities, they were asked to choose one community on a target brand's Facebook page when filling out the online questionnaire. The research model shown in Figure 1 was tested using the collected survey data.

3.3. Measurement

The dependent variable in this study is the consumers' level of brand engagement. The independent variables are perceived interactivity, community engagement, and community satisfaction. The variables were measured on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The measurement of each construct is further described as follows.

Consumer brand engagement. The CBE scale was developed by Hollebeek, Glynn, and Brodie [21], and has been widely used in recent studies to measure the degree of consumers' engagement with brands. The CBE scale includes three dimensions, namely cognitive processing, affection, and activation, and has been confirmed as a valid, reliable, and stable measurement instrument [21]. The Cronbach's α values for cognitive processing (three items), affection (four items), and activation (three items) were .791, .875, and .829, respectively.

Perceived interactivity. McMillan and Hwang's [14] scale for measuring perceived interactivity identified three aspects, namely communication, control, and responsiveness. Many researchers have applied this scale to examine website interactivity. The scale shows a high level of reliability and generalizability [34][35][6]. Hence, we adopted this scale to measure the participants' perceived interactivity with a specific brand community on SNS, with modifications. The Cronbach's α values for communication (six items), responsiveness (six items), and control (nine items) were .878, .860, and .838, respectively.

Community engagement. Algesheimer, Dholakia, and Herrmann [44] define community engagement as a product of users' intrinsic motivations to interact and cooperate with others in a community. These researchers developed a scale to measure users' community engagement. Due to its high level of reliability and validity [5], we adopted this scale in the current study. The Cronbach's α value for this four-item measure was .889.

Community satisfaction. Dagger and O'Brien [45] developed a scale to assess relationship quality as perceived by users, which involved summarizing previous measurements of satisfaction (five items), trust (five items), and commitment (seven items).

Referencing Dagger and O'Brien's scale, five items were adapted to measure brand community satisfaction. The Cronbach's α value for this measure was .930.

4. Results

Of the 350 followers of smartphone brands' Facebook pages, 328 completed the online questionnaire without missing data, giving a response rate of 93.7%. The correlations between the variables were tested using Pearson's correlation coefficient. As shown in Table 1, all of the variables were positively interrelated. In addition, perceived interactivity and CBE were treated as second-order constructs in the research model, and each construct had its own first-order dimensions. Three dimensions of perceived interactivity, namely communication, responsiveness, and control, were highly correlated ($r > .6$). Cognitive processing was highly related to both affection ($r = .626$) and activation ($r > .660$), while the construct of CBE consisted of these three dimensions.

A discriminant validity test is conducted by calculating the square roots of the average variance extracted (AVE), which measure the average variance shared between a construct and its measurement items, and by calculating the correlations between constructs. A matrix can then be constructed with the square root of AVE on the diagonal and the correlations between the constructs on the off-diagonal. As shown in Table 1, the diagonal elements were all greater than the off-diagonal elements in the corresponding rows and columns. Thus, the discriminant validity of the constructs was adequate.

As we expected, both perceived interactivity and CBE showed high composite reliability and internal consistency. However, correlation does not imply causation. The causal relationships between variables were examined using structural equation modeling.

Using the 328 records, the proposed model was assessed with maximum likelihood estimation using AMOS. All of the calculations were based on the covariance matrix of the variables. Five common model-fit measures were used to assess the proposed model's overall goodness of fit, the ratio of χ^2 to degrees of freedom (CMIN/DF), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). The results indicated that the proposed model (CMIN/DF=2.026; GFI=.831, AGFI=.804, CFI=.923, RMSEA=.056) had a good fit, because all of the criteria were better than the recommended values (CMIN/DF < 3; GFI > .80, AGFI > .80, CFI > .90, RMSEA < .06). Thus, we used the model to examine our hypotheses.

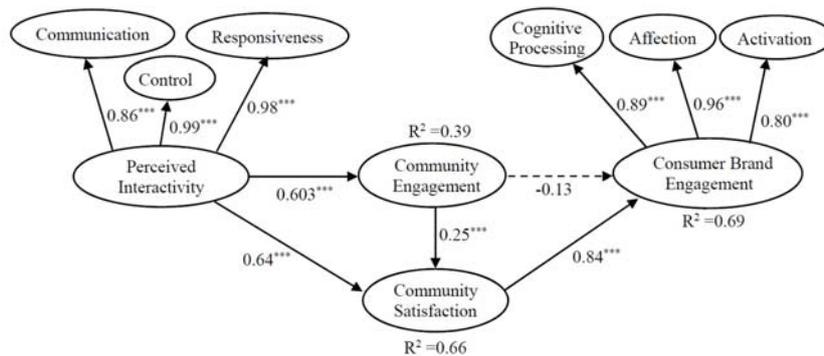


Figure 2. Standardized Path Coefficients of the Proposed Model (Note. * $p < .05$. ** $p < .01$. *** $p < .001$.)

As shown in Figure 2, the standardized path coefficients running from perceived interactivity to both community engagement and community satisfaction were statistically significant, thus Hypotheses 1 and 2 were supported. Furthermore, the standardized path coefficient running from community engagement to community satisfaction was significant, confirming Hypothesis 3. In addition, as the path from community satisfaction to CBE was significant, Hypothesis 5 was supported. Unexpectedly, however, the standardized path coefficient from community engagement to CBE was not significant; thus, Hypothesis 4 was not supported.

Two second-order constructs were operationalized in the structural model. Communication, responsiveness, and control were treated as reflective factors to create the second-order construct “perceived interactivity,” while the other second-order construct “CBE” comprised cognitive processing, affection, and activation as reflective indicators.

The R^2 value indicated that 69% of the variance in CBE was explained by these variables, including community engagement, community satisfaction, and perceived interactivity, while 66% of the variance in community satisfaction was explained by community engagement and perceived interactivity. These results show that community satisfaction had a direct effect on CBE, whereas community engagement had no direct effect on CBE, but an indirect effect through its direct effect on community satisfaction. Similarly, perceived interactivity influenced CBE indirectly through direct effects on community engagement and community satisfaction.

5. Conclusion

This study used the Facebook pages of smartphone brands to measure social media users’ perceptions of interactivity to assess their effects on community engagement and community satisfaction. The concepts

of community engagement and brand engagement were introduced and distinguished, and the investigation included an empirical examination of the effects of community engagement and community satisfaction on CBE.

Overall, perceived interactivity showed positive effects on community engagement and community satisfaction, and community engagement had a positive effect on community satisfaction, which in turn affected CBE directly. Based on these findings, we can confirm that smartphone brands can increase the community satisfaction of social media users not only by encouraging their community engagement but also by creating greater perceived interactivity for social media users in the context of virtual communities on SNS when higher CBE is needed. By providing quick feedback, responses, and reaction in brand communities, smartphone brands are able to create greater perceived interactivity among consumers. Thus, quick and accurate responses by smartphone brands on their Facebook pages are an effective way to increase community satisfaction among social media users through promoting community engagement.

Surprisingly, consumer community engagement was not found to have a direct effect on CBE. For social media users in the context of virtual communities on SNS, the difference in community engagement and CBE was clear, but the relationship is not supported with evidence. That is, the community engagement of social media users did not necessarily lead to brand engagement. A plausible explanation for this is that consumers are not restricted to sharing positive experiences in their brand communities on SNS. Their engagement with the brand and other consumers is brutally honest and may lead to negative perceptions of the brand. Furthermore, when people become engaged with brand communities, they eagerly interact with posts, news, and comments. The content rarely remains brand-related, but it may include community-related chores, gossip, or other matters.

Thus, if people engage more with the community, they do not become more knowledgeable about the specific brand. Additionally, social media users may be active and engage in a new brand community just to acquire information of interest, and they may have no deep engagement with the specific brand. However, if their high engagement with the brand community brings great satisfaction, they become loyal consumers.

The research is theoretically significant because it bridges the research gap between community engagement and CBE by investigating community satisfaction in the context of managing brand communities on social media. Companies expend a great deal of effort managing their social media accounts to create impactful outcomes in the form of brand community engagement and company profit. Successful social media marketing practices should thus take responsibility for transforming consumer community engagement into brand engagement. Hence, an important practical implication of our findings is the ability to increase CBE directly by raising community satisfaction among social media users on Facebook pages through encouraging community engagement. For example, marketing strategies could be adapted so that consumers can participate in the creation of brand-related content and share brand values and stories with peers online. Smartphone brands need to pay closer attention to the posts in their brand communities on SNS and keep them focused on brand-related topics.

In future studies, comparative scenarios involving multiple cultures or countries should be conducted to better understand social media users' natural behaviors and how they engage with brand communities. Besides, indicators of community phenomena, such as the numbers of Facebook posts and comments, are valuable measures of SNC mini-track. Empirically examining the relationship between human behavior and such indicators will make a new practical contribution. To better understand the influence of Facebook posts and comments, measuring the total number of community posts and comments is not enough. We need to determine which cues that elicit such effects in advance. However, it is still difficult to identify "potential" or "effective" Facebook posts and comments. We have left such an investigation to future research, because it would have taken too much time for us to both collect survey data and measure the number of "potentially effective" Facebook posts and comments.

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