

The Effects of Use of Instant Messenger on Purchase Intention: The Context of Chinese C2C E-Commerce*

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In recent years, C2C e-commerce has become more and more popular in China. Chinese C2C buyers use an instant messaging more commonly during transactions compared to other countries, which seems to be an interesting phenomenon. Based on the Chinese market, this study aims to examine the role of instant messenger in the C2C e-commerce context and to find how it impacts buyers' purchase intentions. In addition to use of instant messenger, we brought in two antecedents of purchase intention-trust for vendor and customer satisfaction-to establish a theoretical research model. Through an online questionnaire survey, we tested and analyzed the research model and its related hypotheses. Structural equation modeling was used to analyze the data, and the results indicated that use of instant messenger did not directly influence purchase intention but had positive effects both on trust for vendor and customer satisfaction, which in turn influenced purchase intention. In conclusion, we discussed the research findings and suggested some implications for researchers and practitioners.

Keywords : IS Management, Use of Instant Messenger, Trust for Vendor, Customer Satisfaction, C2C, E-commerce

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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 [Kiku and Lori, 2008]. 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 [CNNIC, 2009]. The reasons are as follows. First, the C2C model provides an online transaction platform for individual buyers and sellers, which means over 300 million Internet users can freely auction products online. Because individuals are free to upload commodities on most C2C e-commerce sites of China, more sellers are gathered to provide an enormous variety of commodities, and thereby buyers can find anything they need. Second, as the Internet goes everywhere and the personal computer becomes more popular, the C2C model has received widespread support from Internet users because of the ease of interactions. Third, compared to B2C, the product price of C2C e-commerce tends to be lower. In addition, C2C sellers are more independent and more flexible than the sellers of B2C sites.

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 [Taobao, 2009]. 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 [CNNIC, 2010]. 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 [Yang and Qian, 2009]. By now, as <Table 1> shows, major C2C websites in China offer an instant messenger tool, which could be used to have enable real time chat between vendors and consumers. Instant messengers have been widely used in C2C e-commerce in China to not only obtain more information about the product, the seller, or the transaction details, but also to bargain or request services.

<Table 1> Four Main C2C Platforms and Their Adopted Instant Messengers in China

Provider	C2C platform	Instant Messenger	Description
Alibaba	Taobao.com	Wangwang	Has the largest C2C market share and made instant messenger popular in C2C e-commerce
Ebay and Tom	Eachnet.com	Yiqutong	The first C2C platform in China that currently collaborates with Ebay
Tencent	Paipai.com	QQ	The first and largest instant messenger provider in China that also currently provides a C2C platform
Baidu	Youa.com	Hi! Baidu	The largest Chinese search engine provider that now also provides a C2C platform and instant messenger

Previous studies have argued that trust is one of the most important factors that affect e-commerce transactions [Kiku and Lori, 2008]. 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. For this reason, instant messenger (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, particularly when considering that previous studies have largely focused on B2B e-commerce. In addition, IM can be an important role in increasing transaction volume because it can improve communication performance [Dennis *et al.*, 2008]. This study aims to examine the effects of instant messenger on trust and customer satisfaction, which in turn leads to the purchase intention of C2C e-commerce.

II. Literature Review

2.1 Instant messenger

IM has become a popular Internet applica-

tion around the world since it has been developed in 1996 [Pui-Lai *et al.*, 2008]. IM is an Internet-based application that provides close to real-time communication between people [Dahui *et al.*, 2005]. Faulhaber [2001] defines IM as a text-based means of near-real-time communication between customers who have registered for the service. Carmeron and Webster [2005] 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.* [2003] 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.

According to media synchronicity theory, the fit between the information transmission and information processing needs of the communication processes and the information transmission and information processing capabilities of media will influence the misuse or use of the media and in the end communication performance [Dennis *et al.*, 2008]. Dennis *et al.* [2008]

contend that convergence processes have a greater need for rapid information transmission (preparing information, transmitting, and receiving) and a lesser need for information processing (understanding the meaning of information), while the reverse is true for conveyance processes. Convergence processes benefit from synchronicity while conveyance processes do not. The theory refers to a set of media features rather than to specific media tools. For example, IM used to be described as a text medium, yet many new IM tools now provide audio, video, image sharing, and even application sharing. IM is the media that have a high synchronicity. Therefore, the use of IM can make a special communication performance between people.

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 [Dahui *et al.*, 2005]. Since IM offers features to enhance the conversational and relationship-oriented attributes required for communication technologies [Kraut *et al.*, 1999], 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 [Pui-Lai *et al.*, 2008]. For example, Cameron and Webster [2005] interviewed organizational IM users to understand how users choose IM as a communication tool and how IM is used in

<Table 2> Related Research on Instant Messaging

Research	Types	Samples	Results
Albert and David [2003]	Survey study	500 college IM users	IM is not only a social communication tool but also useful for work.
Cameron and Webster [2005]	Case study	Four firms: technology firm, technical solutions firm, telecommunications firm, and software engineering firm	IM represents another communication tool that is rapidly being adopted in organizations.
Dahui <i>et al.</i> [2005]	Survey study	400 undergraduate students	Behavioral intention to continue using IM was predicated by perceived usefulness, perceived enjoyment, and perceived critical mass. Perceived enjoyment and perceived critical mass had significant effects on the perceived usefulness of IM.
Faulhaber [2001]	Case study	AOL-Time Warner case	IM has high network effects.
Nardi <i>et al.</i> [2000]	Survey and case study	Interviews and observations from 20 IM users	This study documented the flexibility and expressivity of IM for various informal communication tasks.
Pui-Lai <i>et al.</i> [2008]	Survey study	313 employees of Taiwan companies who have already adopted IM	9 factors affecting IM adoption in organizations were proposed.

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. <Table 2> summarizes recent research related to IM.

2.2 Trust for vendor

Trust building is one of the fundamental requirements for establishing online exchange relationships [Prashant, 2009]. 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.* [1995] 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

<Table 3> Related Research on Trust

Research	Types	Samples	Results
Gefen <i>et al.</i> [2003]	Survey study	213 undergraduate and graduate business students at a leading business school in the US	The study provides evidence that online trust is built through a belief that the vendor has nothing to gain by cheating, a belief that there are safety mechanisms built into the web site, and a belief that it is easy to use.
Jarvenpaa <i>et al.</i> [2000]	Survey study	120 MBA students in Australia.	The relationship perspective of Internet consumer commerce is explored, and perceived reputation is found to be another important factor in creating consumer trust in an online merchant.
Kiku and Lori [2008]	Survey study	60 undergraduate students in a Southwestern US university.	Perception of web site quality and third party recognition influenced C2C e-commerce trust.
McKnight <i>et al.</i> [2002]	Survey study	1403 undergraduate and graduate students at three large universities.	It proposed and empirically validated measures for a multidimensional definition of trust with four high level interrelated trust constructs, comprised of 16 cross-disciplinary, literature-grounded sub constructs.
Prashant [2009]	Survey study	420 faculty members and graduate students.	Trust has a dual effect on the exchange relationship, directly as well as indirectly through its effect on attitude.
Salam <i>et al.</i> [2005]	Conceptual study	-	Trust is a complex social phenomenon reflecting technological, behavioral, social, psychological, and organizational interactions among human and nonhuman technological agents.

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 [Jarvenpaa *et al.*, 2000]. It refers the willingness to depend based on belief in ability, benevolence, and integrity [Gefen, 2002]. Generally, trust in e-commerce contains the overall trust [Swan *et al.*, 1988], benevolence, competence, and integrity of the vendor [McKnight *et al.*, 2002]. It is difficult to imagine an exchange relationship that could be developed and nurtured without trust [Salam *et al.*, 2005]. 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 [Gefen *et al.*, 2003]. Therefore, we believe that trust is a necessary element when talking about C2C e-commerce. <Table 3> summarizes recent research related to trust.

2.3 Customer satisfaction

Tse and Peter [1988] 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 [1992] 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 [Jaime, 2009]. Joan *et al.* [2002] 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.

<Table 4> Related Research on Customer Satisfaction

Research	Types	Samples	Results
Jaime [2009]	Conceptual study	-	A new satisfaction model was approached by using the latent segment models methodology and an overall satisfaction index was developed.
Joan <i>et al.</i> [2002]	Conceptual study	-	The former customer satisfaction studies were summarized, and a more detailed customer satisfaction definition was proposed.
Oliver [1992]	Survey study	125 owners contacted in shopping centers in America.	Satisfaction reflects the general affective tone of the consumption experience, appearing to equally represent static and dynamic purchase elements.
Rolph and Srin [2003]	Survey study	1211 e-retailing random customers (from an online marketing research firm list).	E-satisfaction has an impact on e-loyalty. Convenience, motivation, purchase size, trust, and perceived value were found to accentuate the impact of e-satisfaction on e-loyalty.
Tse and Peter [1988]	Conceptual study	-	Expectation and subjective disconfirmation seem to be the best conceptualizations in capturing satisfaction formation.

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 [Rolph and Srini, 2003]. 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. <Table 4> summarizes the recent customer satisfaction related research.

III. Research Model and hypotheses

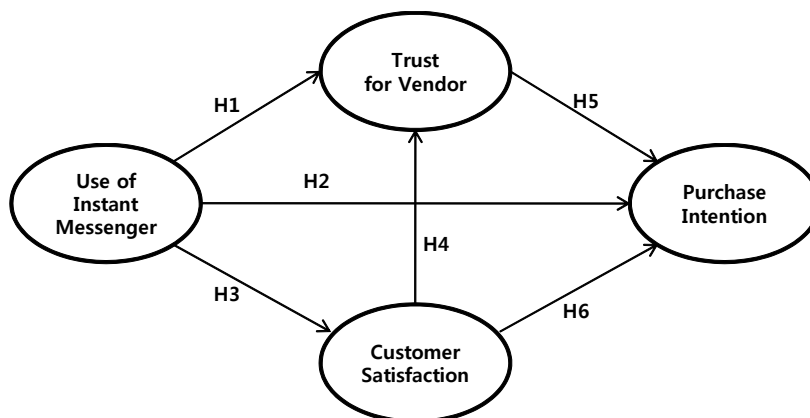
To examine the impact of IM usage, we next develop our research model and hypotheses as shown in <Figure 1>.

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 [Yaobin *et al.*, 2009]. Handy [1995, p.46] asserted that "trust needs touch." Lee *et al.* [2000] also pointed out that communication could affect trust and effectively increase cus-

tomers' 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 [Kraut, 1999]. Therefore, IM can be considered a type of touch that might play a role in enhancing trust. Thus, we propose the following hypothesis.

H1: Use of instant messenger will positively affect trust for vendor in C2C e-commerce

Doyle [2003] 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.* [2003] 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



<Figure 1> The Research Model

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: Use of instant messenger 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 [Ruyter *et al.*, 1997], IM could affect customer satisfaction that is the result of a process of service evaluation by customers [Bauer *et al.*, 2002]. With real time and rich media communication functions, IM can be very effective in achieving customer satisfaction. Therefore, we propose the following hypothesis.

H3: Use of instant messenger will positively affect customer satisfaction in C2C e-commerce

Previous studies have argued that customer satisfaction and trust have a positive relationship [e.g. Garbarino and Johnson, 1999]. Selnes [1998] considered satisfaction as a strong antecedent of trust. The feeling of satisfaction about

the relationship enables the customer to build trust. Trust is built upon the accumulation of satisfaction in past interactions. Zucker [1986] suggested that the satisfactory experience with other's past behaviors is essential in promoting trust. Gefen [2004] argued that a past satisfactory experience performs a crucial role in building trust between a vendor and clients. So we can expect that customers who have satisfactory experience in online shopping tend to form higher trust. Therefore, we propose the following hypothesis.

H4: Customer satisfaction will positively affect trust for vendor in C2C e-commerce

Purchase intention is defined as the consumer's intent to engage in an online exchange relationship with a web retailer [Zwass, 1998]. Previous research has already argued that trust is a critical factor in an e-commerce transaction, and it positively affects purchase intention [Sandy, 2003]. Trust has a direct influence on a customer's willingness to purchase [Gefen *et al.*, 2003]. 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 [Prashant, 2009]. Therefore, we propose the following hypothesis.

H5: Trust for vendor 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 [Brandy and Robertson, 2001; Cronin and Taylor, 1992].

Consumers with a high satisfaction will have a strong purchase intention to purchase or re-purchase products [Zeithaml *et al.*, 1996]. 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 [Collier and Bienstock, 2006]. Thus, the following hypothesis is proposed:

H6: Customer satisfaction will positively affect purchase intention in C2C e-commerce

IV. Research Methodology

4.1 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.* [2000]. For the trust construct, measures adopted from Ganesan [1994] and Sako and Helper [1998] 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 [1980] and modified them to make them fit for the research. For the purchase intention, we adopted the measures from Dehua *et al.* [2008]. The questionnaires used five-point Likert scales and consisted of 16 items that measured the respondents' perceptions.

4.2 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. These respondent characteristics are summarized in <Table 5>. On average, as <Table 5> shows, the number of male and female respondents was almost the same. Because young people are the most active Internet users in China [CNNIC, 2009], most of the respondents were between 20 and 30 years old.

<Table 5> Respondent Characteristics

Respondent profiles		Frequency	Percent (%)	Cumulative
Gender	Female	91	48.6	48.6
	Male	96	51.4	100.0
Age (years)	≤ 20	22	11.7	11.7
	21~30	162	86.6	98.3
	≥ 31	3	1.7	100.0
	Total	187	100.0	
	Average age	22.5		

V. Data Analysis

The research model introduced in this study was verified through data analysis carried out in accordance with a two-step approach using LISREL 8.70 based on the structural equation

model [Anderson and Gerbing, 1988]. First, the convergent validity and discriminant validity of the measurement model were identified; thereafter, a structural model based on the cleansed measurement model, whose validity was verified, was examined and used to verify the proposed hypotheses.

5.1 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 α , composite reliability (CR), and average variance extracted (AVE), as is shown in <Table 6> [Hair *et al.*, 1998]. We removed items whose loading values were lower than 0.7 [Cannon and Homburg, 2001]. Hence, IM1, TR4, CS1, and CS2 were eliminated. The Cronbach's α ranged from 0.752 to 0.771, and the composite reliability of our measurement ranged from 0.759 to 0.782. These were all larger than 0.7, which means

they were acceptable [Hair *et al.*, 1998]. The AVE of our measurement ranged from 0.510 to 0.610, which was above the recommended threshold of 0.5 [Fornell and Larcker 1981].

Discriminant validity of the constructs was further validated by comparing the χ^2 of the original CFA with its eight latent variables against other CFAs with only seven latent variables where every possible combination of two constructs was examined, thus considering every possible pairwise discriminant validity check. The χ^2 of the original CFA with its eight latent variables was significantly better than any possible union of any two latent variables [Gefen *et al.*, 2003].

In addition, we checked for possible common source bias with Harman's single-factor test (Podsakoff and Organ, 1986). For this purpose, we performed confirmatory factor analysis for the measurement model of the proposed research model and the model that included all indicators as a single latent variable, and compared two models. The result of analysis showed that the research model (normed chi-sq-

<Table 6> Results of Convergent Validity Testing

Construct	Item	Factor loading	CR	AVE	Cronbach's α
Use of Instant Messenger	IM2	0.746	0.757	0.610	0.756
	IM3	0.815			
Trust for Vendor	TR1	0.688	0.759	0.514	0.752
	TR2	0.795			
	TR3	0.663			
Customer Satisfaction	CS3	0.722	0.757	0.510	0.757
	CS4	0.671			
	CS5	0.749			
Purchase Intention	PI1	0.783	0.782	0.545	0.771
	PI2	0.704			
	PI3	0.727			

uare = 1.733) was superior to the one factor model (normed chi-square = 3.446). This analysis suggested that our data sample was likely not contaminated by common source bias.

<Table 7> Pairwise Discriminant Analysis

Model	χ^2_{df}
Original model	$\chi^2_{38} = 65.885$
Combining Purchase Intention with TR	$\chi^2_{41} = 111.17$
Combining Purchase Intention with CS	$\chi^2_{41} = 116.34$
Combining Purchase Intention with IM	$\chi^2_{41} = 115.18$
Combining Trust for Vendor with IM	$\chi^2_{41} = 112.88$
Combining Trust for Vendor with CS	$\chi^2_{41} = 115.04$
Combining Customer Satisfaction with IM	$\chi^2_{41} = 107.25$

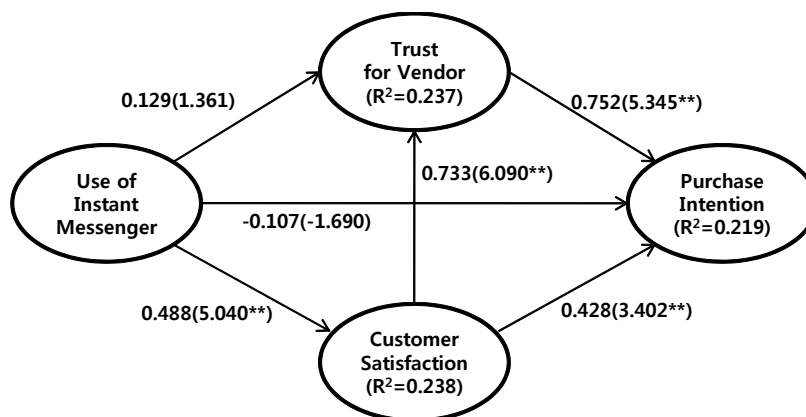
5.2 Structural Model

The structural model, including the research hypotheses and the causal paths, was exam-

ined using the cleansed measurement model. <Figure 2> shows the standardized LISREL path coefficients of the research model.

The Goodness of Fit Index (GFI) was 0.940 that was above the recommended threshold of 0.8 [Hair *et al.*, 1998]. The other fit indices were all satisfactory in that the Normed Fit Index (NFI) was 0.968 and Comparative Fit Index (CFI) was 0.986. The chi-square was 65.885, the degree of freedom was 38, and the normed chi-square was 1.733. Thus, the results of the path analysis conducted in this study can be regarded as being reliable.

These results suggest that the structural model fitted the data adequately. The use of instant messenger was positively related to customer satisfaction (path coefficient = 0.488, t-value = 5.040) and explained a 23.8% of variance in customer satisfaction. However, the use of instant messenger did not have a positive impact on trust for vendor and purchase intention. Customer satisfaction was positively related to trust for vendor (path coefficient = 0.733, t-value = 6.090) and explained a 23.7% of variance in trust for vendor. Customer satisfaction was positively related to purchase intention (path coefficient = 0.428, t-value = 3.402) and explained a 23.7% of variance in purchase intention. Trust for vendor was positively related to purchase intention (path coefficient = 0.752, t-value = 5.345) and explained a 23.7% of variance in purchase intention.



Note: * Significant at $p < 0.01$.

<Figure 2> LISREL Results

of variance in trust for vendor. Both trust for vendor (path coefficient = 0.752, t-value = 5.345) and customer satisfaction (path coefficient = 0.428, t-value = 3.402) were positively associated with purchase intention to explain 21.9% of variance in purchase intention.

VI. Discussions

This study attempts to investigate whether and how IM affects C2C e-commerce. We studied the effects of use of IM on trust for vendor and customer satisfaction and their effects on purchase intention. According to the results, all hypotheses were supported, except for H1 and H2. The main finding was that use of IM did positively affect customer satisfaction that was also proved to influence purchase intention. In other words, use of IM indirectly affects purchase intention in C2C e-commerce.

There are two questions to be discussed about this finding. First, how does IM affect customer satisfaction? As an Internet based application, IM was found to be an efficient and multifunctional communication method. What IM provides in C2C e-commerce is building a channel to enhance the interaction between sellers and buyers, thereby giving more information to increase buyers' trust toward sellers and ultimately improve transactions. For example, when a conversation via IM starts, a seller can introduce his/her products via text chat or even, more vividly, via video and voice chat; meanwhile, the buyer can ask for more information that he/she wants to know about the product. Such accumulated information and good experience through IM activities could enhance the degree of trust toward the sellers and their

products. In addition, through the usage of IM, a buyer can form a positive impression toward the seller's service quality before he/she starts to make a purchase because he/she feels IM is an additional service the seller provides. Service quality has been considered a critical factor for improving customer satisfaction [Brady and Robertson, 2001]. IM could also conveniently provide remote service without additional costs instead of using a phone, which could also enhance one's satisfaction.

H1 and H2 were not supported. IM does not independently affect purchase intention, but indirectly through only customer satisfaction. So, the other question is that 'why does IM affect purchase intention indirectly but not directly?' Hypothesis 2 was proposed according to the assumption that sellers could directly communicate with buyers to do promotions. However, most buyers are likely to talk to sellers for the purpose of getting information they want, rather than directly responding to the sellers' promotion efforts. Therefore, it might be hard to expect that the seller's promotion through IM will be successful in leading to making a purchase decision. Obviously, our study showed that this kind of promotions by IM was not useful to increase the buyers' purchase intention. Buyers can only form a purchase intention after they start to establish trust and achieve good satisfaction towards the sellers. Therefore, IM might only be considered an indirect factor of purchase intention.

Our results were based on the Chinese market, so we also need to consider some Chinese aspects. For example, as we previously mentioned, Chinese people have a habit that they like to engage in talks when purchasing, but

the telephone expenses between different areas are relatively high. Considering these cultural and socio-economical characteristics, IM, if adopted, can more easily provide a good solution to satisfy them and improve their degree of customer satisfaction. Accordingly, our results may be more suitable for the Chinese context, and it is only prudent that caution be exercised in generalizing the findings.

VII. Implications and limitations

Results of this study offer several implications for both researchers and practitioners. For researchers, 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 [Cameron and Webster, 2005; Dahui *et al.*, 2005; Pui-Lai *et al.*, 2008]. And some revealed its business value in the work environment [Faulhaber 2001; Albert and David 2003]. 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 [Kiku *et al.*, 2008]. Consistent with the previous studies, we also proved that trust influences purchase intention. 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.

Our study also showed some implications for practitioners as well. The results revealed IM's business value in the context of C2C e-commerce. However, as a direct factor that affects customer satisfaction, IM also could be useful in other business environments. Companies could utilize IM as a service tool and provide consulting services or after service via IM. IM is free and convenient, which means a low cost to set up and maintain. It is also multifunctional, and text based chat could automatically be recorded. Owing to IM's characteristic and its effect on satisfaction, we suggest that it will be beneficial for companies to use IM flexibly in communicating with customers.

For C2C site managers, similar to what we discussed, it is important to understand the

factors that could affect purchase intention to facilitate the transactions. Our results suggested that IM is an effective communication channel and can indirectly affect buyers' purchase intention. Thus, improving the service quality of IM will be a good approach to increase the transaction volume of the whole site. Therefore, C2C site managers should try to make IM more functional, more convenient to be used, and guide more buyers and sellers to use it.

For C2C participators, the results of this study encourage both C2C buyers and sellers to use IM, which can enhance their communication capability and thereby improve C2C transaction volume. As a seller, who wants to improve the buyers' purchase intention, one needs to take advantage of IM to have buyers get a good impression of oneself. A seller's operational skill of using IM will be a critical factor that could affect the buyer's purchase intention. Especially in China, where IM has been widely used in C2C e-commerce, sellers must try to keep their instant messengers available and provide good service based on IM to win buyers. We also suggest that buyers use IM as much possible. Buyers could get more information via IM so that they can buy good products and have a good transaction experience.

There are also some limitations in this study. First, the findings may have limitation in terms

of generalization because the respondents are only from Taobao users in China. So it is only prudent that caution be exercised in generalizing the findings. 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. Third, the respondents are mainly C2C buyers and do not contain sellers. Thus, the responses could be biased.

VIII. 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 customer satisfaction, which in turn influences trust for vendor and 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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〈Appendix〉 Questionnaire Items

Constructs	Items	
Use of Instant messenger	IM1	I often use instant messaging when shopping on Taobao
	IM2	It's very convenient to use instant messaging
	IM3	Instant messaging helps me know more about the products and the vendors
Trust for Vendor	TR1	The vendors from Taobao are trustworthy
	TR2	The vendors from Taobao would keep their promises and commitments
	TR3	The vendors from Taobao would care about their customers
	TR4	The vendors from Taobao are capable of doing their jobs
Customer Satisfaction	CS1	I could achieve the purpose of purchase effectively in Taobao
	CS2	I'm satisfied with the quality of goods purchased from Taobao
	CS3	I'm satisfied with the service of the vendors
	CS4	My choice to purchase from Taobao was a wise one
	CS5	Purchasing from Taobao is enjoyable
Purchase Intention	PI1	I would like to purchase on Taobao
	PI2	I expect to purchase on Taobao in the near future
	PI3	I would consider purchasing on Taobao in the future

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