Understanding Exchangers’ Attitudes and Intentions to Engage in Internet Bartering Based on Social Exchange Theory (SET) and the Theory of Reasoned Action (TRA)

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ABSTRACT

This study investigates factors influencing exchangers’ attitudes and intentions toward Internet bartering based on social exchange theory (SET) and the theory of reasoned action (TRA). Survey data was collected from 114 respondents who participate in Internet bartering. The partial least squares (PLS) approach was used for analysis. Results indicate that six factors significantly affect the intention to engage in Internet bartering: reciprocity, communication, justice, money saving, subjective norm, and critical mass. Results also show that the dimension of bartering interaction has a significant effect on trust, and that trust in turn influences commitment, which has a positive impact on attitudes toward Internet bartering, as does money saving. Social factors such as subjective norm and critical mass have direct and significant impacts on individuals’ intentions to engage in Internet bartering. The study provides a model for predicting factors influencing exchangers’ attitudes and intentions toward Internet bartering from the perspectives of bartering interaction, personal perception, and social factors.

Keywords: E-commerce, Internet bartering, TRA, SET, trust, commitment
1. INTRODUCTION

Barter is an act in which two parties trade goods or services without the transfer of payment. Those who barter often bring goods that they no longer find necessary in the hope of exchanging them for goods from other participants (Flanigan, 2008). With the rapid growth of the Internet and the constraints of economic recession, online bartering has come to be seen as a new channel for consumers to acquire goods that they want (Blackwell, 2013). In Internet bartering, one participant (hereafter, exchanger) provides a list of his or her goods on a barter exchange website, and other exchangers bring different goods in order to make exchanges for the listed goods (Devries, 2014). Both exchangers benefit from exchanging these goods and services, and bartering enables people who lack money to obtain goods and services that they need. In addition, the bartering of second-hand items reduces the demand for new goods (Thomas, 2003), mitigates waste, and acts as a counterpoint to today’s disposable economy.

Bartering on the Internet is on the rise worldwide (Lee, Chen, & Hung, 2014). Global barter transactions account for approximately 23% of the total value of worldwide business transactions, which is estimated at $15.9 trillion (Pop, 2014). Moreover, a report by Barter News Weekly shows that almost one-third of all small businesses in the U.S. and 65% of corporations listed on the New York Stock Exchange are involved in some form of bartering (Toth, 2014).

Apart from business-to-business (B2B) network bartering, customer-to-customer (C2C) online bartering is becoming increasingly popular among Internet users because of today’s harsh economic environment. Craigslist, one of the largest online classified ad websites, indicates that the number of bartered items posted increased by 100% in 2008 (Forsloff, 2009). Internet bartering has also become acceptable in Taiwan. Many Internet bartering websites and apps have emerged, such as the E1515 website (http://www.e1515.com.tw/) and Swapub app (https://www.swapub.com/). Swapub, founded in 2015, offers a bartering platform for users to trade almost anything. There have been more than one million downloads, 600,000 users have signed up, and one million products have been available for exchange.

Despite the growing popularity of online bartering, there has been scant academic research on Internet bartering behavior. Research on what motivates Internet users to barter online is needed, both to provide insight into the industry and to offer information and suggestions for future development. Because of the difficulties encountered while measuring online bartering behavior, previous
studies usually refer to intention in order to measure consumer behavior (Venkatesh, 1999). The focus of the current study is on the exchangers’ intentions to engage in Internet bartering. The theory of reasoned action (TRA) has been shown to be sound when it comes to investigating intentional behavior from both the personal and social perspectives, and it has been applied in the investigation of intentions and attitudes toward new technology (Tarhini, Arachchilage, & Abbasi, 2015). Specifically, TRA indicates that social behaviors are motivated by individual attitudes, and is specifically designed to predict information systems use. Therefore, it is suitable for us to explore the factors influencing exchangers’ attitudes toward Internet bartering from the perspectives of personal perception and social factors.

Internet bartering, like online auctions, lacks face-to-face interactions and requires negotiation and trust between strangers. The uncertainty and risk of online transactions are reduced, and a positive intention toward transaction behavior is created as trust increases between exchangers. Social exchange theory (SET) indicates that exchange behavior is determined by a comparison between cost and benefit. Trust, a core concept of SET, plays a critical role in the creation and maintenance of social exchange relationships (Blau, 1964), such as purchasing online (Wang, Wang, & Liu, 2016), and sharing knowledge in virtual teams (Chen & Hew, 2015; Liang, Chang, Rothwell, & Shu, 2016). Previous studies posit that trust is more likely to be built between partners as interpersonal interaction increases. For example, past studies have shown that the factors of reciprocity (Vanneste, 2016), communication (Boies, Fiset, & Gill, 2015; Liang et al., 2016), and justice (Azmi & Aziz, 2015) significantly impact trust in another party. Therefore, the antecedents of trust in the process of exchange are also an issue worthy of consideration.

The purpose of this study is to propose an integrated model drawing on TRA and SET to explore the factors influencing exchangers’ attitudes and intentions toward Internet bartering. Using SET, we investigate the consequences and antecedents of trust. The antecedents of trust are explored in the bartering interaction between exchangers, including reciprocity, communication, and justice. Based on TRA, we discuss the intentions and attitudes involved in Internet bartering, from personal perception to social factors. Personal perception refers to the perceived benefits acquired during the process of Internet bartering. Social factors refers to the contextual factors that influence the intentions of exchangers. Important factors in these dimensions, and the relationships between these factors, are investigated.
The findings of this study compensate for the shortage of previous studies on Internet bartering intentions, which is a subject that has seldom been discussed. The results will also help bartering providers create better platforms and ultimately improve the adoption of Internet bartering.

2. THEORETICAL BACKGROUND

This section presents a brief discussion of the theory of reasoned action (TRA) and the social exchange theory (SET).

2.1. TRA

The theory of reasoned action (TRA), developed by Fishbein & Ajzen (1975), has been used as the principal theory in studies of individuals’ attitudes and behavior. The TRA postulates that actual use is determined by behavioral intentions, which in turn are determined by two factors: attitudes and subjective norm. Attitude is an index of the degree to which a person likes or dislikes an object. Subjective norm is defined as a combination of perceived expectations from relevant individuals or groups as well as one’s intention to comply with these expectations. After deliberating on the attitudes pertaining to the behavior and subjective norm, one develops a completely volition-based intention.

The TRA is recognized as a potential way to identify particular targets of persuasion that in turn influence a specific, willful behavior (Richardson, Wang, & Hall, 2012). The theory has been used to study behavioral intent in various disciplines, including e-commerce (Wu & Liao, 2011), Internet stock trading (Ramayah et al., 2009), and organizational behavior (Richardson et al., 2012). It is a sound theory when it comes to explaining persons’ behavior and intentions to engage in certain behavior.

2.2. SET and Trust

Social exchange theory (SET), developed from the intersection of economics, psychology, and sociology, has been used extensively to investigate exchange processes and behavior relating to various phenomena in the organizational context (Croppanzano & Mitchell, 2005; Luo, 2002). The theory proposes that interpersonal interactions are determined from a cost–benefit perspective (Blau, 1964). Persons often expect reciprocal benefits, such as personal affection, trust, gratitude, and economic return, in the process of exchange. Specifically, individuals voluntarily exchange material or symbolic resources as they perceive the accrual of benefits during the exchange process (Emerson, 1976).
Trust increases as reciprocal behavior emerges. Trust is a complex concept and has different meanings in various fields, such as a general belief that results in intentions to engage in online shopping (Gefen, 2000), a belief that combines integrity, competence, and benevolence, and increases behavioral intentions to share knowledge in virtual communities of practice (Usoro et al., 2007). In the exchange environment, trust refers to one’s confidence in an exchange partner’s reliability and integrity (Morgan & Hunt, 1994).

A number of studies have demonstrated that trust plays an important role in exchange processes situated in virtual spaces. Transactional uncertainty, resulting from an asymmetric distribution of information between transactional partners in an online environment, is a critical barrier to purchase behavior. Therefore, certain scholars propose that trust is a mechanism that can be used to mitigate transactional uncertainty, and in turn increase purchase intentions on commercial websites. Trust is also a good predictor of sharing behavior in virtual teams. The study by Lin, Hung, & Chen (2009) indicates that interpersonal trust in others’ abilities, benevolence, and integrity increases the desire to give and receive information. The same argument was made by Hsu et al. (2007), who demonstrated that trust is a determinant for individual knowledge sharing and is developed through repeated interactions over time or through social networks that people establish. Developing trust is a dynamic and time-consuming process that involves initial trust formation and repeated trials.

Internet bartering is similar to an online auction where persons obtain goods that they want, and is similar to information sharing where things are exchanged without the use of money. All members on bartering websites are strangers who expose themselves to risk in the process of exchange. Persons are also better able to negotiate in the space; so, the absence of rules necessitates reliance on the socially acceptable behavior of others.

Thus, we believe that trust ought to be treated as an important factor worthy of investigation in our study. This paper examines online trust between members on bartering websites. Specifically, the study hypothesizes that a bartering community member’s trust in other members enables goods to be exchanged within the community.

3. RESEARCH MODEL AND HYPOTHESES

Figure 1 depicts the research model of this study, which draws on SET and TRA in order to examine the effects of bartering interaction, personal perception, and social factors on attitudes and intentions toward Internet bartering. Based on
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SET, we examine trust and its antecedents (i.e. reciprocity, communication, and justice) in this study, and in turn, discuss the influence of trust on commitment and attitude toward Internet bartering. In addition, based on TRA, we investigate the influences of personal perception and social factors on attitude toward Internet bartering and the relationship between attitudes and intentions to Internet bartering. Each construct involved in the research model and hypotheses is illustrated below.

Figure 1. Research Framework for Current Study

3.1. The Consequences and Antecedents of Trust

This section discusses trust, commitment, and attitude; reciprocity and trust; communication and trust; and justice and trust.

3.1.1. Trust, Commitment, and Attitude

Trust and commitment are distinct concepts even though in practice they are often closely related. Trust indicates a psychological state in which persons decide to believe others’ behavior and ignore the possible vulnerabilities involved (Lin et al., 2009). It is an important interface between the trustor and the trustee, and belief in the righteousness of the trustee leads to confidence in the organization (Morgan & Hunt, 1994). Commitment is defined as an implicit or explicit pledge
of relational continuity between parties, which refers to a willingness to develop and maintain a positive exchange relationship (Park & Kim, 2003).

Trust reflects the scope and depth of individuals’ relationships with partners, and can lead to relationship commitment. According to the commitment-trust theory, trust and commitment play central roles in relationship marketing, and psychological trust is an essential ingredient for enhancing relationship commitment (Morgan & Hunt, 1994). The solid relationship between trust and commitment is also presented in social exchange theory, which indicates that trust is a critical social exchange mediator in shaping commitment (Cropanzano & Mitchell, 2005).

In the virtual environment, Wu, Chen, & Chung (2010) suggested that trust in the website community tends to strengthen and sustain the community commitment, and in turn enhances stickiness to the website community. Moreover, the study of Park et al. (2012) proposed that, in the information technology service industry, trust placed in a service provider has a positive association with relationship commitment from the service recipients’ side.

In the context of online bartering, trust refers to exchangers’ belief in the ability, competence, and reliability of other exchangers with respect to exchanging goods on the bartering site. Moreover, commitment refers to the willingness to maintain an enduring relationship with the bartering website. Based on previous studies, when an exchanger feels more confident about the relationships with other exchangers on the bartering website, the uncertainty and risk of the transaction are reduced, and in turn he or she will be more willing to interact with the bartering website and maintain a lasting commitment to the website.

**H1:** Trust relationship between exchangers has a positive effect on commitment to a bartering website.

Commitment has been viewed as an intention to continue a course of action or activity and as attitudinal consequences of the psychological contract (Hislop, 2003). A positive psychological contract is assumed to produce a positive level of commitment. Commitment has been shown to be an antecedent to both customer loyalty (Thatcher & George, 2004) and intentional behavior (Reinecke, Schmidt, & Ajzen, 1996). In addition, a vast literature also illustrates that the level of commitment that individuals feel is closely linked to their attitude toward behavior (Hislop, 2003). Attitude is typically based on the consumer’s summary evaluation of both positive and negative components about a stimulus (Priester & Petty, 1996). The study by Seo et al. (2007) found that the more committed to the
website users are, the better their attitude toward to the website will be. In addition, Hislop (2003) suggested that the level of organizational commitment is importantly linked to knowledge-sharing attitude in the workplace. The attitude toward behavior has been shown to be influenced by the level of commitment. By applying the results of previous research, one can conclude that, when exchangers have more commitment to a bartering website, they will develop a more positive attitude toward Internet bartering.

**H2: Commitment to a bartering website is positively related to attitude toward Internet bartering.**

### 3.1.2. Reciprocity and Trust

The norm of reciprocity refers to a set of socially accepted rules regarding a transaction in which a party extending a resource to another party obligates the latter to return the favor (Gouldner, 1960). Social exchanges entail unspecified obligations in which a party who receives favorable rewards from another party tends to return the favor (Blau, 1964). For example, persons’ pro-attitudes toward knowledge sharing are enhanced when they perceive more reciprocity in the process of exchange (Bartol, Liu, Zeng, & Wu, 2009). Similarly, Chan & Li (2010) confirmed that reciprocity helps to sustain supportive relationships and collective action. In general, people suffer from limited time, energy, and other resources and are not willing to share their knowledge unless they are rewarded for doing so.

Reciprocity is probably the best-known exchange rule to enhance the relationship of trust between traders (Cropanzano & Mitchell, 2005). The study conducted by Güth et al. (2000) indicated that trust is honored via positive rewards, which are interpreted as reciprocity. In addition, Delgado-Márquez et.al. (2012) proposed that trust changes along with previous interactions, and that the reciprocity obtained by a trustor after a trust transfer to a trustee positively determines future transfers of trust between them. Internet bartering, like knowledge sharing, is a kind of exchange behavior. Thus, we believe that the more reciprocal behavior (i.e., the exchange of something other members want) emerges in the process of Internet bartering, the more mutual trust results.

**H3: Reciprocal behavior on bartering websites has a positive impact on trust relationship between exchangers.**
3.1.3. Communication and Trust

Communication, defined as the formal and informal sharing of meaningful and timely information (Anderson & Narus, 1990), is an antecedent of trust, which is formed through interactive interactions (Mukherjee & Nath, 2007). The identity of consumers may be suspected since it is easy to mask traits such as gender or age because of the absence of face-to-face contact and visual cues in cyberspace. The development of trust may be hindered between exchangers on the Internet if there is not enough communication between them. Exchangers also often tend to misunderstand goods information, which leads to a lack of trust in the other party.

Communication is a means of building trust, which evolves over time as customers engage in repeated interactions where promises are fulfilled (Luo, 2002). Customers expect a high quality of response and information, openness in communication, feedback, and speed of response from other participants on the C2C website. On the B2C website, consumers have more trust in a company when the website discloses significant amounts of identifying information (Chou, Teng, & Lo, 2009). Similarly, Papadopoulou, et al. (2001) posited that the more communication e-commerce agents enable, the more trust that is developed. Internet bartering is an e-commerce website and requires both negotiation and communication in the process of exchange. Therefore, we believe that the more positive communications involved in exchange processes are perceived by exchangers, the greater the trust that results between the two parties.

\( H4: \) Communication on bartering websites has a positive impact on trust relationship between exchangers.

3.1.4. Justice and Trust

Previous studies propose that justice is an important antecedent of trust in online auctions (Chiu, Huang, & Yen, 2010) and in virtual communities of practice (Fang & Chiu, 2010). Consumers base their perceptions of justice on three dimensions: the perceived justice of the tangible outcome (distributive justice), the perceived justice of the procedures leading to the outcome (procedural justice), and the perceived justice of the manners (e.g., courtesy or rudeness) in which consumers are treated throughout the process (interactional justice) (Skarlicki & Folger, 1997).

Distributive justice refers to the perceived fairness of levels of reward (Homans & Merton, 1961). The rule of distributive justice is that rewards should be proportional to their costs, and profits should be proportional to their investment (Aryee, Budhwar, & Chen, 2002). When outcome distributions are considered fair,
higher levels of trust are likely to emerge (Pillai et al., 2001). For example, Cropanzano and Mitchell’s (2005) study examined organizational behavior and demonstrated that both procedural justice and distributive justice increase employee trust. In line with previous studies, we argue that the more distributive justice emerges in the process of bartering, the stronger the degree of trust between the two parties.

**H5:** Justice on bartering websites has a positive impact on trust relationship between exchangers.

### 3.2. Personal Perceptions

According to TRA, belief (an individual’s subjective probability of the consequence of a particular behavior) influences attitude (an individual’s positive and negative feelings about a particular behavior), which, in turn, shapes behavioral intention. Many studies show that attitudes toward particular behavior are determined by certain antecedents. For example, a study by Limayem et al. (2000) indicated that individuals’ beliefs concerning the consequences of online shopping have significant effects on consumers’ attitudes, and in turn shape their intentions to engage in online shopping. In addition, Khare & Rakesh (2011) demonstrated that Indian students’ intentions to purchase online are influenced by their attitudes toward online shopping, utilitarian values, and hedonic values.

Perceived consequences include hedonic and utilitarian benefits. As to utilitarian benefit, which refers to functional benefits, Joines et al. (2003) argued that people shop online in order to save money, and that these economic motivations have a positive relationship with online shopping. As to hedonic benefits, which refer to mental enjoyment, Bardhi & Arnould (2005) proposed that consumers engage in online shopping to directly satisfy particular individual desires.

Internet bartering could be seen as another type of online shopping. Therefore, this study hypothesizes that attitudes toward Internet bartering will be shaped by beliefs concerning perceived consequences. Reports indicate that one of the advantages of bartering for businesses is to save money and increase business competition (Tang, 2015). In addition, bartering websites provide the mechanism for individuals to exchange something with others who are hoping to acquire a particular good or obtain a service (Blackwell, 2013). It is believed that exchanging wanted items on bartering websites is a facilitating factor for bartering. Therefore,
it is inferred that attitudes toward Internet bartering will be influenced by individuals’ perceptions of hedonic and utilitarian benefits, such as the fulfillment of desires and money saving in the process of bartering. **Fulfillment of desires** is defined as the extent to which individuals exchange wanted goods through online bartering. **Money saving** is defined as the degree to which one saves money through online bartering. The greater degree of fulfillment of desires and money saving experienced by the individual from Internet bartering results in more positive attitudes toward Internet bartering. The hypotheses are proposed as follows:

**H6:** Perceived desire fulfillment has significant influence on attitude toward Internet bartering.

**H7:** Perceived money saving has significant influence on attitude toward Internet bartering.

### 3.3. Social Factors

Subjective norm and critical mass are discussed here as social factors. **Subjective norm** is defined as a combination of the perceived expectations of relevant individuals or groups, along with the intention to comply with these expectations. In other words, it is an individual’s perception that those who are important to him or her would approve or disapprove of the performance of a given behavior (Ajzen, 1991). The study concerning teachers’ use of computers by Teo (2010) found that subjective norm was a critical predictor of individuals’ perceived ease of use and usefulness and, in turn, influenced the attitudes of those teachers toward computer use.

In line with this argument, Schepers et al. (2007) conducted a meta-analysis of the technology acceptance model and attempted to make well-grounded statements on the role of subjective norm. The results of their study indicated a significant influence of subjective norm on perceived usefulness and behavioral intentions to use. In addition, psychological researchers revealed that opinions of important reference groups affect behavioral intention when a new behavior is first being performed; however, this effect decreases over time (Reinecke et al., 1996).

Based on the previous discussion, we consider that subjective norm is positively related to behavioral intention in the initial stage. Because Internet bartering is in the infancy stage in Taiwan, we believe that subjective norm has the greatest influence on the intention to engage in Internet bartering. Thus, we propose the following hypothesis:
H8: There is a positive relationship between subjective norm and the intention to engage in Internet bartering.

The concept of critical mass is fundamental to understanding human behaviors because an individual’s actions often depend on how many other individuals around him or her are behaving in a particular way. Critical mass occurs at the point at which enough people have adopted an innovation (such as a new technology or idea) such that further rate of adoption of the innovation is self-sustaining (Rogers, 2003). In addition, from an economic perspective, the effects of network externality often achieve perceived critical mass and, in turn, influence individuals’ behavior. This refers to the fact that the value of an innovation to a user increases along with its number of adopters; when the number of users reaches the point of critical mass, the intention to accept the innovation will increase (Hsu & Lu, 2004). However critical mass is difficult to measure and is typically demonstrable only after the point of critical mass has been reached. Thus, perceived critical mass is generally applied in diffusion and innovation research (Chen, et al., 2013). For example, the findings of Slyke et al. (2007) indicated that perceived critical mass influences use intentions directly when it comes to adopting a new communication technology. Because Internet bartering is a new business model, or an innovation, perceived critical mass could be an important factor influencing individuals’ intentions to engage in it. Thus, the following hypothesis is proposed:

H9: There is a positive relationship between perceived critical mass and the intention to engage in Internet bartering.

3.4. Attitudes and Intentions

Various theories about attitude have been presented to explain the intentions and behavior of individuals. For example, TRA asserts that an attitude is a predisposition to respond in a consistent manner to a particular behavior (Fishbein & Ajen, 1975). Numerous studies support the argument that there is a strong relationship between attitudes and intentions (Lin, 2007; Ramayah et al., 2009; Richardson et al., 2012). In the context of Internet bartering, intention refers to the likelihood that a consumer actually exchanges goods or services online. The more favorable their attitude toward Internet bartering, the more likely their behavioral intention. Thus, we propose the hypothesis:

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**H10**: Attitude toward Internet bartering is positively related to the intention to engage in Internet bartering.

4. **METHOD**

This section describes the research method in terms of data collection and measures used.

4.1. **Data Collection**

An online survey was conducted in this study. The research model was tested with data collected from members of the most popular bartering websites in Taiwan. These bartering websites provide several useful services and mechanisms for members to exchange goods with one another, such as the ability to upload pictures and descriptions of goods, the presence of a guest book, and provisions for member evaluation. In the current research, members with Internet bartering experience were invited to participate in our study. A request with a hyperlink to our online survey was posted on each member’s guest book on bartering websites. To attract more individuals to participate in the survey, we offered each participant a 100-NT dollar gift. In all, 200 questionnaires were distributed to the sample with bartering experience, and 122 questionnaires were returned. After examining the returned questionnaires, we dropped 8 because of incomplete responses, leaving a total of 114 complete and usable questionnaires for statistical analysis (representing a response rate of 57%).

4.2. **Measures**

Measurement items were adapted primarily and whenever possible from previously validated questionnaires, and were modified to fit the Internet bartering context. The questionnaire contained two parts: general demographic questions, and perceptual scales for each construct. Table 1 identifies the 7 constructs, 7 variables, and the 30 items associated with them. All items were measured on a 7-point Likert scale ranging from “totally disagree” (1) to “totally agree” (7).

Items measuring reciprocity were adapted from Chan & Li (2010). Items for measuring communication were revised from Mukherjee & Nath (2007). Items measuring justice were developed from Fang & Chiu (2010). Items assessing attitude toward Internet bartering and intention were taken from Lin (2007). Subjective norm was measured with the scale developed and validated by Teo (2010), and critical mass was adopted from the study by Hsu & Lu (2004). Items measuring trust were adapted from Lin, Hung, & Chen (2009), and items for commitment were revised from Park & Kim (2003).
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Table 1

Constructs and Measurements

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Variables</th>
<th>Number of Items</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartering interaction</td>
<td>Reciprocity</td>
<td>3</td>
<td>Chan &amp; Li (2010)</td>
</tr>
<tr>
<td></td>
<td>Communication</td>
<td>3</td>
<td>Mukherjee &amp; Nath (2007)</td>
</tr>
<tr>
<td></td>
<td>Justice</td>
<td>3</td>
<td>Fang &amp; Chiu (2010)</td>
</tr>
<tr>
<td>Personal perception</td>
<td>Desires fulfillment</td>
<td>2</td>
<td>Limayem, Khalifa, &amp; Frini (2000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Khare &amp; Rakesh (2011)</td>
</tr>
<tr>
<td></td>
<td>Money saving</td>
<td>2</td>
<td>Limayem, Khalifa, &amp; Frini (2000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Khare &amp; Rakesh (2011)</td>
</tr>
<tr>
<td>Social factors</td>
<td>Subjective norm</td>
<td>2</td>
<td>Teo (2010)</td>
</tr>
<tr>
<td></td>
<td>Critical mass</td>
<td>2</td>
<td>Hsu &amp; Lu (2004)</td>
</tr>
<tr>
<td>Trust</td>
<td>-</td>
<td>4</td>
<td>Lin, Hung, &amp; Chen (2009)</td>
</tr>
<tr>
<td>Commitment</td>
<td>-</td>
<td>3</td>
<td>Park &amp; Kim (2003)</td>
</tr>
<tr>
<td>Attitude toward Internet bartering</td>
<td>-</td>
<td>2</td>
<td>Lin (2007)</td>
</tr>
<tr>
<td>Intention to engage in Internet bartering</td>
<td>-</td>
<td>4</td>
<td>Lin (2007)</td>
</tr>
</tbody>
</table>

There is no existing scale to measure the personally perceived benefits of two of the variables – i.e., money saving and fulfillment of desire – in Internet bartering. Therefore, measuring items for desire fulfillment and money saving were developed here based on the studies of Limayem, Khalifa, & Frini (2000) and Khare & Rakesh (2011), who developed a scale to measure the perceived advantages (i.e., saved money, convenience, comparative shopping) of online shopping. The measurement items for the constructs are given in the Appendix.

A pre-test was performed to verify content validity of these measurements. Two professors who are experts in e-commerce and eight college students with Internet bartering experience participated to assess instrument clarity, ease of...
understanding, logical consistency, and contextual relevance. Based on the comments and suggestions of the pre-test, we made minor modifications, such as correcting typing errors and explaining confusing terms so as to fit the Internet bartering context of our study.

5. RESULTS
This section discusses the demographic analysis and measurement model and presents the model results.

5.1. Demographic Analysis
Table 2 presents demographic information for the study participants. As indicated, most of the respondents were female (68.4%) and between the ages of 20 and 30 years (66.7%). The majority of respondents were students (50.9%), and the education level for most respondents was university (74.6%).

5.2. Measurement Model
Data analysis was carried out in accordance with a two-stage methodology – the measurement model and the structure model (McDonald & Ho, 2002). The first step in our data analysis was to assess construct validity using confirmatory factor analysis.

Reliability for all scales was assessed by means of composite reliability. As shown in Table 3, all composite reliability for measurement model (1) exceeds the recommended 0.7 threshold (see CR column), representing a commonly acceptable level for exploratory research.

Convergent validity of the resulting measures was verified by the criteria suggested by Fornell & Larcker (1981); namely, (1) that all indicator loadings should be significant and should exceed 0.7, and (2) that average variance extracted (AVE) for each construct should exceed the variance because of the measurement error for that construct (i.e., AVE should exceed 0.50). As shown in Table 3, the AVE are all above the 0.5 threshold and each item demonstrates a high loading of more than 0.70 for its respective construct. These results demonstrate adequate convergent validity for an exploratory study.

Discriminant validity of the resulting measures was assessed using the guideline suggested by Sanchez-Franco & Roldan (2005); i.e., the square root of AVE for each construct should exceed the correlation between that and any other construct. Table 4 presents the correlation matrix, with correlations among constructs and the square root of the AVE on the diagonal. All inter-construct correlations are shown as elements off the diagonal of the matrix, and the square
roots of the AVE are shown in the diagonal elements. The results fit the criteria, and adequate discriminant validity for all variables is thus also demonstrated.

Table 2
Demographic Characteristics of Study Participants

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>36</td>
<td>31.6%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>78</td>
<td>68.4%</td>
</tr>
<tr>
<td>Age</td>
<td>&lt;19</td>
<td>13</td>
<td>11.4%</td>
</tr>
<tr>
<td></td>
<td>20~25</td>
<td>50</td>
<td>43.9%</td>
</tr>
<tr>
<td></td>
<td>26~30</td>
<td>26</td>
<td>22.8%</td>
</tr>
<tr>
<td></td>
<td>31~40</td>
<td>19</td>
<td>16.7%</td>
</tr>
<tr>
<td>Education</td>
<td>High school or below</td>
<td>19</td>
<td>16.7%</td>
</tr>
<tr>
<td></td>
<td>University</td>
<td>85</td>
<td>74.6%</td>
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### Table 3

**Measurement Model (1)**

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<th>St Dev</th>
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<td>Commitment</td>
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<tr>
<td>Intention</td>
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Understanding Exchangers’ Attitudes and Intention to Engage in Internet Bartering Based on Social Exchange Theory (SET) and the Theory of Reasoned Action (TRA)

<table>
<thead>
<tr>
<th>Measurement Model (2)</th>
<th>ATT</th>
<th>COM</th>
<th>CM</th>
<th>DF</th>
<th>INT</th>
<th>JUST</th>
<th>MS</th>
<th>REC</th>
<th>SN</th>
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<td>0.165</td>
<td>0.217</td>
<td>0.312</td>
<td>0.317</td>
<td>0.136</td>
<td>0.231</td>
<td>0.197</td>
<td>0.02</td>
<td>0.87</td>
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<tr>
<td>COM</td>
<td>0.165</td>
<td>0.22</td>
<td>0.165</td>
<td>0.317</td>
<td>0.312</td>
<td>0.231</td>
<td>0.197</td>
<td>0.02</td>
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<tr>
<td>CM</td>
<td>0.217</td>
<td>0.165</td>
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</tr>
<tr>
<td>DF</td>
<td>0.312</td>
<td>0.317</td>
<td>0.312</td>
<td>0.231</td>
<td>0.197</td>
<td>0.02</td>
<td>0.87</td>
<td>0.22</td>
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<td>0.317</td>
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<td>0.312</td>
<td>0.231</td>
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<tr>
<td>JUST</td>
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<td>0.165</td>
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<td>0.87</td>
<td>0.22</td>
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<tr>
<td>MS</td>
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<td>0.197</td>
<td>0.197</td>
<td>0.02</td>
<td>0.87</td>
<td>0.22</td>
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<td>REC</td>
<td>0.197</td>
<td>0.197</td>
<td>0.197</td>
<td>0.02</td>
<td>0.87</td>
<td>0.22</td>
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<td>SN</td>
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<td>0.87</td>
<td>0.22</td>
<td>0.87</td>
<td>0.317</td>
</tr>
</tbody>
</table>

Notes: Diagonal elements are the square root of the average variance extracted (AVE) of the reflective scales. The off-diagonal elements are correlations between constructs (AVE); ATT=Attitude; COM=Commitment; CM=Criticism; DF=Desire Fulfillment; INT=Intention; JUST=Justice; MS=Money Saving; REC=Reciprocity; SN=Subjective Norm; TRU=Trust.
5.3. Structural Model Results

Figure 2 shows the analysis results of the structural paths. All hypotheses are supported except for the influence of desire fulfillment on attitude. Overall, our research model shows good explanation with an R square value of 0.62 (accounting for 62% of the variance) for users’ intentions to engage in Internet bartering.

![Diagram showing structural model results with parameters and their significance levels]

**Figure 2. Structural Model Test Results**

With respect to the mediating effect, trust is an important factor influencing commitment ($\beta=0.21$, t-value=4.82), and, in turn, commitment has a significant impact on attitude toward Internet bartering ($\beta=0.75$, t-value=32.45). H1 and H2 are therefore supported.

Consistent with previous literature (Lin, 2007; Ramayah et al., 2009; Richardson et al., 2012), it was found that peoples’ attitudes have a significant influence on their intentions. In the present study, attitude toward Internet bartering has the strongest relationship to the intention to use Internet bartering ($\beta=0.76$, t-value=33.13), thus supporting H10.

For factors involving interpersonal interaction, H3, H4 and H5 are supported, implying that reciprocity ($\beta=0.31$, t-value=7.05), communication ($\beta=0.31$, t-value=5.90), and justice ($\beta=0.21$, t-value=4.57) are the significant predictors of trust.

At the same time, attitude toward Internet bartering is significantly predicted by money saving ($\beta=0.12$, t-value=3.65), but not by individuals’ desire fulfillment ($\beta=-0.01$, t-value=0.39). H7 is supported; however, H6 is not supported.
H8 and H9 are supported, indicating that intention to participate in Internet bartering is significantly influenced by subjective norm (β=0.07, t-value=2.68) and perceived critical mass (β=0.08, t-value=2.94).

6. DISCUSSION

Drawing on SET and TRA, this study investigated the factors influencing individuals’ attitudes and intentions toward Internet bartering. The results show that all hypotheses, except for the path from “desire fulfillment to attitude,” were supported by the empirical results of the path analysis.

Our findings indicate that trust has no direct impact on attitudes toward Internet bartering (β=0.083, t-value=1.594), but instead has an indirect influence on attitude via commitment (β=0.21, t-value=4.82). These results are consistent with the trust-commitment model (Morgan & Hunt, 1994) and with previous studies that emphasize the influence of trust on behavior via commitment (Cropanzano & Mitchell, 2005). The results imply that, when members of the bartering website experience more mutual trust with other members, they develop an enduring desire to maintain a valued relationship with the bartering website, and in turn develop positive attitudes toward the bartering website.

Trust is an important factor in the virtual community and develops gradually through interpersonal interactions. Argumentation is supported by the result that trust is influenced by the various dimensions of bartering interaction, including reciprocity, communication, and justice, which in turn impact commitment.

SET emphasizes the norm of reciprocity, in which an individual who receives favorable rewards from another person tends to return the favor, and increases trust for the other party (Güth, Königstein, Marchand, & Nehring, 2000). That is, the more reciprocal behavior (e.g., giving someone what they want; getting something that one needs) that members experience on online bartering websites, the more likely they are to display trust to another party.

Moreover, consistent with previous studies (Luo, 2002; Mukherjee & Nath, 2007), empirical data shows that communication is a source of building trust, indicating that trust is enriched as customers engage in more communication. Negotiation about the details of the trading location, trading goods, and trading place is especially important for members’ trust in the bartering website. Thus, the proprietors of online bartering websites should provide this function in order to enhance communication between exchangers and to share the details of exchanging goods. This function can be achieved, for example, by adding more
bulletin board systems, online talking, and social networking groups through which people are able to interact with one another, and thus enhance the level of trust between exchangers.

Justice is also especially noted in this study. Justice reflects perceptions of fairness and assessment concerning the appropriateness of performance outcomes or processes (Fang, Chiu, & Wang, 2011). Consistent with the findings of Bock et al. (2005), the current study finds that fairness builds trust between members. Therefore, the more distributive justice that emerges in the process of bartering, the more mutual trust will result. Consequently, the rules for bartering online should be presented charitably by the proprietors of online bartering websites in order to enhance justice in the process of bartering.

The perceived benefits of Internet bartering for individuals are critical indicators of attitudes toward Internet bartering. For example, consumers take cost, convenience, and service into account in relation to online shopping (Khare & Rakesh, 2011). As to the personal perception of benefits, empirical results show that money saving significantly influences attitudes toward Internet bartering as opposed to the factor of desire fulfillment. The mean score for money saving is high (mean=4.79), which implies that exchangers perceive much money saving on bartering websites. On bartering websites, which are different from online shopping where money is used, people attempt to exchange their used or extra goods for things they need. Saving money is therefore an important factor facilitating consumers’ attitudes toward bartering websites.

Barter, as a replacement for money as the method of exchange, is used in times of monetary crisis, such as when the currency may be either unstable (e.g., hyperinflation or deflationary spiral) or simply unavailable for conducting commerce. Reports also indicate that economic depression is one of the most significant periods throughout the history of bartering (Blackwell, 2013). Hence, in periods of economic depression, bartering websites often become more popular. However, desire fulfillment is not shown to have a significant impact on attitudes toward Internet bartering. A possible explanation is that on bartering websites exchangers are motivated to exchange second-hand or useless goods with others. They might not expect to fulfill their desires when using the services of online bartering.

The findings show that critical mass and subjective norm emerge as significant predictors of the intention to engage in Internet bartering. This finding shows that Internet bartering users perceive the demands of “important” others on them to use Internet bartering. Psychological research has revealed that, when a
Understanding Exchangers’ Attitudes and Intention to Engage in Internet Bartering Based on Social Exchange Theory (SET) and the Theory of Reasoned Action (TRA)

new behavior is first being performed, the opinions of important reference groups affect intentions; however, this effect decreases over time (Reinecke, Schmidt, & Ajzen, 1996).

In TRA, subjective norm is defined as an individual’s perception of whether people important to the individual think the behavior should be performed. This observation is especially true in Chinese society, given the group culture of Taiwan; people consider others’ opinions and behavior as being important. Their behavior is also more influenced by groups to which they belong.

Internet bartering could be a novelty for subjects in the study. Subjects thus are more influenced by important reference groups (e.g., opinion leaders or website users’ online feedback). Moreover, according to the theory of innovation diffusion (Rogers, 2003), as users perceive an increase in the number of adopters of an innovation (especially when the number of users reaches perceived critical mass), their intention to accept the innovation increases.

Through the Internet, the art of barter is back. Bartering is just emerging online and is still small in scale and in its initial stages (S curve’s first stage). Therefore, the question of how to increase the number of users is vital to the proprietors of online bartering websites, and includes promotion plans or creation of an alliance with other bartering websites in order to increase the scale of users.

7. IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

In the network era, Internet bartering is growing faster than traditional bartering. However, there are few academic studies that focus on Internet bartering. This study contributes to a more thorough understanding of the relationship among dimensions of bartering interaction, personal perception, social factors, trust, commitment, attitude, and intention in the context of online bartering. The results enrich the knowledge of online bartering from the perspectives of bartering interaction, personal perception, and social factors. This study therefore contributes to both theory and practice.

From a theoretical perspective, this study makes two contributions to the research. First, it successfully applies a combination of social exchange theory (SET) and the theory of reasoned action (TRA) to investigate the antecedents of players’ intentions to use online bartering. Our research model has good explanatory power ($R^2$=62%). This study gives us a better understanding of how three dimensions – bartering interaction, personal perception, and social factor – influence bartering use, an insight that has not been previously examined in online

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bartering literature. This approach is a first step toward integrating two-theory research on online bartering and opens other areas for further research.

This study’s other contribution to theoretical research is its investigation of trust in the context of online bartering. Although trust has received considerable attention in the virtual community, it has seldom been investigated in the context of online bartering. In this study, SET was applied to explore the role of trust and its antecedents from the perspective of interpersonal interaction in the process of exchange. Our major finding shows the strong effects of reciprocity, communication, and justice on trust, which implies that trust is built gradually through bartering interactions. In addition, the effect of trust on attitudes toward Internet bartering via commitment implies that trust is crucial for any behavior in the virtual environment, no matter whether this behavior occurs on a functional website or an enjoyable website. This research presents a new context for bartering applications of trust in innovation.

From a theoretical perspective, this study takes a first step toward shedding light on the factors influencing Internet bartering behavior by combining social exchange theory (SET) and the theory of reasoned action (TRA). The significance of the effects of personal perception and social factors on attitudes toward Internet bartering shows that TRA, which has been applied in the field of consumer behavior, can be successfully applied in a study of Internet bartering.

In addition, there are few studies concerning Internet bartering from the perspective of the exchange process. In this study, SET was applied to explore the role of trust and its antecedents from the perspective of bartering interaction in the process of exchange. Our major finding shows the strong effects of reciprocity, communication, and justice on trust, which implies the importance of the process of exchange on trust building. In addition, the results indicate that trust plays an essential role in the formation of pro-attitudes toward Internet bartering. This finding implies that enhanced trust may increase online shoppers’ intentions to engage in online bartering. The results also show that SET is fitting for a study of Internet bartering.

From a managerial perspective, this study could benefit the proprietors of bartering websites. The findings may help them to understand the factors influencing user intentions with respect to Internet bartering and could also help them further refine their website design and management. For example, the findings will help them to appreciate the importance of creating effective communication and trust between parties wishing to barter on their website, as well
as the value of ensuring fair and mutually beneficial exchanges, another important element in generating user trust.

Finally, the social factors of critical mass and subjective norm show a significant influence on users’ intentions to use Internet bartering. According to the theory of innovation diffusion (Rogers, 2003), Internet bartering is still under development, which means that proprietors of bartering websites may consider offering promotions to customers who explore their websites in order to attract more users and reach the point of critical mass. In this way, the individual’s intention to use Internet bartering can be strengthened through social influence.

Small sample size is an important limitation of this study. Even with the popularity of the Internet, few people use bartering websites in Taiwan; therefore, it was difficult to find more subjects for our study. In addition, because the participants in this study were limited to users of online bartering websites, one should consider the difference in samples in applying the results to other Internet research studies. Furthermore, because the current research focuses exclusively on Taiwan, the findings might be influenced by the country’s culture and customs. In extending the results of this study to other countries, researchers should be aware of cultural factors.

Our research focused on C2C bartering only, but since bartering also happens in organizations and nations, future research might extend to B2B or bartering in organizations. In addition, this study focused on the exchange of tangible goods rather than intangible ones. Future studies should take both tangible and intangible goods into account in order to assess the differences caused by different items.

In addition, in the present research, we did not investigate other personal perceptions of benefits, such as the avoidance of waste, environmental protection, socializing, achievement, and entertainment. These should be integrated into the model for future research.

Some reports have shown that people in different countries experience different motivations to use Internet bartering. For example, research findings indicate that the Taiwanese engage in bartering to save money, whereas many of the people in other countries engage in bartering for fun (Lu, 2008). Buchan, Croson, & Dawes (2002) indicated that cultural differences influence trust and reciprocity. The present research was conducted in Taiwan, where the context and culture differ from other regions, especially Western countries. Thus, the same survey should be conducted in different regions in order to compare differences and thereby reveal the influence of culture.
In this study, a questionnaire was used for data collection. Based on our research findings, we suggest that an in-depth interview with exchangers might provide more insights. Moreover, only factors relating to exchangers were explored in our research, but the design or business model of Internet bartering websites could also be important sources influencing the intentions of exchangers. Future research, therefore, should focus on the factors of the websites.

Appendix

MEASUREMENT ITEMS FOR THE CONSTRUCTS

<table>
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<tr>
<th>Construct</th>
<th>Items</th>
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| Reciprocity | (1) The goods which are exchanged by me and others on this bartering website are always suitable for our demands.  
(2) When I exchange goods with others, I believe that we all benefit from the transaction.  
(3) The exchangers of the bartering website always help others get what they want. |
| Communication | (1) Exchangers on the bartering website are very responsive to my posts concerning goods that will be exchanged.  
(2) Exchangers on the bartering website clearly mention all duties, shipping rates, and information on exchanging goods before the bartering is approved.  
(3) The response of the exchangers on the bartering website is immediate. |
| Justice     | (1) I think what I get is fair compared with my exchanged goods.  
(2) Compared with the responses that I get from others, I think how I respond to the questions of other partners is fair.  
(3) I think what I get is fair compared with the effort and the time that I spent on the bartering website. |
| Trust       | (1) Exchangers on this bartering website have reciprocal faith-based and trustworthy relationships.  
(2) Exchangers on this bartering website will not take advantage of others even when a profitable opportunity arises.  
(3) Exchangers on this bartering website always keep promises they make to others.  
(4) My exchange partner can be relied on to keep his/her promises. |

--Continued
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**Appendix (Cont’d)**

| Commitment                  | (1) I will not change my bartering website in the future.  
|                            | (2) I will continuously exchange goods on this bartering website in the future.  
|                            | (3) I will visit this bartering website first when I want to exchange goods with others. |
| Subjective norm            | (1) People whose opinions I value will encourage me to barter on the Internet.  
|                            | (2) People who are important to me will support me to barter on the Internet. |
| Critical mass              | (1) Most people in my community barter frequently.  
|                            | (2) Most people in my class/office barter frequently. |
| Money saving               | (1) Bartering through the web allows me to save money compared with the goods or service bought in regular stores.  
|                            | (2) Bartering online costs me little money. |
| Desire fulfillment         | (1) Bartering through the web allows me to get what I want.  
|                            | (2) I can exchange products or services on bartering websites that are difficult to buy in stores. |
| Attitude toward Internet bartering | (1) Bartering on the Internet is a good idea.  
|                            | (2) I like to barter on the Internet. |
| Intention to engage in Internet bartering | (1) I am planning to engage in Internet bartering.  
|                            | (2) I intend to engage in Internet bartering within the next 3 months.  
|                            | (3) I will add the Internet bartering websites to my favorite links.  
|                            | (4) I will recommend my friends to engage in Internet bartering. |
REFERENCES


Understanding Exchangers’ Attitudes and Intention to Engage in Internet Bartering Based on Social Exchange Theory (SET) and the Theory of Reasoned Action (TRA)


*International Journal of Business and Information*
Retrieved from:

Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with
unobservable variables and measurement error, *Journal of Marketing Research*


doi: 10.1016/S0305-0483(00)00021-19


the investment game with indirect reward, *SFB 373 Discussion Papers*, Humboldt

doi: 10.2031.2092623

Routledge & Kegan Paul.

social influences and flow experience, *Journal of Information & Management* 41(7),
853-868. doi: 10.1016/j.im.203.08.014

virtual communities: The relationship between trust, self-efficacy, and outcome
doi: 10.1016/j.ijhcs.2006.09.003

consumer Web use and their implications for e-commerce, *Journal of Consumer
Marketing* 20(2), 90-108. doi: 10.1108/0736376031044578

Understanding Exchangers’ Attitudes and Intention to Engage in Internet Bartering Based on Social Exchange Theory (SET) and the Theory of Reasoned Action (TRA)

examination, *Journal of Internet Commerce* 10(4), 227-244. doi: 10.1080/15332861.2011.622.691


Sanchez-Franco, M.J., & Roldan, J L. (2005). Web acceptance and usage model: A
comparing between goal-directed and experiential web users, *Internet Research* 15(1), 21-48. doi: 10.1108/10662240510577059


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