HOW DO TECHNOLOGY READINESS, PLATFORM FUNCTIONALITY AND TRUST INFLUENCE C2C USER SATISFACTION?

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ABSTRACT

C2C transactions make up an important part of electronic commerce in emerging markets. A C2C platform has a better chance of sustaining profitability when customers are generally satisfied with using the website. This study proposed a conceptual model using both IS and marketing perspectives illustrating the impact of user technology readiness, perceived platform functionality and user trust on user satisfaction with top C2C platforms in China. The proposed model was validated using perception data from C2C users in popular online chat rooms and employing SEM analysis procedures. The study revealed perceived user trust a much stronger determinant of user satisfaction than perceived platform functionality. Two dimensions of user technology readiness, optimism and insecurity, had significant effects on user perceived trust and platform functionality, one positively and one negatively. The findings are discussed with implications for research and practice. The paper concludes with further research directions.

Keywords: Electronic commerce, C2C platform, technology readiness, trust, satisfaction

1. Introduction

Consumer-to-consumer (C2C) e-commerce (EC) in China has experienced almost 10 years of development and remains a mainstream choice of online shoppers in China. According to a report from iResearch [2011], almost one third of the 400 million Web users in China actually use C2C platforms. However, none of the C2C platforms in China is a charged model. The annual growth rate of C2C subscribers began to drop from 73.7% in 2009 to 46.8% in 2010, and was estimated to drop again to 40.7% in 2011 [iResearch 2011]. This decline might be partly caused by the ceiling effect. C2C businesses are also facing increasing credit crises, frauds, operational problems and cognitive problems [Chen et al. 2009; Lu et al. 2010]. Customer retention and loyalty appear to be critical for C2C models to survive and succeed in China.

Though limited in quantity, C2C e-commerce in China is currently receiving increased attention from academia. Most studies have tended to explain the C2C model success from the perspective of instrumental utility. In spite of its usefulness in understanding customers' concerns, it has tended to neglect the possible impact from user characteristics and other factors [Balasubramanian et al. 2005]. EC literature shows that quality platform services and a certain level of technology readiness (TR) from online users are both crucial to achieving the desired effect in

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online businesses [Parasuraman 2000]. A Web-based business platform is still regarded as a technology and business innovation in the eyes of many Chinese consumers. Forty-five percent of the participants in a nation-wide online survey gave up online shopping because they were "not used to" online shopping [CNNIC 2009]. This seems to imply the existence of a technology readiness problem.

Our literature review shows little research has been done incorporating user technology readiness into studying the effectiveness of the prevailing C2C platforms in China. In fact, studies using utilitarian and consumer perspectives are limited and badly needed in emerging markets [Elliott et al. 2008]. Researchers have found that satisfied customers are more likely than unsatisfied customers to stay loyal to a C2C platform they currently use. It is often more cost-effective to keep current customers [Mittal & Lassar 1998]. Therefore, it is advisable to target customers who are more likely to use and be satisfied with a company's services. We believe that TR dimensions as personality traits serve as significant antecedents in influencing user perceptions in a web environment. Further, trust is a much stronger determinant of satisfaction than platform functionality among users in China. Including TR dimensions as antecedents in a satisfaction model gives balanced attention to both technology properties and the users.

Our study is designed to investigate user perceived determinants of C2C platform satisfaction in China with user technology readiness dimensions as antecedents. Such a balanced approach should be valuable in revealing the nature of TR influences on user satisfaction toward a typical type of web platform in China. A study of this nature is helpful and timely for filling the gap in the literature and for building a solid empirical foundation to link theory to EC reality in China. This type of research should also be helpful for comparing the findings from different countries and for examining the guiding value of a theory on a world-wide scale.

To achieve the research purpose, we first discuss the relevant literature and propose our research model with hypothesized relationships. We then describe the empirical test of our research model using data from an online survey in China, present the results, discuss findings and implications for research and practice, and conclude with recommendations for further research directions.

2. Literature review

Customer satisfaction has been a hot topic in both the IS and marketing fields. The perspectives used in these two fields, however, differ. In this section we review important satisfaction literature in both research streams to lay a theoretical foundation for our research model.

2.1. Prior satisfaction literature in IS

In IS literature, user satisfaction was typically viewed as the sum of a user's attitudes toward a variety of factors of information systems [Bailey & Pearson 1983]. This viewpoint originated from Information Integration Theory [Fishbein 1967], one of the first to explore how attitudes are formed and changed through the integration of new information. As an improvement over this theory, the Theory of Reasoned Action (TRA) proposed to recognize user satisfaction as an object-based attitude [Ajzen & Fishbein 1980]. Based on this viewpoint, a major line of end-user satisfaction research in the IS field [Doll et al. 2004; McHaney et al. 1999; McHaney et al. 2002; Molla & Licker, 2001] explained satisfaction as an outcome of opinion responses to information system attributes, and focused on the effectiveness of upstream phenomena including design and implementation activities as "key drivers" affecting user satisfaction [Cheung & Lee 2009]. An influential theory model of this line was DeLone and McLean's [1992] IS success model. On the other hand, affect (as attitude) has also been theorized and validated in TAM based studies as an important predictor of intention concerning IS use [e.g., Davis et al. 1989; Karahanna et al. 1999]. Satisfaction is generally defined as a positive feeling toward fulfillment or realization of expected benefits of IS use. This line of research emphasizes the cognitive (e.g., belief) evaluation of attitudes and uses a utilitarian approach with satisfaction mostly implied.

2.2. Prior satisfaction literature in marketing

Researchers such as Hunt [1977] separated satisfaction from attitude by arguing that attitude is an emotion (e.g., pleasure), but satisfaction is an evaluation of that emotion. Oliver [1980, 1981] regarded satisfaction as conceptually distinct from attitude. He believed that satisfaction is a transient, experience-specific affect, while attitude is a relatively more enduring affect transcending all prior experiences. Tse and Wilton [1988] demonstrated that satisfaction and attitude differ in their predictive abilities. Expectation-disconfirmation theory is perhaps the most well-known satisfaction model in marketing [Oliver 1980]. According to expectation-disconfirmation theory, satisfaction is the degree to which expectations generated on previous occasions have been met. It results from a person's perception that the benefits received are equal to (or greater than) the expected benefits. Satisfaction evolves into a single construct representing the overall cognitive/affective response to product/service usage [e.g., Oliver 1999; Westbrook & Oliver 1991]. Marketing scholars have extensively researched the concept of customer satisfaction, and their studies show a positive and significant association between customer satisfaction and brand

loyalty and repurchase intention. Marketing and service fields of study theorize that customer satisfaction can be classified into two types: transaction-specific satisfaction and general overall satisfaction [Yi 1991]. Transaction-specific customer satisfaction refers to the assessment after a specific purchase experience, whereas general overall satisfaction is a combination of all previous transaction-specific feelings that should have an impact. This definition of overall satisfaction seems to coincide with Oliver's [1981] view of attitude as a relatively more enduring affect transcending all prior experiences. Jones and Suh [2000] extended this transactional orientation to explain the utilitarian nature of the relationship between a Web customer and a Web firm. They found overall satisfaction having a direct influence on repurchase intentions. This overall satisfaction perspective has influenced many satisfaction studies in various Web contexts, including ours.

2.3. Recent satisfaction literature

To respond to the need for explaining downstream phenomena – post adoption behavioral decisions and to provide a more holistic view of user satisfaction, another line of study tried to explain IS satisfaction formation by providing insights into user psychology in the IS context. The IS Continuance Model emerged integrating both IS and marketing perspectives [i.e., Bhattacherjee 2001; Bhattacherjee & Premkumar 2004]. Bhattacherjee's [2001] model posited satisfaction as the result of expectation-confirmation and cognitive beliefs (i.e., perceived usefulness), with satisfaction as an affect construct influencing one's IS continuance intention. This model was tested and validated in the EC context. Supported by the empirical data from two longitudinal studies, Bhattacherjee and Premkumar [2004] later recommended that emergent factors such as satisfaction be included in future process models of IT usage.

Several integrated models have emerged in the IS field combining views and theories from different study fields to explain the formation of satisfaction [Kohli et al. 2004; Wixom & Todd 2005; Cenfetelli et al. 2008; Gudigantala et al. 2011]. User satisfaction was found to be affected or more affected by information content, personalized services, user interface, and system value dimensions [Liang et al. 2006]; by perceived website complexity and moderated by user familiarity and online task goals [Nadkarni & Gupta 2007]; by fulfillment of user needs [Au et al. 2008]; by negative perceived performance on information-quality attributes [Cheung & Lee 2009]; and by user involvement and innovation support mechanisms [Tarafdar et al. 2010]. These studies, though mostly adopting a utilitarian approach, made an important step to add web task and user dimensions to satisfaction.

Satisfaction has been widely and successfully used in consumer and service literature, with a recent extension into e-service studies [Homburg et al., 2002; Cenfetelli et al. 2008; Pang et al. 2009]. Researchers have studied web customer satisfaction in different contexts (Deng et al. 2010; Sangareddy et al. 2009], and found satisfaction to be the degree of a customer's positive feeling for a service provider predicting three post-adoption behaviors: continuance, complaint, and recommendation [Chea & Luo 2008]. Personal attributes such as propensity and ability to contribute moderate the effect [Udo et al. 2010].

2.4. C2C e-commerce studies in China

Though still limited in quantity, C2C e-commerce success in China is currently receiving increased attention from academia. Taobao – a leading online C2C auction company in China caught immediate attention [Li et al. 2008]. Research has analyzed and compared the competition between eBay and Taobao in China [Ou & Davison 2009; Piao et al. 2010]. C2C studies have focused on the sustainability issue by exploring antecedents and determinants of continued use of C2C web platforms and services [Lu et al. 2009; Liu et al. 2010; Raunier et al. 2009]. Sensing the importance of trust in the Chinese culture, some researchers have begun to study how trust developed in online communities could boost trust in and loyalty to a C2C platform provider [Chen et al. 2009; Lu et al. 2010]. Others have explored how reputation systems could help to sustain trust in online auction markets [Li 2010; Pan 2011]. These studies, however, tended to explain C2C platform success from the perspective of instrumental utility. In spite of the usefulness of the utilitarian perspective in understanding customers' concerns, it has tended to neglect the possible impact from user characteristics and other factors [Balasubramanian et al. 2005].

Our review of the satisfaction literature reveals an obvious research gap in integrating C2C user technology readiness into a satisfaction study using both IS and marketing perspectives. At the same time, we have discovered that very limited research has been done to understand C2C platform users in China. This study should be able to make interesting contributions to the C2C literature, as well as to business practices.

3. Model and hypothesis development

We believe that the ultimate success of C2C services depends on user satisfaction as the overall affective response to the cognitive evaluations of prior web experiences [Bhattacherjee 2001] associated with both platform functionality and trustworthiness perceptions. Recent studies have identified these two factors as critical determinants of web satisfaction among existing web users [Ryan & Rao 2008]. To forge positive perceptions toward C2C platform quality, it is important to enhance user technology readiness in terms of optimism and

innovation and to reduce customer technology anxiety in terms of insecurity and discomfort, since the success of C2C business is largely in the hands of its platform users. The rest of this section develops the research model and the hypotheses based on the review of relevant IS and marketing research.

3.1. C2C platform functionality

Functionality, as a system's capability, is expected to give users what they want and to help the organization meet its strategic objectives. In information system research, the degree to which the information system functionalities match the needs of the task determines system usefulness for that task [Barkhi et al. 2008]. When fit is assumed or experienced, system functionality becomes perceived usefulness in the eyes of a user. Young and Benamati [2000] argued that a one-dimensional construct such as perceived usefulness does not fully reveal how a business web platform assists customers over the entire transaction process, including informational use, transactional use, and customer service use. Other researchers have proposed that platform functionality is the critical evidence for estimating usefulness in IS acceptance research, which directly influences user attitude [Bhattacherjee & Premkumar 2004; Cenfetelli et al. 2008].

In a web shopping environment, researchers use website functionality to refer to the delivery of web-based services to support a core good or service or a core transaction to help online customers reach their shopping goals [Cenfetelli et al. 2008]. As a website's service functionality increases, so too does the website's ability to assist customers in meeting their goals. However, only limited studies focus on a comprehensive analysis of website functionality. Kosiur's [1997] virtual value chain illustrates that websites can provide businesses with four levels of functionality: publishing (distribution of information on the company or its products); interactivity (effectiveness of marketing or sales by improving the interface with customers); transactions (facilitation of exchanges with customers); and process improvement (improvement of organizational efficiency through order fulfillment, settlement and/or workflow). This virtual value chain represents EC platform functionality as a continuum of marketing and sales capabilities where each successive level builds upon the functionality of the prior level.

While commercial websites usually provide four levels of functionality, several studies suggest that business websites provide for different levels of functionality, based on their business focus [Saban & Rau 2005]. A recent effort is Yeung and Lu's [2004] framework in the form of a two-dimensional grid for analyzing, comparing, and improving specifically the functionality of commercial Web sites. This grid classifies website functions into four types: information, communication, downloading, and transaction. Their study addresses a wide range of EC activities and provides insights into how commercial websites can differ in functionality. Since a website of a particular type can function dramatically differently from others, many studies focus on the functionalities of a particular type of website to establish metrics for website evaluation [i.e., Cenfetelli et al. 2008; Ryan & Rao 2008; Saban & Rau 2005].

C2C platforms rely on application software that can either be installed on a Web server or a desktop comprising proxy bidding tools, auction sniping tools that allow consumers to place last minute bids, e-auction listing tools showing items on a C2C platform, marketing services that display ads on behalf of sellers, and seller tools to make the listing more attractive or to make it easier for buyers to obtain access to information more quickly. Website functionality was recognized as an important dimension of e-services' quality in several studies [Sohn & Tadisina 2008; Tsang et al. 2010]. The quality of services from a C2C platform largely depends on the quality and functionality of the platform functions and tools. Using a transaction process perspective, C2C platform functionality supports the e-auction transaction process by providing content and tools for product searching and comparing, getting users started at an auction, assisting bidding to obtain dynamic pricing, settling auctions and providing post-auction follow-up [Turban et al. 2010], except for the one-price option which is no different from that of a B2C business. In line with satisfaction literature, a highly functional C2C platform provides for achieving the expected success of a C2C transaction and helps platform users fulfill their e-auction needs. Such perceived C2C platform functionality over time should lead to overall satisfaction as a general positive feeling. Therefore, we advance the following hypothesis:

> Hypothesis 1: Perceived C2C platform functionality will have a positive impact on user satisfaction with that platform.

3.2. Trust toward C2C platform

Trust toward a C2C platform is a belief. In previous research, trust is described as users' perceptions of the attributes of service providers, including the competency, integrity, and benevolence of the providers [McKnight & Chervany 2002; Deng et al. 2010]. In our model the object of interest is changed to the attributes of an online platform. In fact, a web vendor's integrity, benevolence, and ability are often revealed in its website [Gefen et al. 2003]. C2C members who perceive a C2C platform as a trustworthy place for conducting transactions are more likely to come back to the platform to sell or purchase again [Chen et al. 2009]. Trust has been confirmed in EC literature as being able to positively or negatively affect user satisfaction, customer loyalty and intentions to

continue with the web-enabled services [Cenfetelli et al. 2008; Kim et al. 2009]. Such system-specific perception has been shown to perform a mediating role between personality and behavior [Baek-Kyoo & Lim 2009; Deng et al. 2010].

Trust toward a web platform is also multidimensional. Literature shows security, risk protection, privacy protection, and system and service dependability are important aspects of this construct [Barkhi et al. 2008; Bélanger et al. 2002; Grazioli & Jarvenpaa 2000]. Web security is the extent to which an online consumer believes that a virtual store is secure [Salisbury et al. 2000]. Risk refers to a consumer's perceptions of uncertainty and the adverse consequences of engaging in an activity [Dowling & Staelin 1994]. Usual risks in the web business world cover unauthenticated access, repudiation (merchants denying payments made with the consumer's credit card), information alteration or destruction during transmission and storage, disclosure of confidential information to unauthorized parties, and exposure to fraudulent activity resulting from viruses and web attacks [Turban et al. 2010]. Risk protection is the reverse side of security assurance.

Lack of trust is identified as one of the greatest barriers inhibiting Internet transactions [Kim et al. 2004]. Despite advances in security protection associated with online shopping, research identifies several critical failure factors including unstable systems, low levels of data security, non-display of a privacy seal of approval, and "cheating" in social interactions of online transactions that ineffectively delivered trust assurances [Han & Noh 2000; Kim & Benbasat 2010]. These critical failures negatively influence the use of EC. Many online companies have designed and implemented trust-enhancing technological devices, practices, and procedures to their web platforms [Kim & Benbasat 2006]. Trust toward a C2C platform reflects a user's belief that effective institutional mechanisms are in place to facilitate transaction success on the platform [Pavlou, & Gefen 2004]. Those assurances include integrity assurance systems (enforce the integrity of the data being transmitted) (Kim and Benbasat, 2009), security assurance systems (ensure the authentication of the transacting parties and the confidentiality of electronic data) [Salisbury et al. 2000], third-party escrow services and credit card guarantees [Hu et al. 2004; Kim & Benbasat 2010], and feedback mechanisms and reputation systems [Pavlou & Gefen 2004; Pavlou & Dimoka 2006]. Privacy protection is particularly important for a C2C platform to facilitate the transfer of sensitive buyer information to the seller. The control is usually reflected in the adoption of anonymity and pseudonyms to all members and in all C2C transactions [Chen et al. 2008].

Research shows that when a customer is content with his feeling of faith in the provider, his satisfaction will be enhanced over time [Chiou & Droge 2006]. Because of the importance of a C2C platform to a C2C service provider, we have good reasons to believe that when a customer's faith in a C2C platform is enhanced, his overall satisfaction will be increased. Recent studies in IS and marketing reveal that trust belief has directly and indirectly affected a consumer's purchase decision through satisfaction with a longer term impact on e-loyalty [Kim et al. 2009; Kim & Benbasat 2010; Lu et al. 2009]. We, thus, propose the following hypothesis:

> Hypothesis 2: Perceived trust toward a C2C platform will have a positive impact on user satisfaction with that platform.

3.3. User technology readiness

The literature tells us that personality can be described as the aspects of an individual's thoughts and behaviors that are stable over time and relatively consistent across different situations [Roberts & DelVecchio 2000]. In management and marketing theory, personality differences have been regarded as important in moderating human behaviors. Online consumer literature finds personality traits posing both significant challenges as well as unexpected opportunities to online service providers in identifying loyal customers [Ranaweera et al. 2008]. The literature shows that the use of self-service technology (SST) is heavily influenced by user personality traits, since personality affects the environment people choose and the speed with which they adapt to a new technology [Pocius 1991]. Mick and Foumier [1998] argued that consumers can simultaneously exhibit positive characteristics (such as intelligence or efficacy) and negative characteristics (such as ignorance or ineptitude) concerning new technology. Parasuraman [2000] captured consumers' positive and negative mental readiness about technology in his Technology Readiness Index (TRI), a multi-item scale. He defines TR as "a propensity to embrace and use new technologies for accomplishing goals in home life and at work" (p. 308). TRI measures four dimensions of TR: optimism, innovativeness, discomfort, and insecurity. Of these dimensions, optimism and innovativeness are drivers of technological readiness, while discomfort and insecurity are inhibitors of technological readiness. Past research has shown that the four dimensions are relatively independent of each other, with each trait representing a person's openness to technology.

Optimism, according to Parasuraman, represents a positive view of technology and a belief that it offers people increased control, flexibility, and efficiency in their lives. Optimists tend to accept a given situation and are less likely to be escapists [Scheier & Carver 1987]. By the same logic, optimists are more willing to use new technologies.

Innovativeness refers to a tendency to be a technology pioneer and a thought leader. This is similar to the theory construct of personal innovativeness in IT (PIIT) in the IS research -- ‘‘the willingness of an individual to try out any new information technology’’ [Agarwal & Prasad 1998, page 206]. Various studies have shown support for including this trait in identifying technology pioneers.

Discomfort is a perceived lack of control over technology and a feeling of being overwhelmed by it. Persons scoring high on the discomfort trait perceive technology as more complex and may find SST hard to use to satisfy their own needs.

Insecurity indicates skepticism of technology and its ability to work properly. Such apprehensiveness results in individuals’ avoiding the use of computers due to their innate fear of new things. People with a strong sense of insecurity may also perceive a business web platform to be insecure and be skeptical of its performance for all the risks and dangers reported online.

Since the emergence of TRI, studies have been conducted in numerous settings [i.e., Sophonthummapharn & Tesar 2007; Victorino et al. 2009; Walczuch et al. 2007] and in different countries [i.e., Elliott et al. 2008; Matthing et al. 2006; Taylor et al. 2005], exploring the power of TRI in revealing different types of technology readiness in people or its applicability to different contexts and settings. The findings were highly varied [Liljander et al. 2006; Lin & Hsieh 2006; Yen 2005]. Based on our literature review, no study has been done examining types of technology readiness among C2C platform users in China using Parasuraman’s TRI scale.

Researchers believe that personality often serves as an antecedent of perception that helps to determine behavioral intentions [Raja et al. 2004]. Our task is to discover how TR dimensions relate to C2C platform user perceptions in China. Based on the identified TR traits, a technologically optimistic person is more likely to assume a more positive outlook about his or her chances of success. Therefore, he or she tends to perceive a self-service technology as being functional and useful and perceives a web innovation to be more trustworthy, since he or she worries less, by nature, about possible negative outcomes in an unknown situation [Walczuch et al. 2007]. We, thus, propose that

> Hypothesis 3a: A technology readiness driver in terms of perceived optimism toward SST will have a positive impact on user perceived C2C platform functionality in China.
>
> Hypothesis 3b: A technology readiness driver in terms of perceived optimism toward SST will have a positive impact on user perceived trust toward a C2C platform in China.

Studies in management and psychology [Scheier et al. 1987; Agarwal & Prasad 1998] repeatedly show that a highly innovative person tends to be open-minded and exhibits higher willingness to try out new information technology. A highly innovative person often assumes higher confidence in his or her capability. Such an attitude provides an upper hand in handling uncertainties in many situations. He or she tends to have a positive impression of functionality, in general, even when the web application’s potential value is uncertain and the benefits not obvious [Walczuch et al. 2007]. Such a technology pioneer, by disposition, is a risk-taker, curious about many things with little anxiety toward a Web innovation. Such a personality trait enables one to more quickly trust and embrace a valuable invention [Thatcher et al. 2007]. Thus, we make the following hypotheses:

> Hypothesis 4a: A technology readiness driver in terms of perceived innovativeness toward SST will have a positive impact on user perceived C2C platform functionality in China.
>
> Hypothesis 4b: A technology readiness driver in terms of perceived innovativeness toward SST will have a positive impact on user perceived trust toward a C2C platform in China.

In contrast, an uneasy person who feels uncomfortable in an unknown technology environment tends to get overwhelmed by unfamiliar functions and tools. A strong sense of lacking control limits his or her capability to deal with uncertainties and leads to over-estimation of the complexity of the website attributes and functions [Nadkarni & Gupta 2007]. Such a high level of anxiety can lead to skepticism, and thus, exert a negative effect on his or her perception of a website’s performance. A strong sense of discomfort also leads to distrustfulness of the technology [Thatcher et al. 2007]. This can result in suspicion of any Web innovation. We, thus, propose the following hypotheses:

> Hypothesis 5a: A technology readiness inhibitor in terms of perceived discomfort toward SST will have a negative impact on user perceived C2C platform functionality in China.
>
> Hypothesis 5b: A technology readiness inhibitor in terms of perceived discomfort toward SST will have a negative impact on user perceived trust toward a C2C platform in China.

A person lacking a sense of security in a technology environment may avoid the use of a Web innovation due to an innate fear of technology. Studies in management and psychology [Lin & Hsieh, 2006; Walczuch et al. 2007] show that people with such a personality trait tend to be skeptical of the performance of a Web innovation and underestimate its functionality and usefulness; they could easily become apprehensive of the risks and dangers

reported online and, in turn, underestimate the trustworthiness of a Web platform. We, thus, posit these two hypotheses:

Hypothesis 6a: A technology readiness inhibitor in terms of perceived insecurity toward SST will have a negative impact on user perceived C2C platform functionality in China.

Hypothesis 6b: A technology readiness inhibitor in terms of perceived insecurity toward SST will have a negative impact on user perceived trust toward a C2C platform in China.

Our theoretical model integrating the elements from the above research hypotheses is shown in Figure 1. The next section describes the methodology used for testing this model.

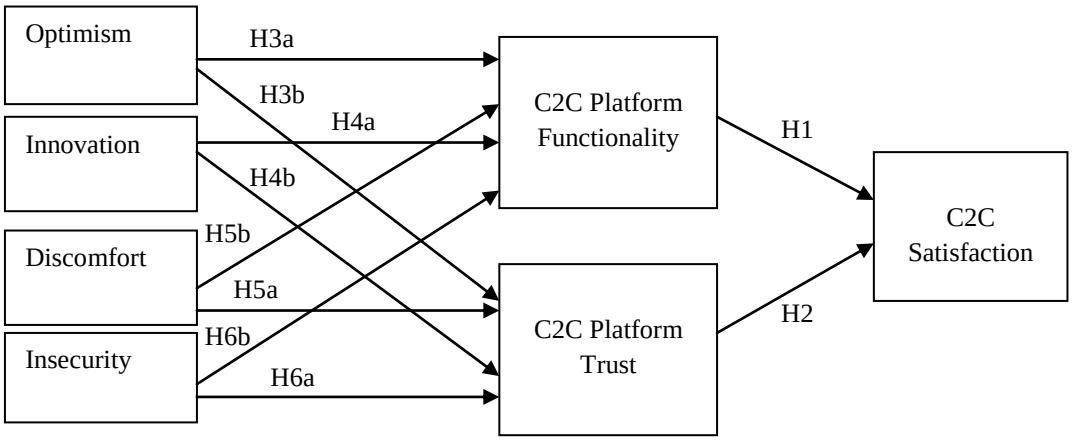


Figure 1: Operational Research Model

4. Methodology

4.1. Sample

The sample for this study was made up of users of the top three C2C platform providers in China – Taobao.com, Eachnet.com, and Paipai.com [CNNIC 2009]. A C2C platform is a virtual market mechanism that uses a competitive process by which a seller solicits consecutive bids from buyers (forward auctions) or a buyer solicits bids from sellers (reverse auctions), with prices determined dynamically by the bids [Turban et al. 2010]. Taobao.com has been the number one C2C platform and the barometer of EC development in China. Their registered users reached 140 million, well over one fourth of the entire web population in 2009. Eachnet.com, known as the eBay of China, was China's very first C2C platform and is still a top C2C platform in current China. Paipai.com is under the flag of QQ.com, the largest online social networking provider in China. Despite being the youngest of the three, Paipai's market penetration rate was over 10% in 2009. Their online customers are mostly in Guangzhou and nearby regions, while Taobao and EachNet's users are located mostly in the Yangtze River Delta Economic Region including Hangzhou and Shanghai. Users of these three C2C platforms comprised over 90% of the C2C population in China [CNNIC 2009].

4.2. Instrument

TR was assessed using the simplified TRI from Parasuraman and Rockbridge Associates, Inc. This shortened version contains two items on optimism (1, 3), three items on innovation (5, 7, 9), three items on insecurity (2, 4, 6), and two items on discomfort (8, 10) as shown in Appendix A. The reason for using this short version is our concern for the large number of items in the survey questionnaire. The length of the questionnaire might present challenges to scale administration and result in a decreased response rate or increased inaccuracy due to response fatigue and agreement bias [Barnhart & Ratchford 2007]. The simplified TRI was translated into Chinese and then back-translated into English by a different person. A pilot study was then conducted in a university marketing class in China for identification of obvious errors in content and expression. The items on C2C platform --Functionality, Trust, and Satisfaction -- were adapted from the E-auction Web Assessment Model –EWAM [Lu et al. 2009], for evaluating phases of an e-auction transaction using a C2C website. A five-point Likert scale was employed for all the structured questions, with end-point anchors of Strongly Disagree (1) to Strongly Agree (5).

4.3. Data collection

We used an online survey for data collection from a devoted website (http://www.zhijizhibi.com/). The survey instrument was designed in a way that each survey participant had to save the answer to a survey question before proceeding to the next. To attract C2C users to our survey, we hired an investigator to send invitations in the virtual

chat rooms provided by http://bbs.qq.com/ and by http://www.ZUCC.edu respectively on a regular basis. Communications in online chat rooms, virtual communities, and social networking websites are having a great impact on the use patterns and shopping habits of online users in China. Major C2C websites in China are focusing on increasing their customer base by converting members of their virtual communities into C2C buyers and sellers [Lu et al. 2010].

Monetary incentives such as a chance to win a ¥20 prepaid calling card (100 chances) and to win five e-dollars for shopping at www.QQ.com (100 chances) were offered for completing the online survey. Twelve hundred invitations were distributed in these chat rooms in 2009 (02/01/2009-03/31/2009), and 259 chat room users participated in our survey, securing a return rate of 21%. Out of concern for the sample size, this online survey was reopened in the same period of 2010. Following the same procedures for data collection, 289 data entries were secured, representing a return rate of 24%. The two samples were compared using t tests on the variable means and no statistically significant differences were identified. After deleting the irregular data entries signified with all "1s" or all "5s", we obtained 512 valid data entries for data analysis.

4.4. Data analysis

The empirical data were first analyzed using SPSS 18.0 for Windows and obtaining common descriptive statistics such as frequency and percentage to describe the demographic characteristics of the respondents. Cronbach alpha was used to ensure that variables in each construct were internally consistent. Exploratory factor analyses were employed to validate the dimensions of TR and C2C platform functionality. Confirmatory Factor Analysis (CFA) procedures were also used to confirm the exploratory findings. AMOS 18.0 for Windows was selected for data analysis because of its updated graphical approach to model testing. Structural equation modeling (SEM) procedures then followed to test the proposed framework and the hypothesized relationships. This last step allowed us to observe whether the conceptual framework provides an acceptable fit to the empirical data. Important results are reported in the next section.

5. Results

Descriptive statistics (Table 1) show that the sample represented experienced C2C users. The majority of respondents were in the age range of 20-30. Over eighty percent of the participants had a college education. Eighty-eight percent of the participants were pure buyers. Most were frequent Taobao users. This sample, to a substantial extent, reflects the current features of the C2C population in China as reported by CNNIC -- with the largest component under the age of 30 and with a college education [CNNIC 2009].

Table 1 Demographic Statistics of Respondent Characteristics (N=512)

Variable		Count	%
Age	Up to 20	50	9.8
	21 - 30	430	84
	31 - 40	25	5
	41 - 50	7	1.2
Gender	Female	239	46.7
	Male	273	53.3
Length of Use	One year	146	67
	Two year	113	22
	Three year	84	16
Education	High School	31	6.1
	College or university	424	82.8
	Graduate or above	57	11.1
C2C Platform	Taobao.com	449	87.7
	Paipai.com	34	6.6
	Eachnet.com	8	1.6
	Others	21	4.1
Purpose of Use	Buying	452	88.3
	Selling	60	11.7

Scale reliability for the TR variables results in a Cronbach alpha value of 0.74, which meets the criterion set by Nunnally [1978]. We also performed Cronbach alpha tests on all the model constructs. Acceptable scale reliability

was achieved for all the constructs in our operational model. Important descriptive and internal reliability values are displayed in Table 2.

We ran an exploratory factor analysis over the TR and C2C platform Functionality variables, respectively, using principal components extraction with varimax rotation. The eigan value only identified three TR factors – Optimism (TR1, TR3), Insecurity (TR2, TR4, TR6), and Innovation (TR5, TR7, TR9). Items on Discomfort (TR8, TR10)cross-loaded heavily with the other TR factors. When the two discomfort variables were dropped from the list, the first three factors remained intact. The eigan value identified only two factors of C2C platform Functionality – before deal (F1, F2, F3, F4, F5, F6, F6a, F7, F8) and after deal (F9, F10, F11, F12). When a fixed number of factors for extraction was used, three factors emerged – before auction (F1, F2, F3, F4, F5), during auction (F6, F6a, F7, F8), and after auction (F9, F10, F11, F12).

5.1. Validation of model constructs

We first used AMOS Graphics 18 to test for multivariate normality. After the CFA measurement model for technology readiness was created, Mardia's multivariate curtosis value was examined. Bollen-Stine bootstrap with 500 iterations was performed to take care of the non-normality issue. Comparing the threshold index values in Table 3, most model fit indexes indicate an acceptable model fit (RMR=.04, GFI=.953, AGFI=.899, NFI=.899, IFI=.909, CFI=.908). The chi square divided by degree of freedom value is a little higher than the criterion of less than or equal to 3. With a sample size of over 500, this index value should not have much impact on the nature of the model fit.

We then empirically assessed convergent validity by examining the factor loadings. All the loadings exceed 0.40, which conforms to the requirement for a major element in a construct [Byrne 2010]. All the indicators loaded more strongly on their corresponding construct than on any of the others in the model. Evidence of convergent and discriminant validity of the TR measurement model is shown in the empirical data.

We also examined the multivariate normality for the measurement model of C2C platform functionality. Mardia's value exceeds the acceptable level indicating the abnormal distribution of the empirical data. As a control, bootstrap procedures were run on 500 samples using the ML estimator, with default bias-corrected confidence intervals set at the 90% level [Byrne 2010]. The measurement model was accepted, and the SEM procedures were continued for model testing. We empirically assessed convergent validity by examining the factor loadings. Individual item reliability was evidenced in the empirical data, since all the loadings exceed 0.50. This is a second order construct comprising pre-auction, mid-auction and post-auction components. The cross-construct correlation coefficient values are below the acceptable level as suggested by Kline [2010], except the one between pre-auction and mid-auction components (.88). In short, these two key components of C2C platform functionality are closely related and mutually confirming. This echoes the findings in the previous exploratory factor analysis in SPSS.

Table 2: Descriptives and Internal Reliability

Variable	Mean	Median	Mode	Agree or Above (%)	Cronbach Alpha
Satisfaction1	3.58	4	4	58.7	.82
Satisfaction2	3.60	4	4	59.9	
Satisfaction3	3.62	4	4	62.6	
Pre-Function1	3.49	4	4	53	.77
Pre-Function2	3.56	4	4	57.7	
Pre-Function3	3.53	4	4	53	
Pre-Function4	3.45	4	4	54.9	
Pre-Function5	3.45	4	4	51	
Mid-Function6	3.46	3	3	48.6	.68
Mid-Function6a	3.87	4	4	79.1	
Mid-Function7	3.64	4	4	62.6	
Mid-Function8	3.47	4	4	52.8	
Post-Function9	3.64	4	4	62.3	.76
Post-Function10	3.49	4	4	51	
Post-Function11	3.56	4	4	56.1	
Post-Function12	3.58	4	4	59.3	
Trust1	3.06	3	3	35.2	.76
Trust2	3.18	3	3	38.5	
Trust3	3.63	4	4	62.3	
Trust4	3.38	3	4	49.4	

Trust5	3.19	3	4	40.7	
Optimism1	3.82	4	4	71.3	.66
Optimism2	3.65	4	4	61.9	
Insecurity1	3.53	4	4	57.1	.60
Insecurity2	3.06	3	3	35.2	
Insequrity3	3.63	4	4	62.3	
Innovative1	3.18	3	3	38.5	.72
Innovative2	3.38	3	4	49.4	
Innovative3	3.19	3	4	40.7	

Table 3: Model Fit threshold Index Value[1]

Model Fit Indexes	Threshold Value
Chi Square/df	<=3
RMR (Root Mean-square Risidual)	<=.05
GFI (Goodness of Fit Index)	>=.90
AGFI (Adjusted Goodness of Fit Index)	>=.80
NFI (Normal Fit Index)	>=.90
TLI (Tucker-Lewis Index)	>=.90
IFI (Incremental Index of Fit)	>=.90
CFI (Comparative Fit Index)	>=.90
RMSEA (Root Mean Square Error Of Approximation)	<=.08

[1]: From Barbara M. Byrne's Structual Equation Modeling with AMOS: Base Concepts, Applications, and Programming, 2ed. (2010)

We then checked the model fit. Besides the usual measures to assess model fit, TLI (equivalent to the non-normed fit index) and RMSEA were also selected. These measures revealed a good model fit (Chi Square/df=2.828, RMR=.024, GFI=.952, AGFI= .927, IFI= .945, TLI= .928, CFI = .944, RMSEA= .060). All the items are variables of functionality.

5.2. Confirmative factor analysis (CFA)

A CFA measurement model was created to check the convergent and discriminant validity and the fit of the proposed model. Mardia's coefficient of multivariate curtosis and the critical ratio indicate obvious multivariate non-normality of the data distribution. Six prominent outliers were identified and deleted based on Mahalanobis d squared values.

Each construct in this overall CFA model was allowed to correlate freely with every other construct but with no causal relationships specified between the latent constructs. Convergent validity is demonstrated when relevant items are used to measure the same construct. We empirically assessed convergent validity by examining the maximum likelihood factor loading estimates. Discriminant validity was determined when indicators loaded more strongly on their corresponding construct than on other constructs in the research model [Chin 1998]. The measurement CFA procedure results indicate acceptable convergent and discriminant validity. The specific results are displayed in Table 4.

As our data were non-normal, bootstrap procedures for ML estimator were used with 500 iterations. When we included the three TR components, the structural model had a poor fit. After deleting the component of Innovation which did not seem to have any relationships with other constructs, the model fit improved with the overall model fit being acceptable (Chi Square/DF=2.33, RMR= .027, GFI= .901, IFI= .911, TLI= .898, CFI= .910, RMSEA= .051).

5.3. The structural path model

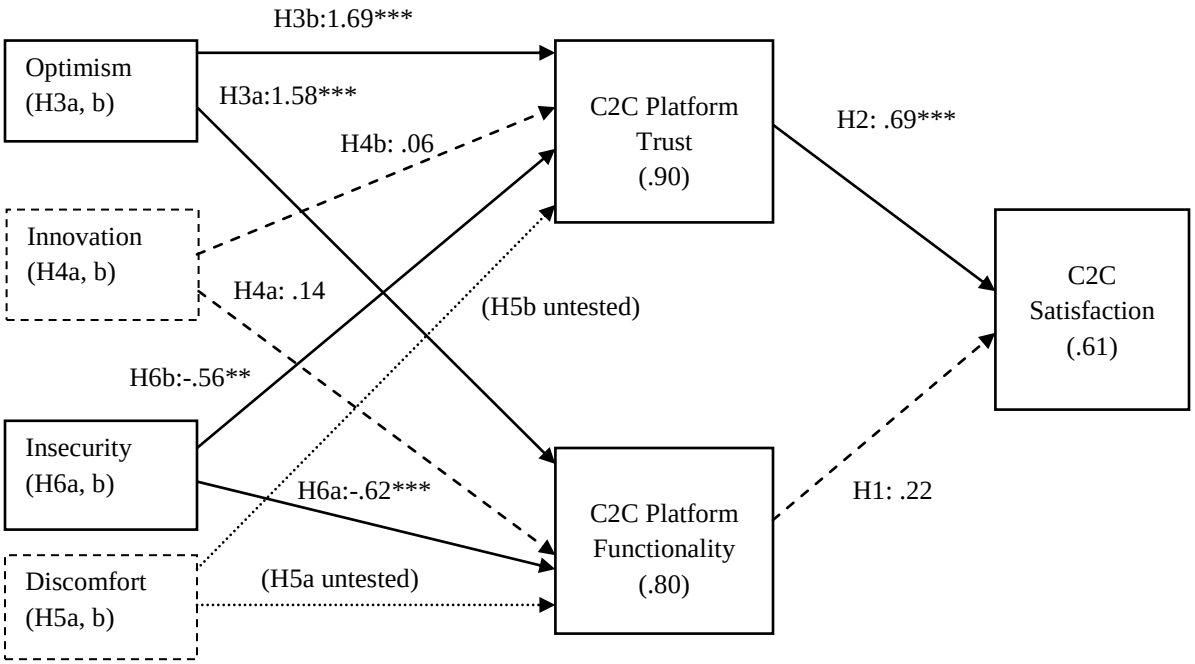
To test the operational model, a structural model was then created to examine the hypothesized causal paths among the constructs by performing a simultaneous test. The goodness of fit indices met the usual criteria of being a "good" fit, as all the model fit index values are well above the 0.85 cutoff point for model rejection [Bentler & Bonett 1980]. Thus, we believe the empirical data supports the predicted directions (Chi Square/df=2.504, RMR=.028, GFI=.899, IFI= .902, TLI= .888, CFI = .901, RMSEA= .055).

Given that the model fit is adequate, it is appropriate to test individual hypotheses related to each path on the model. Maximum Likelihood Estimates in the form of regression weights and the related P values were examined. These tests determine whether the coefficient associated with the tested path is significantly different from zero. Figure 2 displays the revised model supported by the empirical data. A large variance in C2C platform Trust (0.90) was collectively explained by the TR components of optimism and insecurity. Similarly, a large variance in C2C platform functionality (0.80) was also explained by optimism and insecurity. The anticipated determinants of C2C

platform functionality and trust had strong direct impacts on perceived satisfaction and collectively explained 61% of its variance.

Table 4 – Results of Convergent and Discriminant Validity

Variable	Intention	Satisfaction	Functionality	Trust	Optimism	Insecurity
Satisfaction1	.414	**.762**	.543	.579	.436	.277
Satisfaction2	.442	**.820**	.580	.619	.466	.293
Satisfaction3	.409	**.758**	.536	.572	.431	.263
Pre-Function1	.220	.335	**.530**	.404	.253	.175
Pre-Function2	.270	.412	**.651**	.497	.311	.215
Pre-Function3	.272	.414	**.654**	.499	.313	.216
Pre-Function4	.259	.394	**.624**	.476	.298	.206
Pre-Function5	.283	.431	**.682**	.520	.326	.225
Function6	.260	.395	**.582**	.477	.299	.207
Function6a	.258	.393	**.579**	.475	.297	.206
Function7	.284	.432	**.635**	.521	.326	.226
Function8	.252	.383	**.564**	.463	.290	.200
Function9	.217	.330	**.558**	.398	.249	.172
Function10	.290	.441	**.746**	.532	.333	.230
Function11	.295	.449	**.759**	.542	.339	.235
Function12	.264	.402	**.680**	.485	.304	.210
Trust1	.274	.448	.507	**.593**	.330	.277
Trust2	.261	.426	.482	**.565**	.314	.264
Trust3	.276	.450	.509	**.597**	.332	.279
Trust4	.268	.437	.494	**.579**	.322	.270
Trust5	.306	.500	.465	**.662**	.314	.309
Optimism1	.364	.416	.392	.407	**.733**	.333
Optimism2	.335	.384	.361	.375	**.675**	.307
Insecurity1	.178	.277	.257	.324	.316	**.695**
Insecurity2	.120	.296	.173	.218	.212	**.467**
Insequrity3	.151	.273	.217	.275	.267	**.588**



Notes: Only significant relationships are displayed. Numbers represent path coefficients.

* significant at $p < 0.05$.
** significant at $p < 0.01$.
*** significant at $p < 0.001$.
Variance explained in dependent variables is shown in parentheses.

Figure 2: Revised Model Supported by the Empirical Data

6. Discussion

6.1. Findings

Our research hypotheses and the relevant findings are listed in Table 5. The SEM procedures using Bollen-Stine bootstrap revealed a positive but insignificant causal relationship from perceived C2C platform functionality to perceived satisfaction (.22, p =.126). Therefore, Hypothesis 1 was not supported by the empirical data. This weak positive relationship seems to imply that our respondents did not perceive the C2C platform functionality in providing C2C information services, tools, and customer services a dominating determinant of their satisfaction with the chosen platform. This finding is contrary to Tsang, Lai, and Law's [2010] finding on website functionality among users of online travel agencies. This result may partly be attributed to the possibility that many respondents may not be sufficiently familiar with some listed C2C platform functions to give a definite response. A closer examination of the relevant responses reveals that the averages on C2C platform functionality Items 1, 4, 5, 6, 8, 10 are below the cut-off point for a positive agreement (<3.5). Thirty-five to forty percent of the participants chose a neutral position on these items. The percentage of neutral responses to Item 6 (asking for the effectiveness of bidding agents) was even higher (45%). Evidence shows that C2C users in China used the one-price option only or more often, thus, treating an auction portal similar to an online shopping mall [Ou & Davison 2009].

A strong positive causal relationship was found between trust toward a C2C platform and user perceived satisfaction (.69, $p < .001$). Thus, Hypothesis 2 is supported by the empirical data. This finding also supports the relevant finding in a previous study [Lu et al. 2009]. What is worthy of our attention is that trust toward a C2C platform explained user perceived satisfaction much more effectively than functionality did in our study. Western EC literature generally believes that functional concerns are more important than trust concerns among web users [Barkhi et al. 2008; Cenfetelli et al. 2008; Ryan & Rao 2008]. Recent studies of C2C online businesses in China claimed trust toward platform providers and toward C2C members critical to C2C platform loyalty [Chen et al. 2009; Lu et al. 2010]. However, those studies did not compare the importance of trust with that of platform functionality. It is possible that increasing reports of web frauds have become a bigger concern among experienced young users. Close examination of the input data reveals that though 40 to 50 percent of the respondents scored positively on all the trust items, over 30 percent were unsure of the web platform capability in ensuring user trust. The participants'

special attention to security and privacy protection may trace back to Chinese cultural roots in collectivism represented by a high level of uncertainty avoidance and a strong need for safety and stability. Findings in a mobile commerce study by Kao [2009] and a study of national cultural values on acceptance of EC in China by Yoon [2009] both discovered a strong effect of uncertainty avoidance on trust impact toward intentions to use. The much stronger role played by trust in our study appears to provide additional support to this culture-imperative view.

Our empirical data did not reveal the same four TR dimensions as expected. However, both driver dimensions – optimism and innovativeness – and one inhibitor – insecurity were identified. Optimism was a significant antecedent with extremely strong and positive effects on both perceived C2C platform functionality (1.26, $p < .001$) and trust (1.28, $p < .001$) constructs. Hypotheses 3a and 3b are, therefore, supported. In other words, a technologically optimistic user tends to perceive a C2C platform as highly functional and trustworthy. The mean score on optimism in our study was 3.725, higher than that reported in a previous study among Chinese students [Elliott et al. 2008], but both samples appeared to be optimistic. As a group of frequent users of online chat rooms and C2C platforms, their optimistic nature was within our expectation.

Contrary to our expectation, innovativeness did not have a significant impact on perceived C2C platform functionality (.14, $p = .173$) or trust (.06, $p = .554$). Hypotheses 4a and 4b were rejected. One possible explanation may be that C2C platforms are no longer considered an innovation in the eyes of the innovative respondents. Innovative people in nature resemble the "explore" segment suggested by Parasuraman [2000]. They tend to be more critical towards technology since they are aware of the newest developments and possibilities. When the novelty effect diminishes, for all its functionality and trust assurance mechanisms, a C2C platform may not fulfill their higher demands for innovation any longer. Additionally, our respondents generally scored low on all innovativeness items (Mean = 3.25), and over half of them did not believe that they were innovative. The characteristics as shown in our sample are more of early adopters versus innovators as described by Rogers [1995]. Elliott, Meng and Hall's study [2008] revealed a lower mean on innovativeness (3.04) among Chinese students than that among their American counterpart. It is possible that the uncertainty avoidance in the Chinese culture more or less affects the level of perceived innovativeness among its people.

Since discomfort was unidentified in our factor analysis test, Hypotheses 5a and 5b were left untested. Insecurity, however, has a clear negative impact on trust toward C2C platform (-.51, $p < .01$) and on platform functionality (-.59, $p < .001$). Hypotheses 6a and 6b are then supported. The findings illustrate that when respondents felt insecure in a general technology environment, the less likely they found a particular C2C platform to be functional and trustworthy. This finding logically supports the prediction by Parasuraman (2000) that a feeling of insecurity in the technology would drive the person to distrust self-service technology and be skeptical about its ability to work properly. This finding is also partially supported by other TRI studies [Walczuch et al. 2007].

We then examined the input on the Insecurity variables one by one and found high mean and mode values on two variables (M=3.52, Mode=4 for TR2; M=3.62 and Mode=4 for TR6). These two variables refer to the concerns that the information sent over the Internet might not get to the right place and would be seen by unwanted third parties. Nevertheless, the mean Insecurity was 3.41 in our study, a level lower than 3.51 in Elliott, Meng and Hall's study [2008]. Obviously the C2C platform users in online chat rooms appeared to be more confident in the technology environment.

Both optimism and insecurity collectively explained 90% of the variance in trust toward a C2C platform and 80% of the variance in C2C platform functionality in our study. The evidence is strong that these two TR dimensions served as important antecedents in our research model. While the former influenced C2C platform related perceptions positively, the latter had a strong negative impact. In other words, the sense of being insecure in the technology environment could be strong even among optimistic users.

The empirical data in our study clearly supports the notion that technology readiness as personality traits serves as an antecedent of perceptions which help to determine behavioral intentions [Raja et al. 2004]. Our study findings seem to conclude that in China optimistic C2C platform users might still have strong security concerns. Those users tended to base their satisfaction on perceived trust toward C2C platforms rather than perceived platform functionality.

Table 5: Results of Hypotheses Testing

Hypotheses	Results
H1: Perceived C2C platform functionality will have a positive impact on user perceived satisfaction with that platform.	Rejected.
H2: Perceived trust toward a C2C platform will have a positive impact on user perceived satisfaction with that platform.	Supported.

H3a: A technology readiness driver in terms of perceived optimism toward SST will have a positive impact on user perceived C2C platform functionality in China.	Supported.
H3b: A technology readiness driver in terms of perceived optimism toward SST will have a positive impact on user perceived trust toward a C2C platform in China.	Supported.
H4a: A technology readiness driver in terms of perceived innovativeness toward SST will have a positive impact on user perceived C2C platform functionality in China.	Rejected.
H4b: A technology readiness driver in terms of perceived Innovativeness toward SST will have a positive impact on user perceived trust toward a C2C platform in China.	Rejected.
H5a: A technology readiness inhibitor in terms of perceived discomfort toward SST will have a negative impact on user perceived C2C platform functionality in China.	Untested.
H5b: A technology readiness inhibitor in terms of perceived discomfort toward SST will have a negative impact on user perceived trust toward a C2C platform in China.	Untested.
H6a: A technology readiness inhibitor in terms of perceived insecurity toward SST will have a negative impact on user perceived C2C platform functionality in China.	Supported.
H6b: A technology readiness inhibitor in terms of perceived insecurity toward SST will have a negative impact on user perceived trust toward a C2C platform in China.	Supported.

6.2. Theoretical implications

Based on our literature review, our study was an initial effort incorporating technology readiness dimensions as antecedents in a satisfaction model and testing the model among actual C2C platform users in China. This presents a holistic approach which not only stresses the role of the target technology properties but, also, that of the users. Our study supports that technology readiness dimensions as personality traits serve as significant antecedents in determining user perceptions in a web environment. Further, trust is a much stronger determinant of satisfaction toward C2C websites than platform functionality among users from online chat rooms in China. This implies that even the commonly accepted determinants of satisfaction may vary in their importance when they are studied simultaneously with user technology readiness in a specific context.

Assessing and predicting the likelihood of using self-service technology is a complex issue. Our study did not reveal all the four TR dimensions as predicted by Parasuraman [2000]. The adoption of the simplified form, sample selection, and different cultural setting may collectively account for this result. In comparison with merely testing the fitness of the TR dimensions in another culture [Elliott et al. 2008], our model is more valuable in revealing the nature of TR influences on user satisfaction toward a typical type of web platform. Our empirical data has provided positive insight into the relative importance of two TR predictors – optimism and insecurity – and their effects on platform satisfaction via trust and functionality among C2C users in China. The big variances in trust and functionality and the overall explanatory power of our model also reveal the importance of studying TR dimensions and the connections to user perceptions in an emerging market with a different cultural environment.

6.3. Practical implications

Our study has important implications for C2C platform providers and technical experts in China. An in-depth study of user perceptions of platform services combined with a study of user technology readiness in China is timely for managers to comprehend the overall level of user readiness to interact with their web-based goods and services, to explore specific user preferences concerning self-service technology and service quality, and to enhance understanding of the relationships between user personality traits and user perceptions. Web service designers can, therefore, adapt strategies and programs to recommend web services for different levels of technology readiness and design types of support to assist those having difficulties with web-based technology or service. Understanding user technology readiness can also help C2C platform and service designers to create useful educational programs and online tutorials to make the C2C transaction experience a more enjoyable and secure one.

This study also reveals that in the eyes of C2C platform users in online chat rooms, trust toward a C2C platform is a strong predictor of C2C satisfaction. The descriptives in our study revealed that the majority of the respondents doubted the availability of security mechanisms at the C2C platform to protect customer interests, doubted the existence of means to report fraudulent behavior, and doubted if the C2C platform used was, on the whole, trustworthy. Further, the comparatively higher level of insecurity even among more optimistic users exerted a significant negative impact on trust toward a C2C platform. It is, thus, critical that C2C service providers and technical consultants play an essential role in ensuring platform security protection for increasing user trust.

C2C platform providers should put more emphasis on web platform and service improvement as well. Despite the fact that C2C platform functionality failed to play a significant role in determining platform satisfaction in our sample, the construct variables were designed to facilitate evaluation of the C2C platform services in assisting the online business process. Perceptions in our study yielded information as to where website improvements were needed, which should be useful to providers of the C2C platform under study: the information collected in the profile section might be inappropriate; the customer complaints and return-of-goods policies were not clearly explained; feedback provided online was not as informative and helpful as expected; the use of the bidding agents and tools might not be effective; various services were not well integrated; and customer support needed more ready access.

7. Future research directions

While discussing the implications of our study findings, it is important to remember that some unidentified relationships and deleted variables, for example, innovativeness and discomfort as TR dimensions, should be treated with caution until replicated. Meanwhile, it is important to acknowledge the following limitations: first, all the survey participants in our study were solicited from popular online chat rooms instead of using random sampling procedures, with non-response bias data unavailable. The findings and the respondent characteristics only apply to those using both online chat rooms and C2C platforms. Hopefully, the size (over 500) has somewhat helped to alleviate the possible bias caused by the sample. Second, the web design factor (ease of use in IS literature) was not included in this study as a delimitation. To understand how C2C platform users felt about platform functions in serving the entire online transaction process and in ensuring platform trustworthiness, only platform functionality and trust were included. Third, though three C2C platforms were reported as frequented by the respondents, the majority of the participants were taobao.com users. The findings, thus, could be more or less affected by the perceptions of Taobao users. Fourth, attitude instead of actual C2C behavior was investigated. Since the emphasis of our research model is on explaining C2C platform satisfaction, the research design should be acceptable. Further, all the measures were self reported by the same sample, and both the independent and dependent variables were measured at the same time using perceptually anchored survey items. This unavoidably could create common method variance (CMV) and might pose a validity concern about our research findings, as with many other IS and social science research [Sharma et al. 2009]. Therefore, findings in our study should be verified and confirmed by others using different methods and within different contexts.

Our study identifies several avenues for further research. One direction is to use different user samples to examine the relationships between the TR dimensions and the likelihood to use self-service technology. People who did not use C2C platforms were not included in our study. CNNIC once reported that many C2C platform visitors, for lack of relevant knowledge and skills, failed to complete the online transactions [CNNIC 2009]. This indicates the existence of inadequate technology readiness in China. It could be worthwhile to replicate this study among non-users to understand their technology readiness for designing relevant training and online tutorial programs.

The simplified TRI was adopted to supplement the use of another instrument in this study. Results of using the simplified version are limited in the literature. Studies are needed to verify its validity and reliability in capturing the same four TR dimensions among people and to compare the power of the simplified version with that of the full-blown TRI.

The possible cultural influence on participants' technology readiness as revealed in this study may well imply the importance of studying the impact of culture on technology readiness in China. National cultural values, individual characteristics, and perceptions can be investigated simultaneously. Through model testing, the suspected impact of culture and technology readiness can be scrutinized to further our understanding of EC users.

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Appendix A – Survey Items for the Constructs under Study

C2C Platform Functionality

(Pre-Sale Information Service)

1. Do you agree that the information asked in the profile section is appropriate?
2. Do you agree that the quantity of information found is appropriate?
3. Do you agree that the quality of the content meet your expectations?
4. Do you agree that modes of complaint and return of goods are comprehensibly laid out (e.g. there is a 'No quibble money-back guarantee') at this website?
5. Do you agree that the feedback and recommendations provided at this website are informative and helpful?

(Mid-Sale Transaction Service)

6. Do you agree that the use of bidding agents on this website is effective?
7. Do you agree that the payment services provided through the website are effective?
8. Do you agree that various services at this website are well integrated for settling a deal?
9. Do you agree that an auction deal can be tracked and/or traced throughout at this website?

(Post-Sale Customer Service)

10. Do you agree that the website provides ready access to customer support?
11. Do you agree that this auction website is providing quality customer support?
12. Do you agree that this auction website is providing timely customer support?
13. Do you agree that this auction website is providing various customer supports?

Trust toward C2C Platform

1. Do you agree that this C2C platform has security mechanisms in place to protect you?
2. Do you agree that this C2C platform provides a means to report any fraudulent behavior directly to the platform provider?
3. Do you agree that this C2C platform solves a security problem or stops a fraudulent behavior effectively?
4. Do you agree that the reputation system (after-sale feedback and participant rating) on this C2C platform works well to enhance trust?
5. Do you agree that this C2C platform is on the whole trustworthy?

Perceived Satisfaction

1. Do you agree that you are delighted at the process of getting services from this C2C platform?
2. Do you agree that you are satisfied at the services provided at this C2C platform?
3. Do you agree that you are happy with the information and services from this C2C platform?

Technology Readiness

(Optimism)

1. You find new technologies to be mentally stimulating .
3. You like computer programs that allow you to tailor things to fit your own needs.

(Innovativeness)

5. Other people come to you for advice on new technologies.
7. You can usually figure out new high-tech products and services without help from others.
9. In general, you are among the first in your circle of friends to acquire new technology when it appears.

(Insecurity)

2. If you provide information to a machine or over the Internet, you can never be sure it really gets to the right place.
4. You do not consider it safe to do any kind of financial business online.
6. You worry that information you send over the Internet will be seen by other people.

(Discomfort)

8. When you get technical support from a provider of a high-tech product or service, you sometimes feel as if you are being taken advantage of by someone who knows more than you do.
10. It is embarrassing when you have trouble with a high-tech gadget while people are watching.