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Traffic Monetization on Community E-commerce Platforms: Trust in Virtual Communities and Its Effect on Actual Purchase

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Short Research Paper

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Abstract: In China, major community e-commerce websites are focusing on increasing customer bases by converting members in their virtual communities into online buyers, which is one of the important ways of monetizing social traffic. Based on the Stimulus-Organism-Response (S-O-R) theory, this paper proposes and empirically tests a model of trust in virtual communities. We will collect data through online questionnaire surveys with users of Little Red Book, followed by structural equation modeling to analyze the influence mechanism of community e-commerce platform characteristics on consumers' trust. The expected results will show the full mediation effects of interactivity and presence in the relationship between the quality of user-generated content (UGC) and the influence of key opinion leader (KOL) in virtual communities and trust. And consumers' identity trust, cognitive trust as well as emotional trust will all significantly promote their actual purchases. This paper fills the research gap of trust mechanism on community e-commerce platforms. It also guides the community e-commerce platforms to encourage users to generate more high-quality content and promote major brands to cooperate with KOLs to accelerate the monetization of social traffic in virtual communities.

Keywords: community e-commerce platforms, traffic monetization, trust, interactivity, presence

1. INTRODUCTION

Community e-commerce refers to the business model in which consumers with common preference and values recommend, share and discuss products in virtual communities to convert social traffic into e-commerce transactions. Nowadays, with the popularization of the mobile Internet, social communities have gathered a large number of users and become new portals for e-commerce to acquire customers. Community e-commerce has emerged in this context. Different from traditional e-commerce platforms, it has the following characteristics: (1) Stronger sense of participation. Traditional e-commerce platforms always implement precise marketing to customers unilaterally, but in community e-commerce platforms, every user can generate content to influence the decisions of other consumers; (2) Higher trust value. Trust is a key factor in the embedding of social networks into e-commerce. Users can reduce perceived risks in e-commerce transactions with the sense of trust in social networks [1]. With the continuous integration of social traffic and e-commerce transactions, China's community e-commerce scale has exceeded 1 trillion in 2019, an increase of 59% year-on-year.

Founded in 2013, Little Red Book is a typical community e-commerce platform. It adopts the "community + e-commerce" business model, which not only operates a virtual community for users to share their lives, but also operates the B2C self-operated e-commerce platform named Welfare Agency. Currently, Little Red Book has more than 150 million monthly active users and more than 8 billion notes are exposed daily. The reason why it succeeds is that, on one hand, users of Little Red Book can generate content (UCG) spontaneously. A group of young people share their consumption experiences in virtual community which makes Little Red Book the birthplace of consumer trends. On the other hand, major brands cooperate with key opinion leaders (KOL) such as Internet celebrities and well-known bloggers to reach consumers in the form of short videos and live broadcasts in the community of Little Red Book, so as to precipitate super users and form a closed loop of

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consumer purchases. The e-commerce transactions on Little Red Book present the characteristics of high repurchase rate (48.7%), high conversion rate and low return rate. Community e-commerce has changed the role of users in traditional e-commerce. The online interaction and content generation of users in virtual communities will directly affect their trust [2]. Therefore, the **Research Question (1)** is: Compared with traditional e-commerce platforms, how do the characteristics of UGC and KOL in virtual community enhance users' trust and promote their purchase intention?

Although operating e-commerce platform is a feasible way to monetize social traffic, the road for community e-commerce is still tough. Compared with traditional e-commerce platforms, the self-operated Stock Keeping Unit (SKU) is limited in number and the quality of the introduced third-party channels is not guaranteed, so consumers have to choose other online stores and it is difficult for traffic to convert in their own stores. In addition, after over-commercialization, the sharing experience of users in virtual communities will be weakened. Based on this, the **Research Question (2)** is: After being recommended in virtual community, users will give priority to purchasing in online stores operated by community e-commerce platforms, or on other third-party platforms (such as Taobao)?

Community e-commerce platforms integrate the connection between users into the e-commerce platform, which can improve the trust environment of traditional e-commerce to a certain extent. However, the current research in the field of community e-commerce mainly focuses on users' satisfaction, sharing of knowledge, value creation, etc. [3] and there are few studies on platform trust mechanisms. In addition, how to convert social traffic into online shopping traffic and increase users' loyalty in community e-commerce platforms is rarely involved.

The purpose of this study is to analyze how the quality of user-generated content (UGC) and the influence of key opinion leaders (KOL) are associated with consumers' trust and actual purchases in community e-commerce platforms. We will take the users of Little Red Book as the research subject of the questionnaire, and divides the trust of users into three sub-dimensions: identity trust, cognitive trust and emotional trust. Based on the S-O-R theory, we will build a model of actual purchase of consumers on the community e-commerce platform. To the best of authors' knowledge, though several studies have been carried out to identify the trust mechanism in online shopping, how to increase trust in the scenario of the community e-commerce platforms with mediating effects of interactivity and presence has been studied by this article first. This article is also the first to study about how to monetize the social traffic gathered in the virtual community on its own e-commerce platform.

The paper is arranged as follows. The theoretical background of community e-commerce and trust mechanism will be discussed in the next section. Subsequently, theoretical framework and hypotheses development will be discussed. Then the method to analyze how the quality of UGC and the influence of KOL are associated with consumers' trust and actual purchases on community e-commerce platforms is proposed. This article will conclude with the implications and future work.

2. THEORETICAL BACKGROUND

2.1 Virtual community

Traditional community is a geographical concept. There are content and interaction in the community, which realizes the connection between people and things. With the development of network technology, virtual community (VC) is a kind of new community formed by people connected via the Internet [4]. In other words, virtual community is a group of people with similar interests and practices who communicate regularly and continuously on the Internet by sharing cyberspace [5].

Virtual community is not only for sharing the ideas, facts or information, but it is useful for developing

business or a better relationship. For that reason it attracts e-commerce people to expand their business [6]. Community e-commerce came into being under this background.

2.2 Community e-commerce

Community e-commerce is composed of two parts: a virtual community integrating content generation and interpersonal social functions and an online shopping platform (Figure 1) [7]. It is essentially a new type of e-commerce model that promotes user interaction and user-generated content (UGC) through virtual communities and drives business transactions. It can be traced back to the online auction community with 1.6 million registered online members established by eBay in 2000.
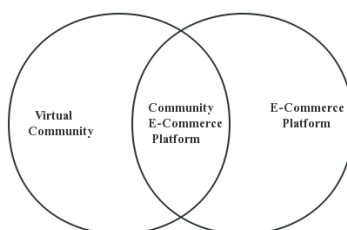

Figure 1.   Community e-commerce.

The research on community e-commerce mainly focuses on the following aspects: (1) User behavior. This kind of research mainly studies the purchase intention of customers and analyzes the mechanism of factors such as trust, loyalty and incentives in the purchase decision [7][8]. (2) Business models. This type of research attempts to analyze the characteristics of business models in the community e-commerce scenario and differences between business models in the traditional business environment [9]. (3) Network analysis. This part of research focuses on the characteristics of social media and its impact on community e-commerce, users and organizations [10]. In addition, there is a small amount of research focusing on privacy policies.

Most scholars just regard community e-commerce as a new customer acquisition and marketing method, emphasizing its advantages in terms of efficiency, cost and experience. However, they lack of understanding of the internal mechanism of community e-commerce development. At present, there are still vacancies for the characteristics of the community e-commerce platform, such as the quality of UGC and the influence of KOL on the user's sense of trust, and how to monetize the traffic gathered in the virtual community into e-commerce transactions.

2.3   Trust

Because of the complexity and abstraction of trust, there is no uniform definition of it in academia. In the field of sociology, trust is regarded as the basis for human participation in social life. In the field of e-commerce, trust is defined as a set of beliefs regarding the seller's honesty, ability and benevolence towards the buyer [11].

A large number of literature have focused on consumer trust in online shopping. When transactions are converted from a traditional face-to-face situation to a virtual environment, trust is even more important. Users need trust to reduce the uncertainty and complexity in transactions [12]. Regarding the influencing factors of consumer trust in online shopping, the trust system in B2C e-commerce consists of institutional trust, direct trust and recommendation trust [13]. In addition, consumers' personal factors, system environment factors, website factors, company factors and relationship marketing methods can increase consumer trust in e-commerce platforms [14]. In online marketplaces, maintaining and improving users' loyalty requires the maintenance and strengthening of trust [15].

After the rise of community e-commerce, scholars compared it with traditional e-commerce and found that it integrates the functions of social media and features such as product recommendation and experience sharing will have an impact on users' trust and behavior [16]. Traditional e-commerce users take products or services as

their primary needs, and users' trust comes from factors such as the quality of the platform, the credit rating of the merchant, the prior feedback of products and after-sales guarantees. However, due to the embedded social network, community e-commerce has changed the structure of consumer demand. In this context, the users' trust source channels are broadened and the sharing of information in virtual community can reduce users' risk perception. Trust in community e-commerce platforms can be divided into identity trust, behavioral trust, cognitive trust as well as emotional trust [17]. The open, transparent and effective information in the interaction helps to build an orderly trading environment and trust can be improved. The interaction between consumers and the website as well as the interaction between consumers can increase the spatial presence of consumers which can increase consumers' trust in the capabilities of B2C online stores. And the interaction between consumers and online sellers as well as the interaction between consumers can increase the social presence of consumers which can increase consumers' trust in the integrity and goodwill of B2C online stores [18].

The trust on the community e-commerce platform serves as the link between users and between users and the platform, reducing customer acquisition costs for the platform and transaction costs for users so as to create greater commercial value. Hence, trust is an important part of the research field of community e-commerce platform. However, research on the formation mechanism of trust in community e-commerce platforms is very scarce and shallow. In this context, this article explores how UGC and KOL in virtual communities promote the generation of users' trust with mediating effects of interactivity and presence.

3.   THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

The well-known "Stimulus-Organism-Response" (S-O-R) theory is widely used in the research of consumers' behavior in online shopping environment. According to the S-O-R theory proposed by psychologists Mehrabian and Russell, stimulus (S) is an external environmental factor of the body, and organism (O) is a psychological transformation mechanism of users internalizing stimulus into information, response (R) represents the users' relevant behavior to the external stimulus. We make full use of this research paradigm to establish the theoretical framework (Figure 2) of the influence mechanism of UGC quality and KOL influence on consumer trust and actual purchase.
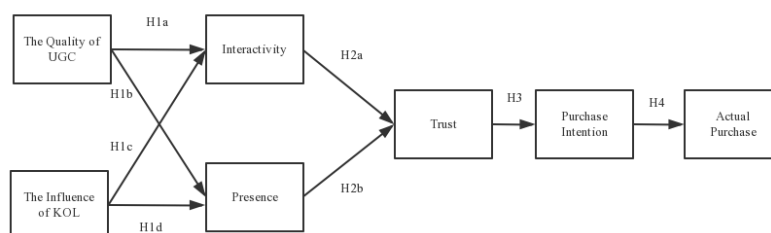
Figure 2.   Theoretical framework.

High-quality reviews can describe product features and usage experience in detail, while low-quality reviews are simple and unclear content. The higher the quality of user-generated content, the stronger the promotion of consumers' purchasing intention [19]. Compared with reviews with low emotional intensity, reviews with high emotional intensity can stimulate consumers' desire to purchase. To conclude, the quantity, quality as well as information and interpersonal interaction of user-generated content (UCG) can affect consumers' trust. To operate the community e-commerce platforms, whether the UCG is attractive directly determines consumers' lock in target products.

Although major e-commerce platforms are trying to use big data technology for precise marketing, how to satisfy consumers' personalized information needs is still difficult. Especially in the era of information explosion,

the cost of searching for information is very high. Therefore, listening to the suggestions of key opinion leaders (KOL) has become the better choice of consumers. Existing research points out that the influence of key opinion leaders mainly depends on product-related and individual-related factors. Among the factors related to products, Nicola et al. (2009) found that opinion leaders showed stronger influence when they were more involved in a specific product category. Moreover, the continuous high degree of product involvement is conducive to opinion leaders collecting knowledge related to this type of product from different information channels (Venkatraman, 1990), and thus better affecting information recipients. Robertson (1971) found that consumers who prefer to purchase complex, high-risk and difficult-to-test products are more likely to be influenced by opinion leaders. Among the factors related to individual characteristics, Cosmos and Sheth (1980) subdivided 24 characteristics of consumer opinion leaders and classified them as practical, authoritative, expert, territorial, accessible, and self-centered and stubborn. Opinion leaders are not only at the center of the social community, but also possess the characteristics of accurate product knowledge and not easy to be restrained. The speed at which they deliver new information will significantly affect the number of new information adopters, so using key opinion leaders is one of the effective marketing strategies [20].

Compared with advertising media, communication between individuals has been considered more trustworthy and influential. Both the user-generated content and key opinion leaders can provide consumers with product information and shopping recommendations through frequent WOM communication, thereby affecting their interactivity and presence. Interactivity refers to the buyer's subjective perception of high-quality interaction with the seller and presence refers to the perception of intimacy or being close to another person [21]. In community e-commerce websites, details, such as product features, promotion information and seller's services, can be specified during the interaction process in virtual community. In addition, since users in social community may deal with other users' questions, a higher degree of presence is more likely to result in a buyer feeling that his/her expectations and service needs are met.

Hypothesis 1a: The quality of user-generated content (UGC) in virtual community contributes to users' interactivity with the e-commerce platform.

Hypothesis 1b: The quality of user-generated content (UGC) in virtual community contributes to users' presence with the e-commerce platform.

Hypothesis 1c: The influence of key opinion leaders (KOL) in virtual community contributes to users' interactivity with the e-commerce platforms.

Hypothesis 1d: The influence of key opinion leaders (KOL) in virtual community contributes to users' presence with the e-commerce platforms.

Hypothesis 2a: A user's interactivity contributes to his/her trust in the platform.

Hypothesis 2b: A user's presence contributes to his/her trust in the platform.

In the context of online marketplaces, Gefen and Straub (2004) suggest that trust can be nourished by interaction, justifying the contribution of social presence to trust building, which subsequently leads to higher purchase intentions. Online trust in general leads to trust-related outcomes, such as transaction intentions and actual transactions [22]. We thus account for the effect of trust on purchase intentions in our context.

When a user is recommended for a certain product in virtual community and has the willingness to buy, he/she can either choose to purchase in online stores operated by the community e-commerce company or a third-party e-commerce platform. Therefore, how to improve user stickiness and keep users on the platform to complete real purchases is particularly critical.

Hypothesis 3: A user's trust in the platform contributes to his/her purchase intentions.

Hypothesis 4: A user's purchase intentions lead to his/her actual purchases on community e-commerce

platform.

4. PROPOSED METHOD

In order to test the proposed hypotheses, we will conduct a survey study with users of Little Red Book, followed by psychometric analysis using the structural equation modeling (SEM). It is particularly suitable for testing causal relationships among psychological perceptions that are not directly observable to researchers.

To develop the questionnaire (Table 1), we reused some existing quality questions designed by others for the same construct and slightly modified them according to the research logic of this article. In addition, some other items were formed by qualitative interviews and expert suggestions. Items for the quality of UGC and influence of KOL were adapted from related literature [23], and identity trust, cognitive trust and emotional trust were adapted from trust mechanism literature [17]. Items were designed with a 7-point Likert scale. 1 means strongly disagree, 7 means strongly agree.

To ensure that items reflect the intended construct, content validity should be checked first. Most of the questions we used were the rephrasing of different aspects of a construct as defined in related literature, which provided the basis for content validity. In addition, two professors familiar with the research project were invited to discuss the phrasing of the questions to ensure that they had at least face validity. Minor changes have been made on the basis of the feedback.

Table 1. Questionnaire.

Constructs	Items	References
The Quality of the User-generated Content (UGC)	The content shared by users in virtual community provides views on different aspects of the product.	Zhao, (2020)
	The content shared by users in virtual community is helpful for me to increase my understanding of the product.	
	The content shared by users in virtual community is helpful for me to learn professional knowledge in related fields.	
The Influence of the Key Opinion Leaders (KOL)	The key opinion leaders of Little Red Book have a certain leading position in this product field.	Zhao, (2020)
	I think the key opinion leaders have experience in buying and using this product.	
	The key opinion leaders usually pay close attention to such products.	
Interactivity	The users in virtual community respond to my questions very quickly.	Liu, (2003) [24]
	The virtual community facilitates two-way communication between users.	
Presence	I felt I was more in the "real world" than the "computer world" when I was browsing the content in virtual community.	Khalifa & Shen, (2004) [25]
	There is human warmth in virtual community.	
Identity Trust	I trust the virtual community of Little Red Book.	Yan & Peng, (2019)
	I trust the members in virtual community of Little Red Book.	
Cognitive Trust	I believe that Little Red Book is valuable.	
	I believe that Little Red Book is safe.	
Emotional Trust	My loyalty to Little Red Book is very high.	
	I have the willingness to share in virtual community of Little Red Book.	
Purchase Intention	I would like to buy products shared by users of Little Red Book.	Davis & Vankatesh, (2003)
Actual Purchase	I choose to buy the product from the Welfare Agency operated by Little Red Book.	

5. IMPLICATIONS AND FUTURE WORK

The theoretical implication of this article is to improve the mechanism of UGC and KOL on user trust on the community e-commerce platforms. In addition, it fills the research gap on how to monetize the social traffic in virtual community.

The practical implication of this article is to guide the community e-commerce platforms to encourage users in virtual community to generate more high-quality content and give more support to the KOLs to promote the monetization of traffic on this e-commerce platform.

From now until the WHICEB conference, our major focus is collecting data via surveys. After that, we will use SPSS to analyze the reliability and validity of the questionnaire. In addition, we will use the structural equation modeling method to test the hypotheses in the theoretical framework and examine the mediating effects shown in Figure 2. At last, we intend to present the preliminary results of our study at WHICEB.

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