

# Investigating the Determinants of Purchase Intention in C2C E-Commerce

Kee-Young Kwahk, Xi Ge, Jun-Hyung Park

**Abstract**—This study aims to examine the determinants of purchase intention in C2C e-commerce. Specifically the role of instant messaging in the C2C e-commerce context is investigated. In addition to instant messaging, we brought in two antecedents of purchase intention - trust and customer satisfaction - to establish a theoretical research model. Structural equation modeling using LISREL was used to analyze the data. We discussed the research findings and suggested some implications for researchers and practitioners.

**Keywords**—E-commerce, Online marketing, C2C, Purchase Intention

## I. INTRODUCTION

IN recent years, many companies have started to provide complementary services to support C2C e-commerce, such as web forums and chat rooms [24]. Particularly in China, C2C e-commerce has been found more popular than B2C in that the C2C transaction volume made up 89% of the whole online shopping market in the first half of 2009 [7].

The most successful C2C e-commerce firm in China is Taobao, founded in 2003, belonging to Alibaba that began as a B2B service as the first e-commerce company in China. As of June of 2009, registered members of Taobao reached 145 million and transactions 29.4 billion US dollars [40]. The e-commerce transaction of China in 2009 was 36.7 billion US dollars, indicating that Taobao accounted for the whole country's 80% growth in e-commerce transactions [8]. Different from other countries' C2C e-commerce, Chinese people tend to use instant messengers a lot in their C2C transactions. Taobao is the first one that started to bring an instant messenger to C2C transactions and has successfully connected vendors and consumers through it. This was also thought as an important factor that helped Taobao succeed in the e-commerce market [43].

Previous studies have argued that trust is one of the most important factors that affect e-commerce transactions [24]. Since, especially in C2C transactions, C2C platform providers usually play mediating roles between sellers and buyers, trust will have an increased effect on a consumer's purchase intention. Because Chinese people have a habit that they like engaging in conversation when purchasing something, they are likely to have less trust in a virtual environment like C2C e-commerce compared to the traditional transactions.

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For this reason, instant messaging (IM) can be helpful in C2C e-commerce. Through direct communication such as chatting, buyers and sellers could know more about each other and products, and thereby improving trust between them accordingly. Using IM while completing transactions would contribute to making the transaction more reliable and help improve the consumer's understanding for the transaction. Therefore, more research is needed to identify the relationship between successful e-commerce and IM usage. This study aims to examine the effects of instant messaging on trust and customer satisfaction, which in turn leads to the purchase intention of C2C e-commerce.

## II. LITERATURE REVIEW

### A. Instant Messaging

IM has become a popular Internet application around the world since it has been developed in 1996 [33]. IM is an Internet-based application that provides close to real-time communication between people [11]. Faulhaber [14] defines IM as a text-based means of near-real-time communication between customers who have registered for the service. Carmeron and Webster [5] describe IM as a communication technology that allows employees to send and receive short text-based messages in real-time and to view associates who are also 'online' and currently available to receive messages. McClea et al. [28] labels IM as the ability for one to see if a chosen friend, co-worker, or associate is connected to the Internet. From the literature on IM, we can summarize the features of IM as follows.

First, IM is Internet based and can be operated under an Internet environment, implying that it can be used ubiquitously. Second, it is real-time and text-based, which means information can be transferred instantly and recorded with no time delay. Third, IM provides multi-functions such as voice calls, video calls, file transfers, file sharing, games, and desktop connections that can be used as computer or IT support services. Fourth, IM has a low setup cost. IM is easy to install, and most IM applications can be used free of charge.

With these advantages, IM is widely used more than before, and thereby studies on IM have become more important. IM research can help to reveal why and how people use communication technologies for keeping and building interpersonal relationships such as friendships, employee relationships, and business customer relationships [11]. Since IM offers features to enhance the conversational and relationship-oriented attributes required for communication technologies [25], in a C2C e-commerce, sellers can use IM to maintain and enhance their customer relationships. Many former researches have dealt with IM applications in organizational settings [33].

For example, Cameron and Webster [5] interviewed organizational IM users to understand how users choose IM as a communication tool and how IM is used in the workplace. In their study, they discovered that critical mass is an important factor and that IM has become another important communication channel. In the context of C2C e-commerce, we consider IM as an important communication channel as well.

### B. Trust

Trust building is one of the fundamental requirements for establishing online exchange relationships [32]. Therefore, trust is a necessary element that has to be underlined in an e-commerce environment. E-commerce is a relatively new concept to most people. Although it has been much advanced over recent years, there are still numerous people who are not familiar with this new transaction platform. In the e-commerce context, since both sellers and buyers can not have a direct meeting and the buyers cannot even directly see the products, establishing trust between the buyers and sellers is more important than in traditional transactions.

There have been a lot of definitions of trust in e-commerce in former research. Mayer et al. [27] defined trust as the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the truster, irrespective of the ability to monitor or control that other party. Trust is a governance mechanism in exchange relationships by uncertainty, vulnerability, and dependence [22].

It refers the willingness to depend based on belief in ability, benevolence, and integrity [17]. Generally, trust in e-commerce contains the overall trust [39], benevolence, competence, and integrity of the vendor [29]. It is difficult to imagine an exchange relationship that could be developed and nurtured without trust [37]. In summary, trust can simply be thought as a critical factor that affects an e-commerce transaction, and it has been proved that trust has an influence on a customer's willingness to purchase online [18]. Therefore, we believe that trust is a necessary element when talking about C2C e-commerce.

### C. Customer Satisfaction

Tse and Peter [42] defined customer satisfaction as the consumer's response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product as perceived after its consumption. Oliver [31] concluded that customer satisfaction is a summary attribute phenomenon coexisting with other consumption emotions. It is a key issue for all those organizations that wish to create and keep a competitive advantage in this highly competitive world [21]. Joan et al. [23] proposed three characteristics for customer satisfaction. First, customer satisfaction is a response (emotion or cognition); second, customer satisfaction is the response of a particular focus that can be expectations, product, and experience; third, customer satisfaction is the response occurring at a particular time after consumption or after choice.

For the e-commerce field, customer satisfaction is defined as the contentment of the customer with respect to his or her prior purchasing experience with a given electronic commerce firm [34]. In this paper, in terms of IM usage, we simply consider that customer satisfaction in a C2C e-commerce is the C2C buyers' subjective transaction experience towards C2C sellers.

## III. RESEARCH MODEL AND HYPOTHESES

To examine the impact of IM usage, we next develop our research model and hypotheses as shown in Figure 1. Trust in e-commerce refers to the beliefs that the C2C website is capable of providing quality services and would treat its consumers or users well [44]. Handy [20] asserted that "trust needs touch." Lee et al. [26] also pointed out that communication could affect trust and effectively increase customer loyalty in Internet shopping. Consistent with this, text chat through IM has been proved to have an impact on online trust development because IM is considered as a popular online communication way among Internet users [25]. Therefore, IM can be considered a type of touch that might play a role in enhancing trust. Thus, we propose the following hypothesis.

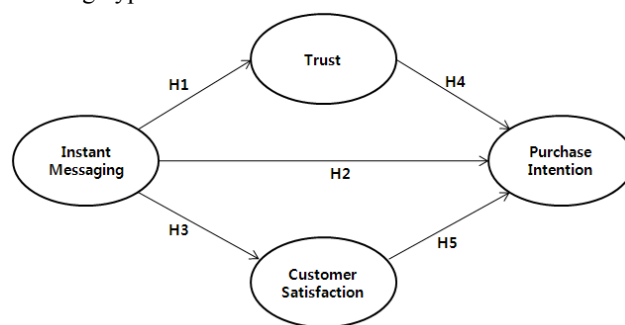


Fig. 1 The Research Model

H1: *Instant messaging will positively affect trust in C2C e-commerce.*

Doyle [13] concluded that IM could be used as a tool for direct marketing, which means that vendors could directly communicate with consumers in a real-time manner via IM. Tamimi et al. [41] found that in the case of Lands' End, customers who used IM were 70 percent more likely to buy than those who called 800 free numbers. Indeed, when buyers and sellers communicate via IM, most sellers would introduce their products well as possible. This is also a kind of promotion that means a seller can directly persuade a buyer as to whether or not they are reputable. Hence, IM could be very useful in facilitating transactions in the e-commerce context. Therefore, we propose the following hypothesis.

H2: *Instant messaging will positively affect purchase intention in C2C e-commerce.*

One of the challenges in C2C e-commerce is refund or exchange. When those kinds of problems occur, it will be convenient to connect via IM to solve such problems through a real-time conversation.

Therefore, using IM could be thought of as a new tool of customer service. Users not only can have a message chat but also can send images or have a voice or video chat through IM software without any delays. This can greatly improve the quality of service of C2C e-commerce. Since service quality could be treated as an antecedent of service satisfaction [35], IM could affect customer satisfaction that is the result of a process of service evaluation by customers [3]. With real time and rich media communication functions, IM can be very effective in achieving customer satisfaction. Therefore, we propose the following hypothesis.

H3: *Instant messaging will positively affect customer satisfaction in C2C e-commerce.*

Purchase intention is defined as the consumer's intent to engage in an online exchange relationship with a web retailer [46]. Previous research has already argued that trust is a critical factor in an e-commerce transaction, and it positively affects purchase intention [38]. Trust has a direct influence on a customer's willingness to purchase [18]. In the context of an Internet shopping mall, trust is shown to influence customers' attitude and thus related to intention to use a vender and purchase intention [32]. Therefore, we propose the following hypothesis.

H4: *Trust will positively affect purchase intention in C2C e-commerce.*

Former studies on satisfaction have pointed out a positive relationship between customer satisfaction and purchase intention [4] [10]. Consumers with a high satisfaction will have a strong purchase intention to purchase or repurchase products[45]. When customer satisfaction is improved, purchase intention could also be enhanced. This also can be applied to the context of e-commerce and online shopping [9]. Thus, the following hypothesis is proposed:

H5: *Customer satisfaction will positively affect purchase intention in C2C e-commerce.*

#### IV. RESEARCH METHODOLOGY

##### A. Measure

As the model shows, in this paper, the following four constructs were involved: instant messaging, trust, customer satisfaction, and purchase intention. New measurements were developed to measure instant messaging in the context of C2C e-commerce by adapting Lee et al.[26]. For the trust construct, measures adopted from Ganesan[16] and Sako and Helper[36] were developed to fit the C2C environment of China. For the measures of customer satisfaction, we adopted the measures used in the work of Oliver [30] and modified them to make them fit for the research. For the purchase intention, we adopted the measures from Dehua et al. [12]. The questionnaires used five-point Likert scales and consisted of 16 items that measured the respondents' perceptions.

##### B. Data collection

After the instrument was completed, we conducted an

online survey by sending the link through some QQ and Wangwang user groups (QQ and Wangwang are major IM applications that have a lot of IM users in China). This questionnaire was only aimed at the users who had experiences with C2C e-commerce via IM. Most of the group members had experiences with C2C shopping via IM, and some were also sellers.

The survey had been conducted over one week, and 201 users responded to it. After being initially screened for usability and reliability, 187 responses were found to be complete and usable. On average, the number of male and female respondents was almost the same. Because young people are the most active Internet users in China [7], most of the respondents were between 20 and 30 years old.

#### V. DATA ANALYSIS

Data collected from the sample were analyzed by a two-step methodology using LISREL [2]. We first examined the validity of the constructs and then tested the structural model based on the cleansed measurement model.

##### A. Measurement model

We conducted a confirmatory factor analysis to evaluate the measurement model. In order to assess the reliability and convergent validity of our measurement model, we needed to check the factor loadings, Cronbach's  $\alpha$ , composite reliability (CR), and average variance extracted (AVE), as is shown in Table I [19]. We removed items whose loading values were lower than 0.7 [6]. Hence, IM1, TR4, CS1, and CS2 were eliminated. The Cronbach's  $\alpha$  ranged from 0.752 to 0.771, and the composite reliability of our measurement ranged from 0.811 to 0.863. These were all larger than 0.7, which means they were acceptable [19]. The AVE of our measurement ranged from 0.590 to 0.684, which was above the recommended threshold of 0.5 [15].

TABLE I  
 RESULTS OF CONVERGENT VALIDITY TESTING

Construct	Item	Factor loading	CR	AVE	Cronbach $\alpha$
Instant Messaging	IM2	0.81	0.812	0.684	0.756
	IM3	0.84			
	TR1	0.73			
Trust	TR2	0.85	0.811	0.590	0.752
	TR3	0.72			
	CS3	0.79			
Customer Satisfaction	CS4	0.73	0.815	0.595	0.757
	CS5	0.79			
	PI1	0.87			
Purchase Intention	PI2	0.78	0.863	0.678	0.771
	PI3	0.83			

Furthermore, the square root of AVE for each construct with the correlations between that construct and other constructs to test the discriminant validity are shown in Table II [15]. The square root of AVE was also greater than the correlations between it and the other constructs, which meant we could proceed to the structural model analysis.

TABLE II

Construct	IM	TR	CS	PI
IM	0.827			
TR	0.551	0.768		
CS	0.557	0.345	0.771	
PI	0.527	0.588	0.637	0.824

Note: Leading diagonal shows the square root of AVE of each variable. Others are correlations.

### B. Structural model

The structural model, including the research hypotheses and the causal paths, was examined using the cleansed measurement model. Figure 2 shows the standardized LISREL path coefficients of the research model.

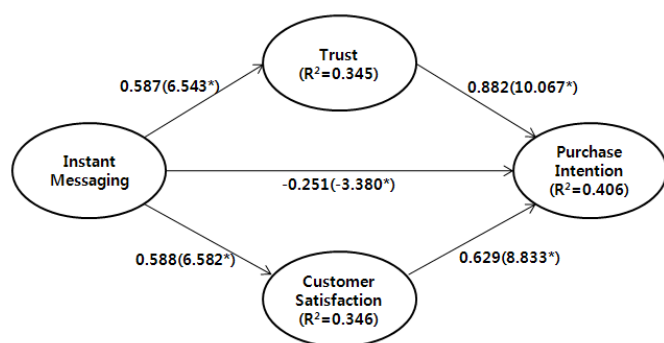


Fig. 2 LISREL Results (Note: \* significant at  $p < 0.01$ )

The Goodness of Fit Index (GFI) was 0.827 that was above the recommended threshold of 0.8 [19]. The other fit indices were all satisfactory in that the Normed Fit Index (NFI) was 0.917 and Comparative Fit Index (CFI) was 0.929. These results suggest that the structural model fitted the data adequately. Instant messaging (path coefficient=0.587,  $t$ -value=6.543) positively influenced trust and explained 34.5% of variance in trust.

It was also positively related to customer satisfaction (path coefficient=0.588,  $t$ -value=6.582) and explained a 34.6% of variance in customer satisfaction. However, instant messaging did not have a positive impact on purchase intention (path coefficient=-0.251,  $t$ -value=-3.380). Both trust (path coefficient=0.882,  $t$ -value=10.067) and customer satisfaction (path coefficient=0.629,  $t$ -value=8.833) were positively associated with purchase intention to explain 40.6% of variance in purchase intention.

### VI. IMPLICATIONS AND LIMITATIONS

Results of this study offer some implications. First of all, we developed a parsimonious research model of IM in the context of C2C e-commerce. There were a lot of previous studies on IM, but most former IM studies focused on its adoption and effect in an organizational environment [5][11][33]. And some revealed its business value in the work environment [14][1]. However, few of them addressed the role of IM in the context of e-commerce. This study introduced IM as a new construct to investigate its role in C2C e-commerce and examined how IM indirectly influences purchase intention.

Our results indicate that IM has its theoretical effects in terms of trust building and enhancing customer satisfaction. Considering that IM is widely used today, this study suggests that more business benefits of IM could be explored and more researches are needed.

Second, our research also sheds light on what factors are related to purchase intention in C2C e-commerce. One is trust that has been thought as a key element when talking about e-commerce. Especially in C2C e-commerce, since the transaction is executed between consumers, both buyers and sellers need trust from each other [24]. Consistent with the previous studies, we also proved that trust influences purchase intention. Moreover, here we linked IM to trust, and the study results suggested that trust could be positively influenced by the usage of IM. The other one is customer satisfaction, which is also proved to affect customer purchase intention in this study. This study further showed, by associating IM with customer satisfaction, that IM had a positive influence on customer satisfaction. Based on these results, we found that IM could be thought of as an indirect factor that influences purchase intention. This study provides a theoretical starting point for researchers who are interested in further studying the role of IM in the C2C e-commerce environment. There may be more factors related to IM that are worth researching in the context of C2C e-commerce.

There are also some limitations in this study. First, the respondents are only from Taobao users in China. Second, the respondent's ages range from 20 to 30 years old, and they are from some limited groups with the same interests, which means that their shopping purpose has limitations. However, considering that most Internet users are young people, this study still has validity.

### VII. CONCLUSIONS

Considering that instant messaging has been widely used in business environments, this paper investigated the impact of instant messaging on purchase intention in the context of Chinese e-commerce, particularly C2C. We reviewed some former research and proposed hypotheses based on them. Through online questionnaires, we tested the research model and showed that instant messaging positively affects trust and customer satisfaction, which in turn influences purchase intention in C2C e-commerce. Overall, this study gives a theoretical and practical insight into the usefulness of IM in a C2C e-commerce environment.

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