A COMPARATIVE STUDY OF BUYERS’ AND SELLERS’ TRANSACTION INTENTIONS IN CONSUMER-TO-CONSUMER E-MARKETPLACES

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Abstract

Consumer-to-Consumer (C2C) e-marketplaces cannot survive without participations from both a large number of buyers and sellers. Prior research on trust in e-commerce is mainly conducted from the buyers’ perspective. Combined with TAM constructs, this research explores the relative impacts of trust in terms of trust in market-maker and institution-based trust, and risk on individual’s transaction intentions in C2C e-marketplaces from both buyers’ and sellers’ perspectives. The results suggest that the major determinants of transaction intention in e-marketplaces differ between buyer and sellers. Perceived risk is found to have a stronger effect on sellers’ intention than on buyers’ intention to transact in e-marketplaces. In addition, we found that perceived usefulness influences only buyers’ transaction intention, whereas institution-based trust and perceived ease of use influence only sellers’ transaction intention. This study contributes theoretically to C2C e-commerce research and has practical implications for C2C e-commerce practitioners.

Keywords: Consumer-to-consumer, Trust, Risk, Sellers, Buyers, Transaction intention.
1 INTRODUCTION

With the advent of Internet and portable devices, Consumer-to-consumer (C2C) e-commerce has been experiencing rapid development around the world (Jones and Leonard 2008). According to a recent survey conducted by iResearch\(^1\), a leading Internet market research and consulting company in China, the total amount of C2C transactions in 2012 in China reaches about 152.8 billion dollars, which accounts for 70.1% of all online retail sales.

C2C e-commerce can take place in various forms by using different channels such as e-marketplaces, discussion forums, and chat rooms (Leonard and Jones 2010). In this research, we focus on C2C e-marketplaces which are commercial sites on the Internet that allow a large number of individual sellers and buyers who might have never met before to make transactions (Ba and Pavlou 2002, Kim and Ahn 2006). The popular C2C e-marketplaces include eBay in the U.S. and Taobao in China.

In an e-marketplace, both buyers and sellers are users of the website. By joining an e-marketplace, buyers can enjoy buying things and services anytime and anywhere; sellers can also receive benefits from participating in e-marketplaces such as achieving market penetration and expansion, and cost saving (Kim and Ahn 2006). Thus, both buyers and sellers have motivations to participate in an e-marketplace. To be successful, e-marketplaces must attract a large number of buyers and sellers simultaneously. Neither buyers nor sellers would want to participate in an e-marketplaces if there are insufficient numbers of counterparts (Kim and Ahn 2006).

While many individuals, both buyers and sellers, have good intentions to make transactions online, fraudulent activities occur everyday online, especially in C2C e-marketplaces (Leonard 2012), which raises concerns about risks and trust perceived in C2C e-marketplaces. As a result, many studies in Information Systems (IS) field have devoted to examine the antecedents and consequences of trust and risk in e-commerce (e.g., McKnight et al. 2002, Gefen and Straub 2003, Pavlou 2003, Pavlou and Gefen 2004, Wang and Benbasat 2007, Chiu et al. 2012, Fang et al. 2014). In general, this body of research found that trust is positively related to and risk is negatively related to user’s intention to adopt e-commerce. Although trust and risks have been extensively studied by researchers in IS field, most of these studies are conducted from the buyers’ perspective with a few exceptions (e.g., Kim and Ahn 2006, Sun 2010, Leonard 2012). How these factors could affect sellers’ behavior in C2C e-marketplaces has been largely overlooked.

As we stated earlier, e-marketplaces cannot survive without participations from both a large number of buyers and sellers. Similar to buyers, sellers are also routinely engaging with buyers with whom they have little or no prior interactions. Therefore, trust and risk related issues should also be concerns to online sellers. In a study of sellers’ trust, Sun (2010) pointed out that sellers’ trust is essentially different from that of buyers in that they are built on different technical, policy and institutional bases. In addition, the different priorities of using e-marketplaces between buyers (i.e., reducing costs) and sellers (i.e., making long-term profits) (Meehan and Wright 2011) might also make buyers and sellers have different perceptions of the use of e-marketplaces. As a result, it is important to build both buyers’ and sellers’ trust in e-marketplaces for a market-maker to ensure the long-term viability of the e-marketplaces (Kim and Ahn 2006).

To address the research gap, this research aims to study the impact of trust and risk, together with other pertinent factors, on individual’s adoption of C2C e-marketplaces from both the buyers’ and the sellers’ perspectives. Specifically, we address the following research questions:

\[ \text{How do trust and risk impact the buyers’ and sellers’ intention to use a C2C e-marketplace differently?} \]

This question was approached by connecting trust and risk with use factors from Technology Acceptance Model (TAM).

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\(^{1}\) http://ec.iresearch.cn/shopping/20130125/192011.shtml
2 CONCEPTUAL DEVELOPMENT

2.1 Trust

Trust has been studied extensively in e-commerce literature. Due to the complex nature of trust, various definitions have been proposed from different theoretical points of view (Gefen et al. 2003b, Grabner-Kräuter and Kaluscha 2003). In this research, we adopted Mayer et al. (1995)’s definition, which has been widely cited in e-commerce research. According to Mayer et al, trust is the “willingness to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control the other party” (p.712). This definition emphasizes the willingness to take risks when uncertainties (a characteristic of e-commerce context due to the temporal and spatial separation of buyers and sellers) exist (Lucking-Reiley 2000, Sun 2010).

In general, an e-marketplace includes three related components: 1) the market-maker or the intermediary, which is “a third-party institution that uses the Internet infrastructure to facilitate transactions among buyers and sellers in its online marketplace by collecting, processing, and disseminating information” (Pavlou and Gefen 2004, p.44); 2) the platform/website where actual transactions happen and the underlying transaction procedures and policies that support its use; and 3) the users (i.e., buyers and sellers) (Kim and Ahn 2006). Using Internet technology, the market-maker creates the website to facilitate online transactions by virtually bringing buyers and sellers together (Pavlou and Gefen 2004). Therefore, both buyers’ and sellers’ trust in e-marketplaces can be further divided into two types of trust: buyers/sellers’ trust in the market-maker and buyers/sellers’ trust in the website.

2.1.1 Trust in the Market-maker

Attracting both a large numbers of buyers and sellers is critical for the success of e-marketplaces. Thus, one of the main roles for the market-maker is building buyers’ and sellers’ trust and reducing transaction uncertainties (Palmer et al. 2000, Pavlou and Gefen 2004). Buyers and sellers need to trust that the market-makers perform in an honest and competent way and have beliefs that the market-maker has attributes that are beneficial to them (McKnight et al. 2002). The most frequently cited dimensions of this type of trust are competence (ability of the trustee to do what the trustor needs), benevolence (the extent to which a trustee cares and has motivations to act in the trustor’s interests beyond its own profit motive), and integrity (the trustor’s perception that the trustee acts honestly and keeps promises) (Bhattacherjee 2002, McKnight et al. 2002, Gefen and Reychav 2014).

2.1.2 Trust in the Platform

In the case of C2C e-marketplaces, the website is perhaps the only way that buyers and sellers use to communicate with the counterparts. A major concern of these two parties is how secure their transactions are on a particular e-marketplace (McCloskey 2003/2004), which is especially related to institution-based trust. Gefen, et al. (2003b) define institution-based trust as “one’s sense of security from guarantees, safety nets, or other impersonal structures inherent in a specific context” (p.64). Adapting from this definition, we defined institution-based trust in this research as one’s sense of security from guarantees, safety nets, or other impersonal structures inherent in an e-marketplace, in this case, the website.

McKnight, et al. (2002) identified two types of institution-based trust: 1) situational normality which means “one believes that the environment is in proper order and success is likely because the situation is normal or favorable” (p.339); and 2) structural assurances which refers to one’s belief that structures like guarantees, regulations, promises, legal recourse, or other procedures are in place to promote success” (p.339). Therefore, situational normality involves assessment of the situation based on how normal the situation is, most probably by comparing with other similar situations (Gefen et al. 2003b). On the other hand, structural assurances assess situation from its inherent structural characteristics (Gefen et al. 2003b). It might be easier for buyers to assess situational normality because of the low
switching cost from one e-commerce website to another (Koufaris and Hampton-Sosa 2004). Buyers can easily switch to a different e-marketplace with little or no cost if they are not satisfied with their transaction experiences with a particular e-marketplace. However, it might not be true for sellers. The high switching cost to attract new buyers and accumulate online reputation (Koufaris and Hampton-Sosa 2004, Kim et al. 2008) might make sellers unable to compare the websites they are using with other similar websites. That is, sellers might not use situational normality to build their institution-based trust. Since in this research we are particularly interested in investigating both buyers’ and sellers’ trust in an e-market website, we focus on structural assurances aspect of institution-based trust.

2.2 Perceived Risk

The unfamiliarity between buyers and sellers and the implicit uncertainty of using Internet to conduct transactions have rendered risk an inevitable element of e-commerce (Pavlou 2003). Researchers in e-commerce usually focus on perceived risk rather than objective risk because e-commerce participants can only response to risks they perceive subjectively (Pavlou and Gefen 2004, Glover and Benbasat 2010-11). Perceived risk refers to “the subjective belief that there is some probability of suffering a loss in pursuit of a desired outcome” (Pavlou and Gefen 2004, p.41). Adapting from this definition, we define perceived risk in C2C e-marketplaces as the subjective belief that there is some probability of suffering a loss in pursuit of making transactions in an e-marketplace. In this way, we treat risk as a general term which includes risk not only in a community of sellers/buyers (e.g., Pavlou and Gefen 2004, Sun 2010), but also risk concerns related to the nature of the e-commerce such as website’s functionality inefficiency and personal information misuse (e.g., Yen 2010, Glover and Benbasat 2010-11).

2.3 Transaction Intention in E-marketplaces

E-marketplace can be seen as a complex IT system which involves not only the hardware and software used in the system, but also the surrounding services, policies and procedures that support its use (Pavlou and Fygenson 2006). Information Systems research has a long history of investigating IT usage and adoption through different theoretical perspectives, among which the technology acceptance model (TAM) (Davis 1989b, Davis et al. 1989) seems to be a dominant one (Legris et al. 2003, King and He 2006). Indeed, a large number of e-commerce research has been conducted to investigate the intention to use an e-marketplace or intention to make transactions in e-marketplaces by integrating TAM constructs with other important influencing factors such as trust, perceived risks, word-of-mouth quality, perceived service quality, etc. (e.g., Gefen et al. 2003b, Gefen et al. 2003a, Pavlou 2003, Chen et al. 2004, Awad and Ragowsky 2008, Yoon 2009, Wen et al. 2011).

Perceived usefulness (PU) and perceived ease of use (PEOU) are two main constructs in TAM. Adapted from Davis (1989b)’s definitions, perceived usefulness of an e-marketplace in this research is defined as the extent to which a user of the e-marketplace (i.e., the buyers and the sellers) believes that using this particular e-marketplace would enhance his or her performance in online transactions. Perceived ease of use of an e-marketplace is defined as the degree to which a user of the e-marketplace (i.e., the buyers and the sellers) believes that using a particular e-marketplace would be free of effort.

We use transaction intentions in an e-marketplace as the dependent variable. Following Pavlou (2003), it is defined as the users’ intent to engage in online transactions in a particular e-marketplace such as buying and selling. As a motivational factor, behavior intention is suggested as the most influential predictor of actual behavior (Ajzen 1991). Empirical research has also testified this causal relationship. For example, in a study of consumer adoption of e-commerce, Pavlou and Fygenson (2006) found that consumers’ intentions to get information and purchasing are strongly related to actual getting information behavior and purchasing behavior.
3 RESEARCH MODEL AND HYPOTHESIS DEVELOPMENT

This study focuses on online trust, perceived risk, and how their impacts on transaction intentions in e-marketplaces are moderated by the types of users (i.e., buyers vs. sellers). The research model depicted in Figure 1 is adapted from Pavlou (2003), which integrates TAM with trust and perceived risk to investigate consumer acceptance of e-commerce. In doing so, our research model proposes both the TAM and trust (in terms of trust in market-maker and institution-based trust) and perceived risk relationships found in previous research, but focuses on exploring differences on these relationships between buyers and sellers, the two different types of e-marketplace users in this research.

In Figure 1, the dashed arrows present paths based on TAM and the integrated model proposed by Pavlou (2003). These paths are not presented as part of our hypotheses in this research because of their little relevance to our particular focus (i.e., the different relationships between buyers and sellers).

Figure 1. Research Model

3.1 Antecedents of Transaction Intentions in E-marketplaces

In the interest of brevity, the hypotheses relating to the impacts of the antecedents of transaction intentions in e-marketplaces (i.e., trusts, perceived risk, PU and PEOU) on transaction intentions are not explained in detail here. A large number of studies in trust and perceived risk have suggested positive relationships between different kinds of trusts and behavioural intentions in e-commerce contexts (e.g., Gefen 2000, Gefen et al. 2003b, Kim et al. 2008, Fang et al. 2014), and a negative relationship between perceived risk and transaction intentions (e.g., Pavlou 2003, Kim et al. 2008). Prior research using TAM constructs in e-commerce context also found positive relationships between PU, PEOU and behavioural intention such as intention to use e-commerce (e.g., Gefen et al. 2003b, Pavlou 2003, Monsuwé et al. 2004). Following these trends, we argue that these relationships hold true for both buyers and sellers. Therefore, we hypothesize,

H1a: Trust in market-maker will positively influence transaction intentions in an e-marketplace for both buyers and sellers.

H2a: Institution-based trust will positively influence transaction intentions in an e-marketplace for both buyers and sellers.

H3a: Perceived risk will negatively influence transaction intentions in an e-
marketplace for both buyers and sellers.

**H4a**: PEou will positively influence transaction intentions in an e-marketplace for both buyers and sellers.

**H5a**: P will positively influence transaction intentions in an e-marketplace for both buyers and sellers.

In the next section, we discuss hypotheses relating to the effect of the antecedents of transaction intentions in e-marketplaces changing with the types of users---buyers vs. sellers.

### 3.2 Buyers vs. Sellers: Trust, Perceived Risk and Transaction Intentions in E-marketplaces

Research in marketing field has argued that in marketplaces, buyers’ main priority is to reduce cost while sellers’ main priority is to gain long-term profitability (Meehan and Wright 2011). From this point of view, it seems that in general, sellers are more likely to cope with uncertainties since their goals are to gain profits in competitive e-marketplaces. However, for buyers, fear of losing money or not getting what they expect from paying might make them more vulnerable to uncertainties and increase their perceptions of risk in e-marketplaces. Therefore, we argue that buyers tend to be of higher uncertainty avoidance than sellers.

Uncertainty avoidance describes the extent to which people feel threatened by uncertain situations (Hofstede 1993). The higher a person tends to avoid uncertainty, hence risk, the more likely he or she will rely on trust in behavioral intention (Pavlou and Chai 2002, Warkentin et al. 2002). In a study of buyers’ and sellers’ attitudes toward C2C e-commerce, Leonard (2012) found that a buyer’s perceived risk in e-commerce negatively influenced his or her attitude toward online buying, but a seller’s attitude toward online selling is not influenced by perceived risk. Therefore, we hypothesize,

**H1b**: Trust in market-maker will have a more positive impact on transaction intentions in e-marketplaces for buyers than for sellers.

**H2b**: Institution-based trust will have a more positive impact on transaction intentions in e-marketplaces for buyers than for sellers.

**H3b**: Perceived risk will have a more negative impact on transaction intentions in e-marketplaces for buyers than for sellers.

### 3.3 Buyers vs. Sellers: PU, PEou and Transaction Intentions in E-marketplaces

Buyers and sellers have different patterns of using a platform (i.e., the website) provided by a market-maker. Buyers intend to rely on using the website’s complex functions, such as searching and making product and price comparison, checking sellers’ credit inquiry, and gathering related information to facilitate online transaction. However compared to buyers, sellers mainly use the website to sell a product or service. Therefore, they usually do not need to use such complex functions (Kim and Ahn 2006). In order to sell, they might need to use strategies other than those provided by the website such as advertising. In this sense, we argue that buyers will likely place greater emphasis on the usefulness of the website to complete a transaction. Therefore,

**H4b**: PU will have a more positive impact on transaction intentions in e-marketplaces for buyers than for sellers.

E-commerce websites have been made easy for buyers to use. Little technical skills are required for buyers to search online and make transactions. However, it might be different for sellers using e-websites. To sell products online, sellers need to build their own webpages on the website. The quality of the webpages has been found to be associated with sellers’ performance (Lee and Kozar 2006). Therefore, more technical skills are required for sellers to use the website. Accordingly, we would expect sellers weigh PEou more strongly toward transaction intentions in a particular e-marketplace.
H5b: PEOU will have a more positive impact on transaction intentions in e-marketplaces for seller than for buyers.

3.4 Trust in Market-maker, Institution-based Trust, and Perceived Risk

The importance of perceived risk is well established in e-commerce context (Gefen et al. 2008). Since trust is essentially needed only in uncertain situations, it could be described as a function of the degree of risk involved in the situation (Pavlou 2003). Prior research has found that consumers’ trust reduces perceived risk in e-commerce from both the buyers’ perspective (e.g., Pavlou 2003, Kim et al. 2008, Glover and Benbasat 2010-11) and the sellers’ perspective (e.g., Kim and Ahn 2006). The rationale is that people tend to assume that a trusted party will not likely to engage in opportunistic behavior, thus reducing the perceived risk in the online transaction. Therefore, it is hypothesized that,

H6: Trust in market-maker will negatively influence perceived risk in an e-marketplace for both buyers and sellers.

H7: Institution-based trust will negatively influence perceived risk in an e-marketplace for both buyers and sellers.

In e-marketplaces, market-makers provide the e-market infrastructure (i.e., the website) to connect buyers and sellers. Market-makers play a key role in convincing buyers that buying from unknown sellers in particular e-marketplaces is risk-free (Hong and Cho 2011). It is reasonable to argue that well-known e-marketplaces, such as eBay in the U.S. and Taobao in China, are trustworthy than unfamiliar ones. Indeed, brand-name is important to the development of trust in Web-based relationship marketing (Davis et al. 1999). In the absence of face-to-face interactions, brand-names can serve as a symbol of quality and assurance that help build trust (Shankar et al. 2002). Stewart (2003) suggested that online trust can be transferred from different sources such as familiar individuals or places, industry associations and different contexts. More specifically, research in e-commerce has found that trust in intermediary leads to trust in the community of sellers (e.g., Verhagen et al. 2006, Hong and Cho 2011) or trust in the community of buyers (e.g., Sun 2010). Extending these considerations to the relationship between trust in market-maker and institution-based trust in this research, one is likely to derive institution-based trust toward the website a market-maker established if he or she trusts the market-maker. Therefore we hypothesize,

H8: Trust in market-maker will positively influence institution-based trust for both buyers and sellers.

4 RESEARCH METHOD

To test the research model, we conducted two surveys to collect data from both buyers and sellers at Taobao (www.taobao.com), which is the largest C2C platform in China. In 2011, Taobao had a 95.1% share in C2C online marketplaces in China (iResearch 2012). By doing so, we were able to accurately assess buyers’ and sellers’ perceptions and intentions based on their experiences at a same typical online C2C e-marketplace.

4.1 Measures

Previously validated measures were adapted to measure the six constructs associated with the research model. Items for trust in market-maker and perceived risk were adapted from Pavlou and Gefen (2004). Structural assurance from McKnight et al. (2002) was used to measure institution-based trust. Items for PU and PEOU were adapted from Gefen et al. (2003b), which were originally developed by Davis (1989a). Items for intention to use e-marketplaces were from Pavlou (2003). All the items were revised to refer to the Taobao context. 7-point Likert Scale was used for all items ranging from strongly disagree (1) to neutral (4) to strongly agree (7). Table 2 lists the measurement items.
Table 1. Measurement Items for Main Constructs in the Study

<table>
<thead>
<tr>
<th>Construct</th>
<th>Measurement Items</th>
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</table>
| Trust in Market-maker     | 1. As an intermediary, Taobao can be trusted at all times.  
2. As an intermediary, Taobao can be counted on to do what is right.  
3. As an intermediary, Taobao has high integrity.  
4. Taobao is a competent and knowledgeable intermediary. |
| Institution-based Trust   | 1. The Internet has enough safeguards to make me feel comfortable using it to transact personal business.  
2. I feel assured that legal and technological structures adequately protect me from problems on the Internet.  
3. I feel confident that encryption and other technological advances on the Internet make it safe for me to do business there.  
4. In general, the Internet is now a robust and safe environment in which to transact business. |
| Perceived Risk            | 1. There is a considerable risk involved in participating in Taobao transactions.  
2. There is a high potential for loss involved in participating in Taobao transactions.  
3. My decision to participate in Taobao transactions is risky. |
| Perceived Ease of Use     | 1. It is easy to become skillful at using the Taobao website.  
2. Learning to operate the website is easy.  
3. The website is flexible to interact with.  
4. My interaction with the website is clear and understandable. |
| Perceived Usefulness      | 1. The website improves my performance in products searching and buying.  
2. The website enables me to search and buy products faster.  
3. The website enhances my effectiveness in products searching and buying.  
4. The website increases my productivity in search and purchasing products. |
| Transaction Intentions    | 1. Given the chance, I intend to use this retailer’s Web site.  
2. Given the chance, I predict that I should use this retailer’s Web site in the future.  
3. It is likely that I will transact with this Web retailer in the near future. |

4.2 Instrument Translation Process and Pre-Test

The targeted survey subjects were Chinese. So the survey instruments were needed in Chinese. A back-translation process was used to establish translation equivalence (Mullen 1995). The measurement items were first translated into Chinese by the authors. A Chinese bilingual person reviewed the translation to make it more accurate. Then another Chinese bilingual person translated it back into English. Any discrepancies were discussed, until the Chinese and English versions substantially agreed with each other. Then we composed the Chinese versions of the questionnaires and pre-tested in a pilot study.

The instruments were pretested with 30 buyers and 30 sellers from Taobao. The Cronbach’s Alpha of all the scales were acceptable, with the lowest being perceived risk at 0.712 for sellers and 0.732 for buyers. All the other alpha coefficients were at least 0.808.

The convergent validity of each scale was verified with a principal components factor analysis (PCA). A separate PCA was run for each construct for buyers and sellers separately. A single eigenvalue above 1 for each construct verified that the construct was unidimensional, showing the convergent validity of each scale. Discriminant validity could not be assessed at this stage because of the small number of sample size (Gefen et al. 2003b).

4.3 Survey Administration

Two different strategies were used to collect buyers’ and sellers’ data separately. For buyers, we used college students from a major university in eastern China. For sellers, five contact persons who were also sellers at Taobao sent out invitation letters to other sellers. As a result, 110 useful entries from
buyers and 133 from sellers were obtained. These two sets comprised the final sample used for data analysis. Table 2 summarizes the demographic information of the samples.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Items</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Buyers</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>49%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>51%</td>
</tr>
<tr>
<td>Age</td>
<td>Age</td>
<td>24</td>
</tr>
<tr>
<td>Highest education level attained</td>
<td>Graduate degree</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>College degree</td>
<td>98%</td>
</tr>
<tr>
<td></td>
<td>Secondary school or less</td>
<td>0%</td>
</tr>
<tr>
<td>Number of buys/sells in the previous month</td>
<td>0/0</td>
<td>8.2%</td>
</tr>
<tr>
<td></td>
<td>1-5/1-10</td>
<td>64.5%</td>
</tr>
<tr>
<td></td>
<td>6-10/11-20</td>
<td>14.5%</td>
</tr>
<tr>
<td></td>
<td>More than 10/20</td>
<td>12.7%</td>
</tr>
<tr>
<td>Number of expected buys/sells in the next month</td>
<td>0/0</td>
<td>8.3%</td>
</tr>
<tr>
<td></td>
<td>1-5/1-10</td>
<td>76.1%</td>
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<tr>
<td></td>
<td>6-10/11-20</td>
<td>9.2%</td>
</tr>
<tr>
<td></td>
<td>More than 10/20</td>
<td>6.4%</td>
</tr>
</tbody>
</table>

Table 2. Demographic Information of the Samples

5 DATA ANALYSIS AND RESULTS

The research model was assessed using Partial Least Squares technique, with separate models for buyers and sellers. As a component-based structural equation modeling (SEM) technique (Chin 1998a), it enables researchers to assess the measurement model (loadings of observed measurement items on their expected constructs) and the structural model (the causal relationships between independent and dependent variables) simultaneously (Gefen et al. 2000). Compared to covariance-based SEM techniques such as LISREL, PLS has shown to be advantageous in the case of small sample sizes (Chin 1995, Gefen et al. 2000). So we chose PLS for analyzing the final survey data. Especially, SmartPLS (Ringle et al. 2005) was applied.

5.1 Measurement Model

The measurement model was assessed in terms of reliability and convergent and discriminant validity. To assess the reliability, composite reliability (CR) and Cronbach's alpha were examined. The suggested minimum acceptable values for CR and Cronbach's alpha are .70 (Fornell and Larcker 1981). From Table 3a and 3b we can see that, the composite reliabilities and Cronbach’s alphas for all constructs are all larger than 0.70. Thus, the measures have acceptable reliability.

<table>
<thead>
<tr>
<th></th>
<th>CR</th>
<th>Cronbach's alpha</th>
<th>AVE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
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<tbody>
<tr>
<td>Institution-based Trust</td>
<td>0.911</td>
<td>0.871</td>
<td>0.721</td>
<td>0.849</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transaction Intentions</td>
<td>0.942</td>
<td>0.907</td>
<td>0.844</td>
<td>0.429</td>
<td>0.919</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Ease of Use</td>
<td>0.934</td>
<td>0.905</td>
<td>0.779</td>
<td>0.494</td>
<td>0.479</td>
<td>0.883</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>0.931</td>
<td>0.903</td>
<td>0.772</td>
<td>0.525</td>
<td>0.549</td>
<td>0.551</td>
<td>0.879</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>0.903</td>
<td>0.852</td>
<td>0.756</td>
<td>0.022</td>
<td>0.205</td>
<td>0.015</td>
<td>0.025</td>
<td>0.869</td>
<td></td>
</tr>
<tr>
<td>Trust in Market-maker</td>
<td>0.916</td>
<td>0.862</td>
<td>0.783</td>
<td>0.771</td>
<td>0.415</td>
<td>0.507</td>
<td>0.498</td>
<td>0.057</td>
<td>0.885</td>
</tr>
</tbody>
</table>

Table 3a. CR, Cronbach’s alpha, AVE and Correlations of the Constructs for Buyers
Table 3b. CR, Cronbach’s alpha, AVE and Correlations of the Constructs for Sellers

<table>
<thead>
<tr>
<th>Constructs</th>
<th>CR</th>
<th>Cronbach’s alpha</th>
<th>AVE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution-based Trust</td>
<td>0.896</td>
<td>0.845</td>
<td>0.682</td>
<td>0.826</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transaction Intentions</td>
<td>0.947</td>
<td>0.916</td>
<td>0.857</td>
<td>0.614</td>
<td>0.926</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Ease of Use</td>
<td>0.920</td>
<td>0.883</td>
<td>0.742</td>
<td>0.317</td>
<td>0.573</td>
<td>0.861</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>0.924</td>
<td>0.891</td>
<td>0.753</td>
<td>0.297</td>
<td>0.337</td>
<td>0.480</td>
<td>0.868</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>0.931</td>
<td>0.889</td>
<td>0.818</td>
<td>0.228</td>
<td>0.318</td>
<td>0.142</td>
<td>0.101</td>
<td>0.904</td>
<td></td>
</tr>
<tr>
<td>Trust in Market-maker</td>
<td>0.867</td>
<td>0.773</td>
<td>0.685</td>
<td>0.557</td>
<td>0.517</td>
<td>0.458</td>
<td>0.197</td>
<td>0.288</td>
<td>0.828</td>
</tr>
</tbody>
</table>

Convergent validity was assessed by examining each item’s loading on its respective construct and the scores of the average variance extracted (AVE) for each construct. Usually, the item loading should exceed .70 (Moore and Benbasat 1991) and the AVE should be no less than .50 to ensure convergent validity (Fornell and Larcker 1981). The cross-loadings of the items (due to space limit, the cross-loading tables are not provided here) show that most loadings are greater than .70. From Table 3a and 3b, we can see that the AVEs for the constructs range from 0.682-0.857, which are all greater than .50. Therefore, we conclude that the measures have acceptable convergent validity.

Discriminant validity was examined in two ways. First, the measurement items load more highly on the construct they intend to measure than on any other constructs (Chin 1998b). In general, all the items met this requirement. Second, the square root of the AVEs should be greater than the correlations among the constructs, which indicates that the variance shared between the construct and its indicators is more than the variance it shares with other constructs (Co et al. 2005). The statistical results are shown in Table 3a and 3b. The bolded numbers are the square roots of the AVEs. Off-diagonal numbers are the correlations among constructs. All bolded numbers are greater than the off-diagonal ones, indicating satisfactory discriminant validity for the constructs. Thus, discriminant validity was also met. Collectively, the measurement model was found to be satisfactory.

5.2 Structural Model

Path coefficients and explained variances for the research models are shown in Figure 2a (buyers) and 2b (sellers). The analysis shows that buyers’ transaction intention in an e-marketplace was influenced by perceived risk and perceived usefulness, but not by trust in market-maker, institution-based trust and perceived ease of use. On the other hand, sellers’ transaction intention was influenced by perceived risk, institution-based trust and perceived ease of use, but not by trust in market-maker and perceived usefulness. Therefore, for H1a-H5a, only H3a was fully supported; H2a, H4a and H5a were partially supported (for sellers, sellers and buyers respectively); and H1a was not supported.
Since the relationship between trust in market-maker and transaction intentions in e-marketplaces were not significant for both buyers and sellers, H1b was not supported. As expected, perceived risk in both data sets had a significant impact on transaction intention. A Chow’s test was conducted to detect the difference between the path coefficients of the two samples. The result shows that the difference was significant (F(2, 239)=8.650, significant at 0.001), thus supporting H3b. Since the relationship between perceived usefulness and transaction intention was significant for buyers but not for sellers, H4b was supported. The relationship between PEOU and transaction intention was significant for sellers but not for buyers, supports were provided for H5b. Contrary to our expectation, the relationship between institution-based trust and transaction intention was significant for sellers but not for buyers. Therefore, H2b was not supported in the hypothesized direction.

The results also indicate that trust in market-maker only showed a significant impact on sellers’ perceived risk. Institution-based trust did not show significant impacts on both buyers’ and sellers’ perceived risk. Therefore, H6 was partially supported (for sellers) and H7 was not supported. Trust in market-maker was showed significant impacts on institution-based trust for both buyers and sellers. Thus, H8 was supported. Table 4 summarizes our findings.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Buyers</th>
<th>Sellers</th>
<th>Buyers vs. Sellers</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a: Trust in market-maker → Intention to use</td>
<td>Not supported</td>
<td>Not supported</td>
<td></td>
</tr>
<tr>
<td>H2a: Institution-based trust → Intention to use</td>
<td>Not supported</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H3a: Perceived risk → Intention to use</td>
<td>Supported</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H4a: PU → Intention to use</td>
<td>Supported</td>
<td>Not supported</td>
<td></td>
</tr>
<tr>
<td>H5a: PEOU → Intention to use</td>
<td>Not supported</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H6: Trust in market-maker → Perceived risk</td>
<td>Not supported</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H7: Institution-based trust → Perceived risk</td>
<td>Not supported</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H8: Trust in market-maker → Institution-based trust</td>
<td>Supported</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H1b: Trust in market-maker → Intention to use</td>
<td>Not supported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2b: Institution-based trust → Intention to use</td>
<td>Not supported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H3b: Perceived risk → Intention to use</td>
<td>Supported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H4b: PU → Intention to use</td>
<td>Supported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H5b: PEOU → Intention to use</td>
<td>Supported</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Summary of Analysis Results

6 DISCUSSION AND CONCLUSION

This research focuses on the different types of users (i.e., buyers vs. sellers) in the relationships of theoretically grounded determinants of e-marketplace acceptance and transaction intention in e-marketplaces. The critical linkages to transaction intention in e-marketplaces provided reasonably good explained variances: 39.7% for buyers and 56.2% for sellers. The explained variances for institution-based trust were above 30% in both samples. However, the explained variances for perceived risk were quite low for both buyers (1.4%) and sellers (8.9%). In general, the results suggested that the major determinants of intention to use e-marketplaces differ between buyer and sellers. Below we discuss our major findings.

First in our study, the results showed that trust did not play an important role in shaping buyers’ transaction intentions in e-marketplaces. This finding is not consistent with the general finding of prior research that emphasizes the importance role of trust in affecting buyers’ transaction intention in e-commerce. We feel two possible explanations might be helpful to understand this unexpected finding. First, with the widespread use of e-commerce nowadays, most buyers in our sample are repeated buyers rather than potential buyers or first-time buyers. Prior research has found that for
repeated buyers, other factors such as perceived price exerted a stronger influence than trust on purchase intention than for potential buyers (Kim et al. 2012). Second, the targeted e-marketplace in this research, Taobao, is the largest C2C platform in China. People might be attracted to this website and make purchase just because of its reputation.

Further, contrary to our hypothesis H2b, institution-based trust was found to have an impact on sellers’ transaction intention in e-marketplaces rather than on buyers. It seems that sellers rely more on institution-based trust to use an e-marketplaces. It might be possible given that sellers are required more information than buyers to conduct transactions online. Additional research is required to shed more lights on how different types of trust impact individuals’ use of e-marketplaces from different users’ perspectives.

Second, perceived risk was found to affect both buyers’ and sellers’ transaction intentions in e-marketplaces, with a bigger impact on the former. The result suggested that compared with buyers, sellers had higher risk tolerance in e-commerce since their purposes of making transactions online were trying to make long-term profits.

Third, our research highlights the important role of trust in market-maker in shaping institution-based trust. For both buyers and sellers, trust in market-maker was found to have a significant impact on institution-based trust. It is inferred that e-commerce users tend to trust the e-marketplace because they trust the marketplace owner in the first place. The result confirmed that trust can be transferred from different kinds of resources (Stewart 2003).

Fourth, the constructs from TAM seemed to have different impacts on buyers’ and sellers’ intentions to transact in e-marketplaces. PU only had impact on buyers’ intention while PEOU only had impact on sellers’ intentions. The difference reflects the different website use behaviors between buyers and sellers. Buyers mainly use the website to search and compare products. The actual ordering and buying processes are simple and standard. So it is reasonable for buyers to focus on the usefulness of the website. However for sellers, they need to maintain their personal webpages hosted on the e-marketplace to attract buyers and sell products, which requires more efforts of using the features provided by the website. So ease of use became more important for sellers.

Before discussing the implications, it is important to acknowledge the limitations of this research in terms of a small sample size and a single e-marketplace used in the data collection. These may restrict the generalizability of the findings. The research has two theoretical implications. First, it contributes to C2C e-commerce research by focusing on both buyers’ and sellers’ perspectives. Although it is acknowledged that an e-marketplace’s users include not only buyers but also sellers, most of the prior research has focused only on buyers’ perspective. Second, based on Pavlou (2003)’s model, we analyzed buyers’ and sellers’ transaction intentions in e-marketplaces. The results indicate that the determinants of transaction intention in e-marketplaces do differ between buyers and sellers. Therefore, our research suggests a need to further investigate buyer-seller difference in online transaction behavior.

Several practical implications can be drawn from the results for practitioners. First, the research has shown that trust do transfer from a market-maker to the e-marketplace it builds for both buyers and sellers. Therefore, it is important for market-makers to build reputation and brand power which can assure the customers including both buyers and sellers that the e-marketplaces are trustworthy and reliable. Second, from the market-maker’s perspective, different strategies might be needed to attract buyers and sellers to make transactions in the e-marketplace. For example, risk perception was found to have bigger impacts on buyers than on sellers. In addition, buyers seemed to have more concerns about the usefulness of the website while sellers had more concerns about the ease of use. Based on these results, a market-maker might want to reduce buyers’ risk perception by assuring the safety of its payment system. At the same time, a market-maker might also need to put effort into building its website in terms of usefulness to buyers. On the other hand, a market-maker might need to pay special attention to make its website easy to use for sellers.
References


Gefen, D. and I. Reychav (2014). "Why trustworthiness in an IT vendor is important even after the vendor left: IT is accepting the message and not just the messenger that is important." Omega 44(0): 111-125.


