



# The Related Fusion Application of Computer Remote Network Communication Technology and Community E-commerce

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**Abstract.** With the rise of e-commerce and community marketing, it is particularly important to understand consumer behavior in the online community environment for the development of enterprises and community economy. Based on the theory of environmental psychology and from the perspective of online community atmosphere, this paper constructs a decision-making model of consumer purchasing behavior in online community atmosphere. The data were collected by issuing questionnaires, and then SPSS version 26.0 and AMO version 26.0 statistical analysis software were used to conduct relevant empirical analysis and hypothesis testing on the data, mainly including descriptive analysis, reliability and validity analysis, correlation analysis, regression analysis and path analysis. The results show that three dimensions of online community atmosphere: informational support, emotional support and control of uncivilized behavior have significant positive effects on community identity. Social identity has a significant positive impact on consumer buying behavior, and social identity has a complete mediating effect on the relationship between online community atmosphere and consumer buying behavior, which further reveals the internal influence mechanism of online community atmosphere on consumer buying behavior.

**Keywords:** Online Community Atmosphere · Community Identity · Buying Behavior

## 1 Introduction

In recent years, with the rapid development of mobile Internet technology and the popularization of mobile terminals, the Internet has had a great impact and change on people's life, consumption, travel and even culture. The Internet makes the communication between people virtual and networked, and gradually forms some network virtual communities with common love, interests, social identity and interpersonal relationships. Rheingold (1993) first proposed the concept of virtual community, believing that virtual community is a kind of social relationship gathered based on network communication. Consumers with common interests or certain social consensus on a brand can share information and communicate emotionally in the virtual space created by the Internet.

Some studies have pointed out that compared with traditional communities, online communities have unique characteristics such as homogeneity of interest preference and consumption behavior, strong two-way interpersonal communication, frequent interaction, timely feedback and high trust among members. Community managers effectively control uncivilized behaviors and correctly guide effective behaviors of the community. Community members actively participate, share knowledge and information, respond to other members' topics, actively communicate with them and help each other, so as to generate satisfaction and commitment to the community and further affect customers' community cognition and community identity, Let consumers change from passive recipients to active promoters, share their feelings when looking for purchase opinions, and finally have an impact on the purchase behavior of other members.

This paper discusses how online community affects consumers' purchase behavior from the two aspects of supporting atmosphere and controlling atmosphere in online community atmosphere, and constructs the intermediary variable of consumer community identity, so as to explore the impact of online community atmosphere on purchase behavior. This promotes the research on consumer purchase behavior in the environment of community marketing and helps to enrich the research theory of purchase behavior.

## 2 Theoretical Basis and Literature Review

### 2.1 Environmental Psychology

Environmental psychology is a branch of psychology, mainly studies the relationship between the environment and human psychology and behavior, an applied social psychology field, focusing on the systematic explanation of the relationship between the environment and human. Mehrabian & Rusell (1974) proposed the "s-o-r" model of "stimulus-individual internal state-response" based on environmental psychology. According to "S-O-R", the environment, as a stimulus, will affect the internal state of the individual, thus further leading to its behavioral response. Belk (1975) was the first to apply the "S-O-R" theoretical model to the research field of marketing. The research showed that individuals' self-generated cognition is restricted by the external environment and will eventually show some different behaviors and attitudes. Bagozzi and Colleagues (1999) [1] further studied the "s-o-r" model based on Mehrabian & Rusell's research and believed that the emotional response of the organism is an important mediator linking the external environmental stimulus and the behavioral response of the organism. The emotional response here mainly refers to the consumption emotions generated by customers in a specific business environment. With the development of the Internet and the deepening of research, many scholars have applied the "S-O-R" model to the study of online consumption behavior. According to the "S-O-R" model, in this paper, online community atmosphere is regarded as a stimulus (S), community identity as an internal state (O), and consumers' purchasing behavior as a response (R) to explore the influence of online community atmosphere on consumers' purchasing behavior with community identity as a mediator variable.

## 2.2 Community Atmosphere

Online community is based on the common consumption needs or common interests of people formed online community. Atmosphere can be used to describe a dynamic and complex relationship between human behavior and environmental stimuli. Kotler (1973) put forward the concept of “atmosphere” for the first time in the field of marketing, pointing out that the business atmosphere may exceed the product itself in the driving force of purchase. With the rise of e-commerce, many scholars began to focus on online research perspectives. According to the “S-O-R” theory, Eroglu et al. (2003) proposed for the first time that the atmosphere quality of online stores would have an impact on customers’ emotional and cognitive states, and thus have a positive effect on their online shopping results. Wei shoubo and cheng yan (2012) [3], based on MehrabianRussel model and combined with immersion theory, concluded that virtual atmosphere in online environment has a significant positive impact on consumers’ impulse purchase intention. Therefore, this paper believes that the atmosphere of online community will have an impact on consumers’ purchasing behavior.

Many scholars have discussed the dimension of community atmosphere from different perspectives. Zhu Jin (2017) [5] used empirical methods to explore the impact of online community atmosphere on the innovation behavior of community members based on the single dimension of supportive atmosphere. Chen Yang (2018) [2] divides the community atmosphere into four dimensions: interactive atmosphere, control atmosphere, product mutual assistance atmosphere and sales presence atmosphere. Sun Yi et al. (2016) focused on the influence of social atmosphere in a community on members’ purchase intention. Zhao Jianbin and Jing Fengjie (2016) [4] divided the community atmosphere into supportive atmosphere and controlling atmosphere, and further divided the controlling atmosphere into uncivilized behavior control and membership control in the study. Chang Yaping et al. (2015) further divided online community support into informational support and emotional support based on the research of Liang et al. Therefore, this paper divides the online community atmosphere into supporting atmosphere: informational support, emotional support; And controlling climate: control of uncivilized behavior.

## 2.3 Community Identity

Community identity theory was first put forward by scholars Tajfel and Turner, and has been continuously developed in the research of group behavior. As a specific form of social identity, group identity is the internal expression of individual social identity based on self-group classification, that is, community members realize that they belong to a particular community through identity identification, and deepen the importance of community boundary division through the difference and comparison of behaviors inside and outside the group. Further strengthen members of the community belonging and community value identification. Algesheimer and Herrmann (2005) understood community identity as cognition and emotion. The former are the self-knowledge of the relationship between members, while the latter is the emotional connection between members. In short, community identity reflects the strength of the relationship between members of a community and other members as well as between the community group. Identification,

cognition, emotion and evaluation elements in online communities all affect consumer participation behaviors in the community. Richardetal. (2006) believed that members' identification with the community could lead to loyalty behavior, which then promoted their actual consumption behavior. Wang Mingke et al. (2018) point out that members of online communities will seek common topics and interests in communication, gradually forming a group identity and cultivating a feeling of "comrades". If everyone in the community is interested in the same product or event, and one member makes a decision or purchase, he or she will become the reference group for other members, prompting them to follow suit and turn the common pursuit into action. Therefore, based on the "S-O-R" theoretical model, this paper takes community identity as an individual's internal state to study its influence on consumers' purchasing behaviors.

### 3 Research Model and Hypothesis

According to the theoretical basis and literature review mentioned above, environmental psychology, as a discipline studying the interaction between environment and individual behavior, provides a theoretical perspective for this paper to establish the relationship between online community atmosphere and consumer buying behavior. Based on this, this paper proposes that the online community atmosphere (environmental stimulus) influences members' community identity (internal state), and then influences individuals' purchasing behavior (behavioral response). The research model of this paper is shown in Fig. 1.

#### 3.1 Online Community Atmosphere and Community Identity

Informational support refers to helping others with facts or suggestions to solve problems. This kind of help also includes assessment information such as feedback on the individual's explanation of the situation and guidance on possible courses of action. Mcalexander & Schouten (2002) believed that members' acquisition of valuable brand information

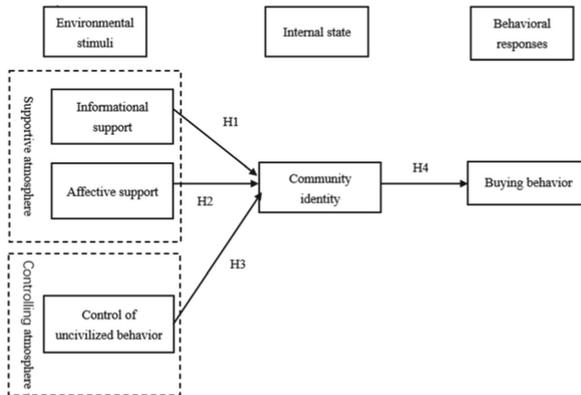


Fig. 1. Research model

from the community was conducive to realizing the cognitive requirements of community members, thus strengthening their sense of community identity and commitment. Gan Chunmei (2017) believes that the information exchange and interaction between community members will help to obtain emotionally pleasant experience, and also increase the relationship and trust between each other, thus helping to enhance the identity of the community. Therefore, this paper believes that a good informational support atmosphere in the community will promote the quality of the relationship between members, make them feel a sense of belonging and involvement, and enhance the community identity of members. To sum up, this paper proposes the following hypotheses:

H1: Informative support positively affects members' community identity.

Emotional support usually includes the expression and behavior of individual emotions, and refers to the expression of love and care, respect and encouragement. Wulfetal (2001) believed that when community members or community owners actively and enthusiastically help other members, they would have a strong sense of responsibility, identity and commitment to the community. Sukocoetal. (2010) found that if community members felt cared and respected by other members, their sense of trust, identity and satisfaction to the community would be further enhanced. Therefore, this paper argues that environmental stimulus, internal state, behavioral response, supportive atmosphere, informational support, emotional support, controlling atmosphere, uncivilized behavior, control of social identity buying behavior H1H2H3H4 Emotional support from the community will further strengthen the sense of belonging and identity of community members. To sum up, this paper proposes the following hypotheses:

H2: Emotional support positively affects members' community identity.

Uncivilized behavior control mainly refers to community managers' deletion of unethical, illegal and false information and speech control behaviors, which can be regarded as a community's commitment and guarantee to members. Zhou Zhimin et al. (2013) proposed that virtual brand communities regulate, stop and even punish uncivilized behaviors, which is conducive to maintaining the good operation of the community and strengthening members' recognition of community members. Zhao Jianbin and Jing Fengjie (2016) believe that uncivilized behavior control can enable community members to obtain community organization commitment and guarantee, establish psychological connection between members and brand community, and strengthen the strong relationship and identity between community members and community. Therefore, this paper believes that uncivilized behavior control is conducive to providing a safe and clean communication place for community members, so as to enhance the sense of community identity. To sum up, this paper puts forward the following assumptions:

H3: Uncivilized behavior control positively affects members' community identity.

### **3.2 Community Identity and Consumer Buying Behavior**

A strong sense of community identity means that community members form a strong emotional bond with and between community members, and have a high sense of belonging and identity to the community. Studies have shown that a strong sense of community identity can make consumers more inclined to buy goods in the community, and thus strengthen their own community identity. Bagozzi et al. (2006) believe that brand community identity can promote consumers' brand purchasing behavior. Bellen et al. (2001)

proposed that social identity plays a significant role in promoting consumers’ purchase intention and recommendation intention. Li Xianguo et al. (2017) concluded that the perceived value of consumers to the community in virtual community would have a positive impact on the purchase intention of new products through the mediating effect of group identity. Xu Qing (2019) also found that in the wechat community, consumers’ community identity has a significant positive impact on their purchase intention through questionnaire survey. Therefore, this paper believes that community identity will have a positive impact on consumers’ purchase intention and behavior. To sum up, this paper proposes the following hypotheses:

H4: Community identity positively affects members’ purchasing behavior.

## 4 The Data Analysis

### 4.1 Reliability and Validity Analysis

Confirmatory factor analysis was used in this study to investigate the reliability and validity of the scale. The results are shown in Table 1. The values and compound reliability of each potential variable are all greater than 0. 8, indicating that the questionnaire has high reliability. The standard load values of all factors were above 0. 7, and the average extraction variance of each variable was greater than 0. 5, indicating that the scale in this study had good convergence validity and discriminant validity.

### 4.2 Model Analysis

It can be seen from Fig. 2 that the coefficients of the four paths in the structural model of this study are all significant, indicating that all hypotheses in the study have been well explained. From the path coefficient, the informational support, emotional support, uncivilized behavior control and community identity of path coefficients were 0. 22, 0. 35, 0. 39, informational support, emotional support, uncivilized behavior control of community identity has significant positive effect, to verify the hypothesis H1, H2, H3 is established; The path coefficient of community identity on consumer buying behavior is 0. 87, indicating that community identity has a significant positive impact on consumer buying behavior, which verifies the validity of hypothesis H4.

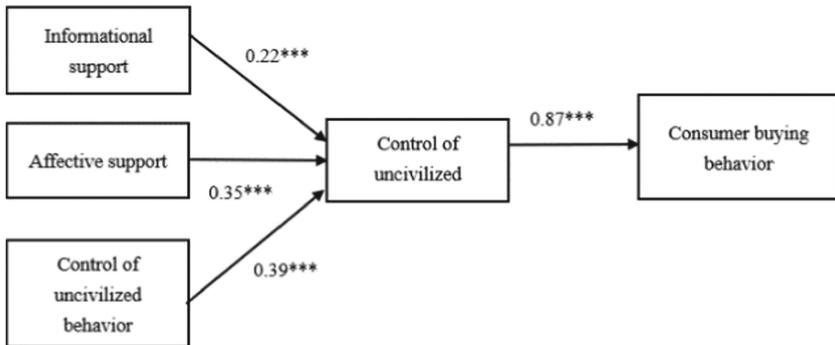
**Table 1.** FACTOR ANALYSIS RESULTS

Variable	item	Factor loading	AVE	CR	Cumulative variance contribution rate%
Informational support	A1	0. 837	0. 668	0. 889	67. 266%
	A2	0. 814			
	A3	0. 803			
	A4	0. 815			

(continued)

**Table 1.** (continued)

Variable	item	Factor loading	AVE	CR	Cumulative variance contribution rate%	
Affective support	B1	0.840	0.681	0.895		
	B2	0.857				
	B3	0.792				
	B4	0.810				
Control of uncivilized behavior	C1	0.856	0.669	0.890		
	C2	0.785				
	C3	0.800				
	C4	0.830				
Community identity	D1	0.847	0.714	0.909		71.390%
	D2	0.852				
	D3	0.863				
	D4	0.817				
Buying behavior	E1	0.860	0.739	0.919	73.916%	
	E2	0.848				
	E3	0.863				
	E4	0.867				



**Fig. 2.** Coefficient analysis results of structural model

## 5 Conclusion and Revelation

### 5.1 Conclusion

First, online community atmosphere has a positive impact on community identity. Informational presentation is to provide information, knowledge, suggestions or feedback,

which directly serves the problems encountered by community members. Affective support takes the form of care, understanding and empathy, which can enhance the emotional connection and sense of belonging among members. Informational support and emotional support belong to the support atmosphere, which can further enhance the community's sense of trust, identity and satisfaction. Uncivilized behavior control belongs to a controlling atmosphere, which presents the form of deleting immoral, illegal, false posts or remarks. It can maintain the good operation of the online community and strengthen the members' sense of identity with the members of the community.

Second, the online community atmosphere can influence the community identity to lead consumers to purchase behavior, proving that the community identity plays a complete intermediary role between the online community atmosphere and consumer buying behavior. Moreover, there is a significant positive relationship between community identity and consumer buying behavior. Informational support, emotional support, and uncivilized behavior control would help form a strong community identity online community, which means that members of the community and community, and formed a strong emotional connection between members of the community, the community has a higher sense of belonging, sense of trust and community commitment, significantly promote the consumer's purchase intention and recommendation intention, to further influence consumers' purchasing behavior and make them more inclined to purchase and recommend goods within the community.

## 5.2 Revelation

The research shows that information support, emotional support and uncivilized behavior control in the online community atmosphere have a significant positive impact on consumer behavior through the intermediary variable of community identity. In order to create a good network community atmosphere, enterprises should pay attention to the operation and management of the network community, promote the continuous formation of information support and emotional support of the network community, create a good network community atmosphere and environment, so as to mobilize the enthusiasm of community members to participate in communication and community activities, and finally enhance the sense of community identity, so as to produce the purpose of purchase behavior. Research limitations and Prospects.

Although this paper refines the dimension division of online community atmosphere to a certain extent, it may not exhaust all the connotation of online community atmosphere. With the development of e-commerce and community economy, it is necessary to further explore the content covered by community atmosphere in future research. Future research can further expand the source of samples and try to use experimental methods to expand the reliability of research conclusions.

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