



Management Science and Engineering
Vol. 14, No. 1, 2020, pp. 14-24
DOI:10.3968/11611

ISSN 1913-0341 [Print]
ISSN 1913-035X [Online]
www.cscanada.net
www.cscanada.org

Research on the Impact of Customer-to-customer Interaction on Willingness to Purchase New Products in Virtual Brand Communities: The Mediating Role of Brand Emotional Value Experience

JIANG Baichen^[a]; Bekniyazova Nazerke^{[a],*}

^[a]School of economics and management, south China agricultural university, Guang Zhou, China.

*Corresponding author.

Received 10 March 2020; accepted 20 May 2020

Published online 26 June 2020

Jiang, B. C., & Nazerke, B. (2020). Research on the Impact of Customer-to-customer Interaction on Willingness to Purchase New Products in Virtual Brand Communities: The Mediating Role of Brand Emotional Value Experience. *Management Science and Engineering*, 14(1), 14-24. Available from: URL: <http://www.cscanada.net/index.php/mse/article/view/11611> DOI: <http://dx.doi.org/10.3968/11611>

Abstract

From the perspective of customer perceived value theory, this paper uses questionnaires to take 457 data from online platforms such as Instagram and Facebook as valid samples, and discusses the mediating effect of brand emotional value experience on the relationship between customer-to-customer interaction and customers' willingness to purchase new products and the moderating effect of community trust on this relationship. The results show that: (1) customer-to-customer has an obvious positive impact on their willingness to purchase new products; (2) brand emotional value experience plays a significant part in mediating the customer-to-customer interaction and their willingness to purchase new products; (3) community trust positively moderates the positive impact of customer-to-customer interaction on brand emotional value experience, thus influencing customers' willingness to purchase new products. Therefore, the research results help to enrich the research achievements of virtual brand communities, clear the effectiveness of customer-to-customer interaction on the customers' willingness to purchase new products, further open the "black box" in which customer-to-customer interaction affects customers' willingness to purchase new products, and define the boundary conditions for customer-to-customer interaction to influence customers' willingness to purchase new products. In fact, the research results also provide important reference for enterprises to effectively manage virtual brand communities and promote positive output of brand communities.

Key words: Virtual brand community; Customer-to-customer interaction; Willingness to purchase new product; Emotional value experience; Community trust

1. PROBLEM INTRODUCTION

VBC (Virtual Brand Community) is defined as a specialized, non-geographically bound community, based on a structured set of social relationships among admirers of a brand. It is an Internet platform for enterprises to disseminate product information, provide service support and educate customers (Muniz & O'Guinn, 2001). Now virtual brand communities are increasingly being used by users and organizations as tools for creating value. And in order to build long-term relationships with customers, many companies choose to create or engage with brand communities that are particularly relevant to their online strategy, both in terms of how they interact with customers and how customers interact with each other. The increasing popularity of virtual brand communities provides a social platform for consumers, who are no longer just passive objects, but active participants, and jointly create their own products and experiences (Martínez-López et al., 2016). The Internet allows consumers to share their experiences and passions for their favorite brands without meeting in person, and to experience unprecedented social and interactive functions. Online brand communities ensure to organize and strengthen brand awareness (Baldus et al., 2015), enhance trust (Nadeem et al., 2015), generate positive word of mouth (Kucukemiroglu & Kara, 2015), improve customer loyalty to the brand (Zheng et al., 2016), achieve competitive advantage, and market the products of enterprises (Hajli et al., 2017; Wu et al., 2015). Therefore, online communities are now attractive tools for enterprises. Despite this, the previous various

brand communities faced some difficulties. First, some community members reject brands through negative comments, which may damage the brand's image and reputation and even promote the competitive advantage of competitors (Patterson, 2012). Second, most brand communities do not bring the economic benefits and returns expected by enterprises. There are some problems such as low online user participation, lack of valuable contributions and serious loss of user resources. Third, compared with the active behaviors of customers (such as forwarding, writing comments, giving feedback, etc.), the passive behaviors of customers (such as reading reviews and ratings) account for the majority in brand communities. A study found that 90% of VBC members are passive readers, and most of them are one-time participants, which cannot maintain their membership (Wang et al., 2015). Therefore, how to effectively stimulate the active behavior of customers has become a difficult problem in brand community management.

Over the past decade, the brand community has been a special form of consumer community because of its close association with society (Muniz & O'Guinn, 2001). People are increasingly interested in the study of virtual brand community, and it has become an important subject of current brand research (Zhu et al., 2016). Existing research in this field focuses either on brand-related results that the virtual brand community participates in, or on consumers' interactions and behaviors in the online environment they operate in (Dessart et al., 2014). However, the empirical exploration in this field is still incomplete. Interaction is an important content of virtual brand community and an important means for customers to create value and obtain value. The research of Shen Guanglong et al. (2016) has confirmed that the customer-to-customer interaction will have a positive impact on customer participation in value co-creation (Shen Guanglong et al., 2016). However, there are few researches on the customer-to-customer interaction in the virtual environment, and the process of customers from interacting with other customers to the final interaction result in the virtual community is still a "black box". Given that many customers spend time with the online brand community, it is worthwhile to explore the path of customer involvement in the brand community to organizational outcomes (Baldus et al., 2015; Brodie, 2013). Therefore, the first problem that this research focuses on is the influence of customer-to-customer interaction on customers' willingness to purchase new products.

Judging from the existing research literature on the interaction in the virtual brand community, the research on the customer-to-customer interaction in the virtual brand community is insufficient at present. Most of the existing studies have discussed the impact of interactions in online brand communities on relevant variables such as customer relationship, customer behavior and customer perception (Luo et al., 2016). However, scholars often ignored the

influence of brand emotional value experience in virtual communities. Customer emotional value experience is interactive and relative, and customer emotional experience value is an important result obtained by customers in participating in online community activities (Nambisan & Baron, 2010). It is conducive to improving customers' attitude towards products and enterprises and enhancing their loyalty to the brand (Bruhn et al., 2014). Therefore, the second problem that this research focuses on is to open the "black box" in which the customer-to-customer interaction influences customers' willingness to purchase new products from the perspective of emotional value experience.

In addition, earlier studies emphasized that it is necessary to study the characteristics of a brand community and its impact on customer participation, as these characteristics reflect the overall impression of customers on a brand community (Zheng et al., 2016). And some studies have clarified the characteristics of online brand communities and their impact on satisfaction, commitment and brand awareness (Baldus et al., 2015). The customer-to-customer interaction in virtual brand community is essentially a kind of social exchange behavior, and the formation, development and sustainability of such social exchange behavior need to rely on trust, which is not only the trust of the two parties, but also the trust of the community. Especially in virtual brand communities, the nature of the interaction process actually is not specific, which is characterized by a high degree of uncertainty about the ability, behavior and kindness of other brand community members and the brand itself. At this point, community trust is particularly critical. Therefore, the third problem that this research focuses on is to introduce the two moderating variables of high and community trust, and try to explore the influence of community trust on customer-to-customer interaction and their willingness to purchase new products from the perspective of relationship characteristics.

2. THEORY AND HYPOTHESIS

2.1 The Influence of Customer-To-Customer Interaction on Willingness to Purchase New Products

In virtual brand communities, community members have intrinsic motivation to interact and cooperate with other community members (KUO et al., 2013). Interaction is considered to be the key function to realize the existence of brand community. Brand community grows and develops through interaction, without which it cannot survive. The more communication and interaction, the stronger the community (Bruhn et al., 2014). In virtual communities, customer-to-customer interaction refers to the communication and communication between individuals (Adjei et al., 2010), which is an important part

of virtual brand communities (Zhu et al., 2012) and an important means for customers to create and obtain value. There are currently different views on the division of the dimensions of customer-to-customer interaction in virtual communities. Adjei et al. (2010) set customer-to-customer interaction as a variable with a single dimension (Adjei et al., 2010). Massey et al. argued that customer-to-customer interaction in virtual environment should be divided into product interaction and interpersonal interaction (Massey & Levy, 1999). Nambisan et al. divided it into product interaction, interpersonal interaction and cognitive interaction (Nambisan & Baron, 2010). At the same time, the customer-to-customer interaction in virtual brand communities will also have an impact on customer attitude, product innovation and behavior.

There are several explanations for the impact of customer-to-customer on willingness to purchase new products. First, the community is considered as a channel for the organization to conduct additional sales. Organizations can use conversations that occur within the community as opportunities to recommend new products or services to the other community members, so as to speed up the acceptance of new products by community members. This approach is usually considered as a “Word of Mouth Marketing” (Berger & Messerschmidt, 2009). Second, existing studies have found that customer-to-customer interaction in virtual brand communities can reduce the uncertainty of customers on products, thus having a positive impact on customers’ purchasing behavior (Adjei et al., 2010). Third, Nambisan and Baron (2010) mentioned that community members seriously discuss product issues to increase their understanding or knowledge of the product. This kind of in-depth discussion increases the possibility of solving related problems (Nambisan & Baron, 2010). Moreover, this sense of participation increases the degree of customers’ recognition of a brand, and the more likely it is that their behavior will benefit the company (Marzocchi et al., 2013). These behaviors include the willingness to promote the brand and participate in the process of value creation (Johnson et al., 2013), which can also be translated into the willingness to purchase more products and purchase the company’s products more frequently (Ho, 2015). Fourth, interaction can bring members of a brand community closer together. When there is a close relationship between members of the brand community, members will not choose products only based on product functions or personal perceptions of the brand. The influence of the brand community increases the emotional connection between members and the brand, which becomes the key for them to choose the brand, so as to improve their purchasing behavior for the brand products (KUO et al., 2013). Therefore, this research assumes that:

H1: The customer-to-customer interaction has a significant positive effect on customers’ willingness to purchase new products

2.2 The Mediating Effect of Brand Emotional Value Experience

According to the customer perceived value theory, the factor that really causes consumers to purchase products or services is consumer perceived value, which is a trade-off perception of products or services. If consumers feel that the benefits of a product or service far outweigh the losses, then consumers will show their willingness to purchase (Li Linghui, Cao Shuyan, 2017). Perceived value can be composed of four factors: quality value, price value, emotional value and social value. Among them, emotional value refers to the affective or emotional promotion that products can bring to consumers, such as pleasure, satisfaction, etc. (Soutar, 2001). In this study, the experiential benefits of the brand community are characterized by the emotional experience value of the brand community. This is because the interaction within a brand community can emotionally and intellectually stimulate its members. For example, when a member discovers a solution to a complex problem and presents it to the brand community, both the sender and the receiver experience technological enjoyment (Nambisan & Baron, 2010). Previous studies on exchange relationships have shown that factors of personal and emotional interest are becoming increasingly important (Bruhn et al., 2014; Hajli et al., 2017). And this emotional value experience allows customers to fully access the company brand, understand the characteristics of products under the company brand. At the same time, because the emotional value reduces the customer’s perception of the product’s uncertainty, the perceived risk is reduced, which has a positive impact on improving the customer’s willingness to purchase.

The customer’s emotional value experience, however, will be influenced by the process and result of customer-to-customer interaction in the online brand community. First of all, customers in the brand community actively invest time and energy to discuss brand-related topics with other customers out of their internal intention. This process of customer-to-customer interaction and experience sharing in the online brand community can trigger customers’ sense of happiness and generate pleasant experience. Second, by communicating and discussing brand-related topics with other customers, customers in the online brand community can acquire knowledge about the use of products (Bruhn et al., 2014), so that their cognition can be improved and pleasant experience can be triggered. Third, through continuous communication with other like-minded customers, customers in the brand community can easily form a resonance of views and understandings, which contributes to the customer-to-customer interaction in the online brand community to generate pleasant experience for customers (Bruhn et al., 2014). Finally, interpersonal interaction also enables customers to perceive that other customers truly

understand their special problems, which promotes mutual understanding and social identification (Santos et al., 2016). Therefore, this research assumes that:

H2: Brand emotional value experience plays an mediating role between customer-to-customer interaction and willingness to purchase new products

2.3 The moderating effect of community trust on customer-to-customer interaction and emotional value experience

Social exchange theory treats trust as a mechanism that becomes more important in an environment where perceived risk is more prevalent (Mahrous & Abdelmaaboud, 2017). In the Internet, especially in such an environment as virtual brand community, the nature of the interaction process is not specific, which is characterized by a high degree of uncertainty about the ability, behavior and kindness of other brand community members and brands themselves. Interactions occur between a large number of anonymous strangers, at different times and places (Kunz & Seshadri, 2015). In such a virtual space as the Internet, little information about oneself is usually provided, which leaves a large space for opportunistic behaviors (for example, incorrect or incomplete personal information, bad or wrong forum posts, etc.)(Santos et al., 2016). Therefore, exchanging resources such as information, ideas and solutions to problems in the brand community is a risky behavior.

Trust can reduce perceived risks caused by interaction between two or more parties, reduce opportunistic behaviors and improve the quality of interaction (Martínez-López et al., 2016). In other words, trust is a subjective norm of community that aims to reduce uncertainty and create an open, socially acceptable and valuable communication mindset that meets the quality requirements of interactive partners. Thus, an exchange partner can trust the cooperative intentions and honesty of its exchange partner. Given the high level of perceived risk and uncertainty, trust is seen as a fundamental basis for building beneficial interactions. Therefore, trust must be regarded as a key component of customer interaction in a virtual brand community, and can be divided into three categories: brand trust, community trust and customer-to-customer trust. Among them, community trust refers to the degree of customers' trust in the community. This research believes that brand community trust can reduce or even eliminate the uncertainty of both parties, so that both parties can fully interact, so as to get better brand emotional value experience. Therefore, this research assumes that:

H3: Brand community trust can positively regulate the relationship between customer-to-customer interaction and customer's emotional value experience.

To sum up, the theoretical framework of this research is shown in Figure 1:

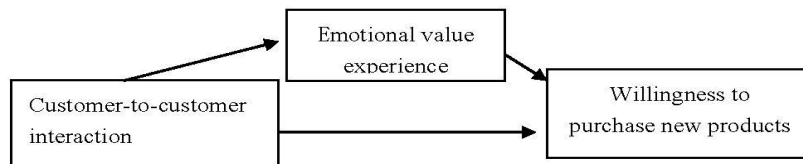


Figure 1
Research framework

3. RESEARCH METHOD

3.1 Research Sample and Procedure

In this study, questionnaires were used to obtain research data. As the research objects are mainly based on consumers of virtual brand communities in Kazakhstan, this study will collect research data by sending online questionnaires to consumers by selecting virtual brand communities from Instagram, Facebook, etc. Specifically, this study uses a step-by-step data collection procedure to alleviate concerns about common method biases. The first phase of the data collection process involves direct sampling of virtual brand community participants and the use of electronic questionnaires to post online questionnaires on virtual brand websites, giving them two weeks to complete the survey. A week after the first post, a second post was sent as a reminder. Surveys assigned to the sample included customer-to-customer interactions, brand emotional value experiences, community trust, and willingness to purchase new products. Furthermore,

the study set up the cash bonus in order to encourage community members to actively participate in the completion of the questionnaire. As long as community members fill out the questionnaire, they can participate in the draw. In this study, a total of 1000 questionnaires were issued, and 510 questionnaires were recovered. After eliminating the large number of missing questionnaires and 53 identical invalid questionnaires, 457 valid questionnaires were obtained. Among the 457 valid samples of surveyed community members, 51.4% were male and 48.6% were female. In terms of age, 52.3% were aged 25 and below, 40.7% were aged 26-35, and 7.0% were aged over 35. In terms of the duration of entering the virtual brand community, community members with less than one year accounted for 15.3%, community members with one to two years accounted for 39.4%, community members with two to three years accounted for 35.0%, and community members with more than three years accounted for 10.3%.

3.2 Variable Measurement

In this study, the variables were all measured using the Vineland Social Maturity Scale, and the 7-point Likert scale was used for scoring, ranging from “1=completely disagree” to “7=completely agree”. Since the original scales were all in English, this study translated the scales based on the existing Chinese studies, and also revised the text according to the specific situation of this study, finally forming a deterministic scale.

Customer-to-customer interaction: customer-to-customer interaction refers to the interaction between peer customers through frequent interpersonal communication, two-way communication and mutual assistance, which reflects the degree to which customers in online brand communities invest resources to communicate with other customers and exchange consumption feelings, information and knowledge. In this paper, relevant scales proposed by Wu and Fang (2010) (Wu & Fang, 2010) were adopted for measurement, such as “I usually receive rapid response/feedback from other members on my ideas and contributions”. In addition, a 7-point Likert scale was used in this study, ranging from “completely disagree” to “completely agree”. The higher the score, the higher the customer-to-customer interaction. And in this study, the Cronbach’s α coefficient of this scale is 0.709.

Brand emotional value experience: emotional value experience refers to the promotion of consumers’ emotions or feelings brought by the brand, such as pleasure, satisfaction, etc. (Soutar, 2001). Therefore, this study adapted the scale proposed by Wang (2004), combined the PERVAL scale proposed by Sweeney and Soutar (2001) (Soutar, 2001), and designed the scale of brand emotional value experience, such as “participating in brand community makes me feel the warmth of a big family”. In addition, a 7-point Likert scale was used in this study, ranging from “completely disagree” to “completely agree”. The higher the score, the higher the customer’s brand emotional value experience. And in this study, the Cronbach’s α coefficient of this scale is 0.742.

Community trust: community trust refers to the degree of customers’ trust in the community. This study adopts the measurement method of community trust proposed by Wang et al. (2013) (Wang et al., 2013), and uses three items to measure community trust, such as “I think the virtual brand community is convincing”. In addition, a 7-point Likert scale was used in this study, ranging from “completely disagree” to “completely agree”. The higher the score, the higher the level of trust in the community. And in this study, the Cronbach’s α coefficient of this scale is 0.801.

Willingness to purchase new products: regarding the meaning of willingness to purchase new products, Fishbein(1975) identified the purchase intention as the subjective probability of consumers to purchase a

certain product or service (Kroenung & Eckhardt, 2015). Therefore, the scale of willingness to purchase new products in this study is derived from the study of Lin et al. (2011) (Lin et al., 2011), such as “if the community launches new products, I am willing to buy them”. In addition, a 7-point Likert scale was used in this study, ranging from “completely disagree” to “completely agree”. The higher the score, the higher the willingness of customers to buy new products. And in this study, the Cronbach’s α coefficient of this scale is 0.788.

Control variable: relevant research results in the field of virtual networks show that gender differences play a crucial role in the use of the Internet due to the differences in decision-making between men and women (Verhagen et al., 2011). Lian and Yen (2014) believe that there are differences in network and social skills among people of different ages, and young Internet users may be more skillful and comfortable than older users (Lian & Yen, 2014). At the same time, the length of time to join the brand community also affects consumers’ buying behavior. Therefore, gender, age and length of time of joining virtual brand community were taken as control variables in this study.

4. RESEARCH RESULTS

4.1 Descriptive Statistics

The mean, standard deviation and correlation coefficients of all variables in this study are shown in table 2. It can be seen that, first of all, Pearson correlation coefficient between variables is within the range of -0.018-0.782, which is lower than the critical level of 0.80, meeting the judgment criteria proposed by Corso (2007), indicating that there is no multivariate linear problem between variables. Second, from the perspective of the mean values of assumed research variables, the mean values of four research variables, such as customer-to-customer interaction, brand emotional value experience, community trust and willingness to purchase new products, were 3.980, 3.772, 4.079 and 4.088 respectively, which were all higher than the median of the 5-point scale: 3. This reflected that to some extent the research participants thought highly of the above variables. Finally, from the correlation of each assumed variable, there is a significant positive correlation between customer-to-customer interaction and customers’ willingness to purchase new products ($r=0.406$, $p<0.01$); customer-to-customer interactions have a significant positive correlation with emotional value experience ($r = 0.611$, $p <0.01$); and emotional value experience has a significant positive correlation with customers’ willingness to purchase new products ($r = 0.283$, $p <0.01$). The above results provide some support for the hypothesis of this study.

Table 2
The mean, standard deviation and correlation coefficients of each variable

Variable	M	SD	1	2	3	4	5	6
Gender	1.486	0.500	1.000					
Age	1.547	0.623	0.060	1.000				
The length of time of joining in the community	2.403	0.868	-0.027	0.009	1.000			
Customer-to-customer interaction	3.980	0.589	0.013	0.000	0.097*	1.000		
Emotional value experience	3.772	0.662	-0.021	-0.030	0.091	0.611**	1.000	
Willingness to purchase new products	4.088	0.456	0.028	0.011	-0.026	0.406**	0.283**	1.000
Community trust	4.079	0.512	0.036	0.071	0.058	0.398**	0.382**	0.469**

Note: * means $p < 0.05$; ** means $p < 0.01$, the same as below.

4.2 Test of Main Effect

In this study, the main effect, mediating effect and moderating effect were tested by multi-level regression analysis in SPSS22.0 data analysis software. Before the hierarchical regression analysis, in addition to the control variables, the variables of customer-to-customer interaction, brand emotional value experience, community trust and willingness to purchase new products were standardized. At the same time, it should be noted that this study did not adopt the “three-step method” proposed by Baron & Kenny (1986) to analyze the mediating effect but tested the mediating effect through Mplus structural equation software to improve the statistical efficacy of mediating effect.

It can be seen from the hierarchical regression results of customer-to-customer interaction on willingness to purchase new products in table 3 that customer-to-customer interaction has a significant positive impact on customers’ willingness to purchase new products ($M2: \beta$ customer-to-customer interaction =0.412, $p < 0.001$, $R^2 = 0.169$). Therefore, hypothesis 1 is valid.

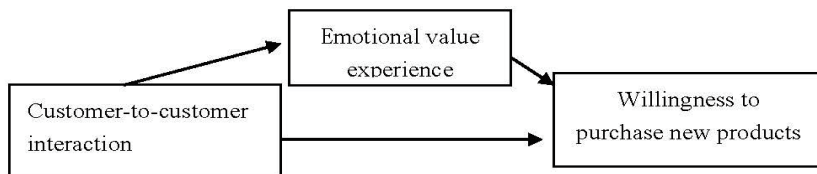
Table 3
Hierarchical regression results--customer-to-customer interaction on willingness to purchase new products

Variable	Willingness to purchase new products	
	M1	M2
Gender	0.027	0.020
Age	0.010	0.011
The length of time of joining in the virtual brand community	-0.026	-0.066
Customer-to-customer interaction		0.412***
F	0.232	23.049***
R2	0.002	0.169
$\Delta R2$	-	0.162

Note: * means $p < 0.05$; ** means $p < 0.01$, *** $p < 0.001$

4.3 Test of Mediating Effect

Mplus structural equation software will be used to test the mediation model in this study. For this study, it is necessary to examine the mediating effect of emotional value experience on customer-to-customer interaction and willingness to purchase new products. According to the research model, the Mplus data model is transformed, and a model for testing the mediation effect is constructed as shown in Figure 2:



Note: The above model has been simplified, and the items of each variable and the connection of the control variable to the willingness to purchase new products are not shown in it.

Figure 2
Model of testing mediating effect using Mplus

Mplus was used to compile the operation command, the operation mode was set as Bootstrap method, and the number of repeated sampling was set to 1000. The results were shown in figure 3 and table 4:

The fitting index of the model is good ($\chi^2 / df = 1.985$, $GFI = 0.910$, $TLI = 0.909$,

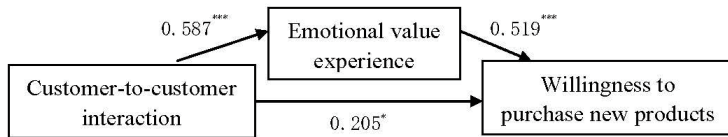
$RMSEA = 0.068$, $SRMR = 0.037$), indicating that the mediation model is acceptable, and the test results are reliable.

The indirect path (customer-to-customer interaction → emotional value experience

→willingness to purchase new products) was significant, and the mediating effect value was 0.304 (Effect=0.304, $p < 0.001$). When the emotional value experience, a mediating variable, was controlled, the direct effect (customer-to-customer interaction →willingness to purchase new products) was still significant, and the direct effect value was 0.205 (Effect=0.205, $p < 0.01$). The

total effect value of customer-to-customer interaction on willingness to purchase new products is the sum of direct effect and indirect effect, i.e. 0.509, in which direct effect path effect accounts for 40.28% and indirect effect path

effect accounts for 50.72%. Therefore, the emotional value experience acts as a partial mediation between customer-to-customer interaction and willingness to purchase new products, and hypothesis 2 is valid.



Note: The above model has been simplified, and the items of each variable and the connection of the control variable to the willingness to purchase new products are not shown in it.

Figure 3
Standardized coefficients of the mediation model

Table 4
Mediating effect value and effect

Independent variable	Category	Mediation path	Effect	S.E.	P value	Effect
Customer-to-customer interaction	Total		0.509	0.096	0.000	100.00%
	Direct effect		0.205	0.107	0.024	40.28%
	Indirect effect	Emotional value experience	0.304	0.065	0.000	59.72%

4.4 Test of Moderating Effect

According to the hierarchical regression results of the moderating effect of community trust in table 5, it can be seen that the interaction terms between community trust and customer-to-customer interaction have a significant positive impact on the emotional value experience. And the results confirmed the validity of hypothesis 3.

Table 5
Hierarchical regression result--test of the moderating effect of community trust

Variable	Emotional value experience		
	M1	M2	M3
Gender	-0.017	-0.031	-0.028
Age	-0.030	-0.040	-0.037
The length of time of joining in the virtual brand community	0.091	0.028	0.032
Customer-to-customer interaction		0.541***	0.334***
Community trust		0.169***	0.114***
Customer-to-customer interaction*Community trust			0.248***
F	1.453	50.335***	59.977***
R2	0.010	0.399	0.402
ΔR2	-	0.389	0.002

Note: * means $p < 0.05$; ** means $p < 0.01$, *** $p < 0.001$

In order to further test whether the interaction terms between community trust and customer-to-customer interaction have the expected impact on the emotional value experience, the positive and negative mean values of the two variables were taken as one standard deviation respectively in this study to describe the impact of customer-to-customer interaction on the emotional value experience under different degrees of community trust, and the interaction effect diagram as shown in figure 4 was drawn. The results show that the positive relationship between customer-to-customer interaction and emotional value experience under the condition of high community trust is stronger than that under the condition of low community trust. Therefore, hypothesis 3 is valid.

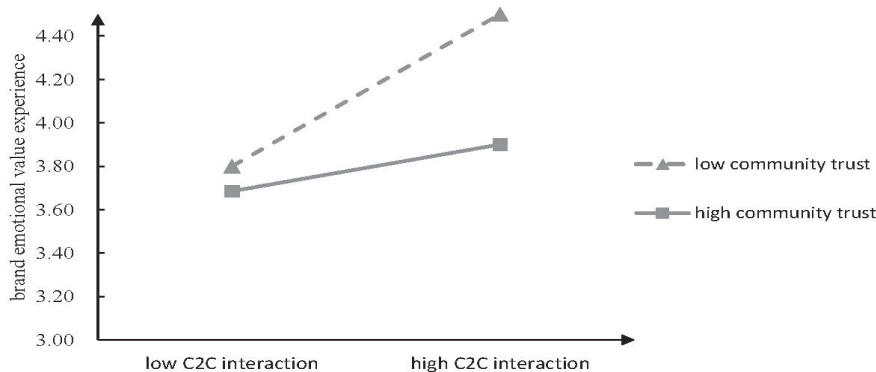


Figure 4
The impact of interaction items between customer-to-customer interaction and community trust on the emotional experience value

5. RESULTS AND DISCUSSION

5.1 Research Results

On the basis of literature review, this study takes customer-to-customer interaction as an independent variable, brand emotional value experience as a mediating variable, community trust as a moderating variable, and willingness to purchase new products as a dependent variable, forming a research framework to systematically explain the effect of customer-to-customer interaction on the willingness to purchase new products. Moreover, three research hypotheses are proposed based on the research framework. And it was found that each research hypothesis was supported by data after the above three research hypotheses were tested based on 457 valid questionnaires from Instagram, Facebook and other online platforms. The summary of the test results of this study is shown in table 6.

Table 6
Summary of empirical research results

Hypothesis	Hypothesis	Support or not
H1	The customer-to-customer interaction has a significant positive effect on customers' willingness to purchase new products.	Support
H2	Brand emotional value experience plays a mediating role between customer-to-customer interaction and willingness to purchase new products.	Support
H3	Community trust positively regulates the relationship between customer-to-customer interaction and emotional value experience.	Support

5.2 Theoretical Significance

The theoretical enlightenment of this study mainly includes three aspects:

First, it helps to enrich the research achievements of the virtual brand community. Existing researches use a variety of theories (e.g., social network analysis, life-cycle model, motivational theory, social identity theory, cognitive evaluation theory, impression management theory, identity theory, etc.) to explore how to attract consumers and how to understand their behavior in the community (Dessart et al., 2014; Martínez-López et al., 2016; Santos et al., 2016), but researches into the virtual brand community have not kept up with the changing settings of the industry. Starting from the customer perceived theory and social exchange theory, this study introduces empirical variables such as brand experience and community trust to explore the influence mechanism and boundary conditions of virtual brand community, which is conducive to enriching the research achievements of virtual brand community.

Second, this study is helpful to clear the effectiveness of customer-to-customer interaction on customers' willingness to purchase new products. Reviewing the existing literature on virtual brand communities,

it is found that existing studies have not been able to effectively answer the question "whether customer-to-customer interaction promotes customers' willingness to purchase new products". Therefore, this study fills some knowledge gaps about online communities and their impact on consumers' purchasing decisions, and clarifies the effectiveness of customer-to-customer interactions on willingness to purchase new products.

Third, this study will help to further open the "black box" in which customer-to-customer

interaction affects customers' willingness to purchase new products, and define the boundary conditions for customer-to-customer interaction to influence customers' willingness to purchase new products. Moreover, from the existing research literature on the interaction in the virtual brand community, it is found that researches on the customer-to-customer interactions in the virtual brand community is insufficient, especially the impact of customer-to-customer interaction on customers' purchasing behavior needs to be further studied. In addition, it can be found in the existing studies that scholars often ignore the influence of brand emotional value experience in virtual communities. Customer emotional value experience is interactive and relative, and customer emotional experience value is an important result obtained by customers in participating in online community activities (Nambisan & Baron, 2010). It is conducive to improving customers' attitude towards products and enterprises and enhancing their loyalty to the brand (Liu Rong, Yu Hongyan, 2017). Therefore, this study opens the "black box" in which customer-to-customer interaction affects customer's willingness to purchase new products from the perspective of emotional value experience. At the same time, this study introduced the moderating variable of high and low community trust, and tried to explore the influence of community trust on customer-to-customer interaction and their willingness to purchase new products from the perspective of relationship characteristics, which is conducive to clarifying the boundary conditions for customer-to-customer interaction to influence customers' willingness to purchase new products.

5.3 Practical Significance

First, enterprises should not only pay attention to the relationship between customers and enterprises, but also manage the relationship between customers and other customers. The results of this study show that the customer-to-customer interactions in the virtual brand community can enhance the brand value experience of customers themselves, thus promoting their willingness to purchase new products. Therefore, enterprise managers need to broaden the scope of customer relationship management and provide specific ways for the management of customer relationship. On the one hand, the manager of the virtual brand community

should pay attention to the reasonable operation of the interactive community among users. Enterprises can initiate diversified topics and encourage users to discuss, and reward users who participate in and make contributions to the interaction of community topics, so as to encourage users of virtual communities to actively participate in the interaction and discussion of various topics in the community. At the same time, for different community sections, enterprises can select users with high participation and contribution in each section, and give these users a certain community status (such as section moderator, etc.), so as to drive and balance the interaction of users in each section through these active users. On the other hand, enterprises can allow members of the brand community to interact with partners who are willing to be trusted, competent and kind because research has shown that brand community trust improves the quality of customer-to-customer interaction in a virtual brand community. Therefore, enterprises themselves do not necessarily need to play an active role in the brand community to increase the purchase rate of new products. Enterprises can assign personnel as intermediary observers and quality supervisors to coordinate the interaction between high-quality customers in the virtual brand community, so as to enhance the experiential benefits and promote the sales of new products.

Second, enterprises should attach great importance to the experience of brand community members. According to the customer perceived value theory, the factor that really causes consumers to purchase products or services is consumer perceived value, which is a trade-off perception of products or services by consumers. If consumers feel that the benefits of a product or service far outweigh the losses, then consumers will show their willingness to purchase. Moreover, the research shows that the emotional value experience of community members is an important factor influencing customers' willingness to buy new products. Therefore, in this era of increasing emphasis on customer experience management, enterprises, based on the perspective of experience marketing, should not only focus on the experience that customers can get from the customer-enterprise interaction, but also take measures to improve the experience that customers can get from the customer-to-customer interactions. Furthermore, researches have demonstrated that customer-to-customer interactions in online brand communities can affect consumption experience. This revealed that community managers can encourage customer-to-customer interactions, and motivate topic matching among customer-to-customer interactions, so that customers can get a good experience from participating in online brand community activities.

Thirdly, enterprises should set up a customer-centered brand community management

Philosophy to enhance the sense of community trust. It can be seen from the results of this study that trust in

the brand community affects the positive results of high-quality interaction in the virtual brand community, which helps to improve the experiential benefits of the virtual brand community and thus promote the willingness to purchase new products. Therefore, building a trustworthy brand will win the trust of the brand community, thus facilitating the process described above. Meanwhile, brand community trust is another lever for enterprises to promote new product sales through high-quality interaction in virtual brand community. Therefore, enterprises should enhance customers' trust in virtual brand community in many aspects.

5.4 Research Limitations and Future Research Directions

First, this study tries to obtain survey data as regularly as possible to avoid the influence of common method bias. Furthermore, post-mortem tests have also shown that the common method bias in this study are within the acceptable range. However, the homologous method bias effect is still unavoidable. Second, this study proposes and demonstrates the partial mediating role of brand emotional value experience in the relationship between customer-to-customer interaction and customers' willingness to purchase new products, which indicates that there are other paths between customer-to-customer interaction and customers' willingness to purchase new products. Therefore, future studies can further explore other "internal black boxes" in which customer-to-customer interactions affect customers' willingness to purchase new products. Finally, this study focuses on the moderating effect of community trust from the perspective of community characteristics and relationship characteristics. However, how customer-to-customer interactions affect the process of customers buying new products may be affected by other factors, which indicates that future research can further explore other moderating variables.

CONCLUSION

According to the limitations of the previous literature, this study explores the influence mechanism and boundary of customer-to-customer interaction on the willingness to purchase new products in the virtual brand community by introducing customer emotional value experience as a mediating variable and community trust as a moderating variable. Also, this study attempts to break through and solve the limitations of the research on virtual brand community. And this study, based on 457 valid sample data from online platforms such as Instagram, Facebook, Yandex, and Mail.Ru, investigates the mediating mechanism and boundary conditions in which customer-to-customer interactions in a virtual brand community influence their willingness to purchase new products. The following conclusions are obtained in this study: (1) customer-to-customer has an obvious positive impact

on their willingness to purchase new products; (2) brand emotional value experience plays a significant part in mediating the customer-to-customer interaction and their willingness to purchase new products; (3) community trust positively moderates the positive impact of customer-to-customer interaction on brand emotional value experience, thus influencing customers' willingness to purchase new products. Therefore, the research results help to enrich the research achievements of virtual brand communities, clear the effectiveness of customer-to-customer interaction on the customers' willingness to purchase new products, further open the "black box" in which customer-to-customer interaction affects customers' willingness to purchase new products, and define the boundary conditions for customer-to-customer interaction to influence customers' willingness to purchase new products. It also provides important reference for enterprises to effectively manage virtual brand communities and promote positive output of brand communities.

REFERENCES

- Adjei, M. T., Noble, S. M., & Noble, C. H. (2010). The influence of C2C communications in online brand communities on customer purchase behavior. *Journal of the Academy of Marketing Science*, 38(5), 634-653.
- Baldus, B. J., Voorhees, C., & Calantone, R. (2015). Online brand community engagement: Scale development and validation. *Journal of Business Research*, 68(5), 978-985.
- Berger, S. C., & Messerschmidt, C. M. (2009). Babbling before banking? Online communities and pre-purchase information seeking. *International Journal of Bank Marketing*, 27(6), 446-466.
- Brodie, K. (2013). The power of professional learning communities. *Education as Change*, 17(1), 5-18.
- Bruhn, M., Schnebelen, S., & Schäfer, D. (2014). Antecedents and consequences of the quality of e-customer-to-customer interactions in B2B brand communities. *Industrial Marketing Management*, 43(1), 164-176.
- Dessart, L., Veloutsou, C., & Morgenthomas, A. (2014). Consumer engagement in online brand communities: a social media perspective. *Journal of Product & Brand Management*, 24(1), 28-42.
- Hajli, N., Shanmugam, M., Papagiannidis, S., Zahay, D., & Richard, M. O. (2017). Branding co-creation with members of online brand communities. *Journal of Business Research*, 70, 136-144.
- Ho, C. W. (2015). Identify with community or company? An investigation on the consumer behavior in Facebook brand community. *Telematics & Informatics*, 32(4), 930-939.
- Johnson, Z., Massiah, C., & Allan, J. (2013). Community identification increases consumer-to-consumer helping, but not always. *Journal of Consumer Marketing*, 30(2), 121-129.
- Kroenung, J., & Eckhardt, A. (2015). The attitude cube—A three-dimensional model of situational factors in IS adoption and their impact on the attitude–behavior relationship. *Information & Management*, 52(6), 611-627.
- Kucukemiroglu, S., & Kara, A. (2015). Online word-of-mouth communication on social networking sites. *International Journal of Commerce & Management*, 25(1), 2-20.
- Kunz, W., & Seshadri, S. (2015). From virtual travelers to real friends: Relationship-building insights from an online travel community. *Journal of Business Research*, 68(9), 1822-1828.
- Kuo, Y. F., & Feng, L. H. (2013). Relationships among community interaction characteristics, perceived benefits, community commitment, and oppositional brand loyalty in online brand communities. *International Journal of Information Management*, 33(6), 948-962.
- Lian, J. W., & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, 37(37), 133-143.
- Lin, C. P., Chen, S. C., Chiu, C. K., & Lee, W. Y. (2011). Understanding purchase intention during product-harm crises: Moderating effects of perceived corporate ability and corporate social responsibility. *Journal of Business Ethics*, 102(3), 455-471.
- Luo, N., Zhang, M., Mu, H., & Yu, W. (2016). How community interactions contribute to harmonious community relationships and customers' identification in online brand community. *International Journal of Information Management*, 36(5), 673-685.
- Mahrous, A. A., & Abdelmaaboud, A. K. (2017). Antecedents of participation in online brand communities and their purchasing behavior consequences. *Service Business*, 11(2), 1-23.
- Martínez-López, F. J., Anaya-Sánchez, R., Aguilar-Illescas, R., & Molinillo, S. (2016). *Factors Influencing Members' Engagement with Virtual Brand Communities*.
- Martínez-López, F. J., Anaya-Sánchez, R., Aguilar-Illescas, R., & Molinillo, S. (2016). *Value creation in virtual brand communities*.
- Marzocchi, G., Morandin, G., & Bergami, M. (2013). Brand communities: loyal to the community or the brand?. *European Journal of Marketing*, 47(1-2), 93-114.
- Massey, B. L., & Levy, M. R. (1999). Interactivity, online journalism, and English-language web newspapers in Asia. *Journalism & Mass Communication Quarterly*, 76(1), 138-151.
- Muniz, A. M., & O'Guinn, T. C. (2001). Brand community. *Journal of Consumer Research*, 27(4), 412-432.
- Nadeem, W., Andreini, D., Salo, J., & Laukkanen, T. (2015). Engaging consumers online through websites and social media: A gender study of Italian Generation Y clothing consumers. *International Journal of Information Management*, 35(4), 432-442.
- Nambisan S. & Baron R. A. (2010). Virtual customer environments: Testing a model of voluntary participation in

- value co-creation activities. *Journal of Product Innovation Management*, 26(4), 388-406.
- Nambisan, S., & Baron, R. A. (2010). Virtual Customer Environments: Testing a Model of Voluntary Participation in Value Co-Creation Activities. *Journal of Product Innovation Management*, 26(4), 388-406.
- Patterson, A. (2012). Social-networkers of the world unite and take over: A meta-introspective perspective on the Facebook brand. *Journal of Business Research*, 65(4), 527-534.
- Santos, M. A. D., Moreno, F. C., Guardia, F. R., & Campos, C. P. (2016). Influence of the virtual brand community in sports sponsorship. *Psychology & Marketing*, 33(12), 1091-1097.
- Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing*, 77(2), 203-220.
- Verhagen, T., Feldberg, F., Hooff, B. V. D., Meents, S., & Merikivi, J. (2011). Satisfaction with virtual worlds: An integrated model of experiential value ☆. *Information & Management*, 48(6), 201-207.
- Wang, H., Meng, Y., & Wang, W. (2013). The role of perceived interactivity in virtual communities: building trust and increasing stickiness. *Connection Science*, 25(1), 55-73.
- Wang, Y. G., Ma, S., Wang, Y. G., & Ma, C. (2013). An empirical study on the driving factors of customer interaction in virtual brand community and its impact on customer satisfaction. *Journal of Management*, 10 (9), 1375.
- Wang, Y., Shuang, M., & Li, D. (2015). Customer participation in virtual brand communities: The self-construal perspective. *Information & Management*, 52(5), 577-587.
- Wu, J., Huang, L., Zhao, J. L., & Hua, Z. (2015). The deeper, the better? Effect of online brand community activity on customer purchase frequency. *Information & Management*, 52(7), 813-823.
- Wu, S. C., & Fang, W. C. (2010). The effect of consumer-to-consumer interactions on idea generation in virtual brand community relationships. *Technovation*, 30(11), 570-581.
- Zheng, X., Cheung, C. M. K., Lee, M. K. O., & Liang, L. (2016). Building brand loyalty through user engagement in online brand communities in social networking sites. *Information Technology & People*, 28(1), 90-106.
- Zhu, D. H., Chang, Y. P., & Luo, J. J. (2016). Understanding the influence of C2C communication on purchase decision in online communities from a perspective of information adoption model. *Telematics & Informatics*, 33(1), 8-16.
- Zhu, R., Dholakia, U. M., Chen, X., & Algesheimer, R. (2012). Does online community participation foster risky financial behavior?. *Journal of Marketing Research*, 49(3), 394-407.