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The Roles of Constraint-Based and Dedication-Based Influences on User's Continued Online Shopping Behavior
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The objective of this study was to determine empirically the role of constraint-based and dedication-based influences as drivers of the intention to continue using online shopping websites. Constraint-based influences consist of two variables: trust and perceived switching costs. Dedication-based influences consist of three variables: satisfaction, perceived usefulness, and trust. The current results indicate that both constraint-based and dedication-based influences are important drivers of the intention to continue using online shopping websites. The data also shows that trust has the strongest total effect on online shoppers’ intention to continue using online shopping websites. In addition, the results indicate that the antecedents of constraint-based influences, technical bonds (e.g., perceived operational competence and perceived website interactivity) and social bonds (e.g., perceived relationship investment, community building, and intimacy) have indirect positive effects on the intention to continue using online shopping websites. Based on these findings, this research suggests that online shopping websites should build constraint-based and dedication-based influences to enhance user’s continued online shopping behaviors simultaneously.

Keywords: information system continuance, post-adoption behaviors, dedication and constraint based influences, online shopping.

The Roles of Constraint-Based and Dedication-Based Influences on User’s Continued Online Shopping Behavior

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El objetivo de este trabajo fue comprobar experimentalmente el papel que juegan las técnicas basadas en la coacción o en la dedicación como impulsores del uso de páginas web de compra on-line. Las influencias basadas en la coacción presentan dos variables: confianza y cambio de coste percibido. Las influencias basadas en la dedicación muestran tres variables: satisfacción, utilidad percibida y confianza. Los resultados indicaron que ambas influencias son importantes impulsores de la intención de continuar usando páginas web de compra on-line. Los datos mostraron que la confianza era la variable más influyente en la intención del uso de estas páginas web. Adicionalmente, los resultados indicaron que los antecedentes de las influencias basadas en la restricción, en cadenas técnicas (v.gr., competencia operacional percibida e interactividad percibida del sitio web) y las redes sociales (v.gr., inversión en relaciones percibida, comunidad e intimidad) tuvieron efectos indirectos positivos en la intención de continuar usando páginas web de compra on-line. De acuerdo con estos resultados, se sugiere que dichas páginas web deberían usar tanto influencias basadas en la restricción como en la dedicación para incrementar el uso continuado de la conducta de compra on-line.

Palabras clave: sistema de información continuo, conductas post-adopción, influencias basadas en la dedicación y en la restricción, compra on-line.
With the rapid growth of online consumer shopping, prior relationship marketing literature has recognized that understanding consumers’ motivations for maintaining relationships with online shopping websites is the key for online vendors in their efforts to maintain online customer loyalty in a highly competitive marketplace (Bendapudi & Berry, 1997; Bigné-Alcañiz, Ruiz-Mañe, Aldás-Manzano, & Sanz-Blas, 2008; Chen & Kao, 2010; Kim & Son, 2009; Liang, Chen, & Wang, 2008; Luo, Cheng, Ching, & Liu, 2011; Tsai & Huang, 2007; Wang & Head, 2007; Yu, 2008). Recently, researchers have dedicated their efforts to studying users’ initial adoption (Davis, Bagozzi, & Warshaw, 1989) or post-adoption (Bhattacherjee, 2001a; b) of an information system (IS) and information technology (IT). Based on consumer behavior literature, Bhattacherjee (2001a; b) integrated expectation-confirmation theory (ECT) to develop an expectation-confirmation model (ECM) that attempted to explain and predict the continued use of IS. However, the first research gap pertains to IS continuance theory; specifically, ECM has only focused on dedication-based relationships and studying specific factors such as satisfaction, perceived usefulness, and trust (Bhattacherjee, 2001a; b; Kang & Lee, 2010; Kim, 2010; Limayem & Cheung, 2008; Roca, Chiu, & Martínez, 2006). In terms of remaining customers, literature in relationship marketing and customer satisfaction has never explained all of the variations in repurchase intentions because customers are seldom free to choose suppliers (Fornell, 1992; Jones, Mothersbaugh, & Beatty, 2000). Additionally, relationship marketing literature has noted that different customers’ motivations can underlie the notion of loyalty as a result of one or more of three significant drivers (Bendapudi & Berry, 1997; Kim & Son, 2009; Tsai & Huang, 2007): constraint-based (they “have to”), dedication-based (they “want to”), and community-based (they “flock to”). This deficiency reveals a need to increase awareness to the important point that a constraint-based perspective is necessary to explain the persistence of IS usage.

Researchers have dedicated to explore the key determinants of online customer retention (Bendapudi & Berry, 1997; Kim & Son, 2009; Lee, Tsai, & Lanting, 2011; Liu, Guo, & Lee, 2011); however, only limited attempts have been made to investigate the interrelationships between these determinants (Tsai & Huang, 2007; Wang & Head, 2007). The second research gap is the lack of knowledge of the interrelationships between the determinants of online consumer continuance intention toward online shopping websites. It is important to study these interrelationships empirically. When online shopping websites try to improve customer retention, knowledge of these interrelationships could be taken into consideration (Tsai & Huang, 2007).

Therefore, in the current study, we attempted to fill these two research gaps via a multiple lens-based perspective and develop a comprehensive framework of online consumer continuance intention toward online shopping websites. The main objective of the current study was to improve our understanding of factors that influence customers’ intention to continue using online shopping websites. As such, we decided to extend IS continuance theory by adopting relationship marketing and consumer behavior research and incorporate both constraint-based and dedication-based relationships in our model.

The current study endeavored to contribute to relationship marketing and online shopping literature in three ways. First, based on a literature review, this study provides researchers with a comprehensive theoretical framework that incorporates concepts of relationship marketing, IS continuance theory (i.e., the expectation-confirmation model [ECM]), constraint-based relationships, and dedication-based relationships to provide a better explanation of the antecedents that drive customer motivations to continue using online shopping websites. Based on IS continuance theory and relationship marketing literature, this study proposed satisfaction, perceived usefulness, and trust as three important variables that make up dedication-based influences. Based on the investment model (Jones et al., 2000; Ping, 1993), this study proposed trust and perceived switching costs as two important variables that make up constraint-based influences. Moreover, drawing on IS continuance theory and task-technology fit theory, this study suggested that confirmation of task-technology fit is an important antecedent in determining dedication-based relationships. Drawing on the investment model (Jones et al., 2000; Ping, 1993), this study also suggested that both technical bonds (including two variables: perceived operational competence and perceived website interactivity) and social bonds (including three variables: perceived relationship investment, community building, and intimacy) are important antecedents in determining constraint-based relationships. Second, this study examined the interrelationships between the determinants (i.e., constraint-based and dedication-based influences) of customers’ intentions to continue using online shopping websites. Third, this study examined the significant mediating effects of both constraint-based and dedication-based influences on customer retention (i.e., customers’ intentions to continue using online shopping websites).

The remainder of this article is structured as follows: in the next section, we provide the theoretical background for our research. In the third section, we outline the theoretical model and state the research hypotheses. In subsequent sections, we discuss the research methodology and report the results. We conclude with a discussion of the implications and limitations of the research.

Theoretical Background

To understand customers’ intentions to continue using online shopping websites, we need to understand the role of users’ cognitive beliefs. Thus, we need to pay attention
to frameworks such as the ECM (Bhattacherjee, 2001a; b), task-technology fit model (TTF; Goodhue, 1995; Goodhue & Thompson, 1995), and investment model (Jones et al., 2000; Ping, 1993). These three models have been widely applied in discussing IS continuance behaviour by users who already had experience with IS. Of note, ECM does not consider the link between work-related matters and the use of IS, while the TTF considers matching capabilities of technology to the demands of the task; that is, the ability of IS to support a task. However, the combined model of ECM and TTF may not be able to explain IS continuance intention because these two models do not include constraint-based relationships, which can be explained by the investment model. Therefore, this study suggested that a comprehensive theoretical framework that combined the models of ECM, TTF, and investment model would contribute to IS continuance literature. The following study briefly describes the key constructs of ECM, TTF, and investment model.

The Expectation-Confirmation Model (ECM)

Based on ECT (Anderson & Sullivan, 1993; Oliver, 1980), Bhattacherjee (2001a; b) suggested that IS users’ continuance choice is similar to consumers’ decisions to repurchase and proposes that TAM and ECT present complementary perspectives for understanding IT usage intention or behaviour (Premkumar & Bhattacherjee, 2008). Bhattacherjee (2001a; b) integrated ECTs confirmation of expectation with user satisfaction variables and the perceived usefulness of the TAM variables to develop the ECM and examined post-behaviour variables to predict IS users’ continuance decisions. This differs from the ECT that examines both pre and post-behaviour variables. In addition, EMC posits that the extent of user confirmation of expectation; user satisfaction with the IS; and post-adoption expectations, which is represented by perceived usefulness, are the primary antecedents of users’ intentions to continue usage of an IS. The outcome variable of continuance intention is determined by the level of satisfaction with an IS and the perceived usefulness of the system. User satisfaction is determined by perceived usefulness and confirmation of expectation following actual usage and is positively associated with perceived level of usefulness. The strength of this study is that it combines the perceived usefulness of TAM variables and economic loyalty incentives with ECT. Hence, ECM was adopted in this study because it is suitable for gaining a comprehensive understanding of online shoppers’ post-adopter behaviours.

The Task-Technology Fit Model (TTF)

The TTF posits that IT is more likely to have a positive impact on individual performance and be used if the capabilities of the IT match (i.e., fit) the tasks that the user must perform (Goodhue, 1995; Goodhue & Thompson, 1995). The TTF has four constructs: task and technology characteristics, which together affect the third construct task-technology fit, which in turn affects an outcome variable, performance or utilization. According to TTF, users choose ITs or ISs that enable them to complete the task with the greatest net benefits. In other words, if the characteristics of an IS do not assist the individual in meeting the requirements of his or her working tasks, task-technology-fit is reduced, which negatively impacts individual performance and user evaluations of the IS. The TTF has been employed in the context of an array of information systems including e-commerce systems, which has added another perspective to TAM (e.g., Dishaw & Strong, 1999), ECT (e.g., Larsen, Sørebø, & Sørebø, 2009), or other models.

The Investment Model

The investment model is developed initially as a means of describing an individual’s experience and long-term persistence to examine interpersonal romantic relationships (Rusbult, 1980). The outcome variable, relationship stability, is predicted by each individual partner’s commitment to maintaining a dyadic relationship. Meanwhile, commitment level is affected by three antecedent factors: satisfaction, quality of alternatives, and investment size. According to the investment model, individuals who are highly satisfied in a relationship, fuelled by the size of the investment in the relationship, and perceive few appealing alternatives will be highly committed to the relationship. Empirical studies have provided support for the model in various fields; for example, business partnerships (Ping, 1993). This study proposed that the investment model in social psychology may help identify the key determinants of customer loyalty and IS users’ continuance decisions.

In summary, commitment diminishes when satisfaction and investment are low and quality of alternatives is high. However, high quality of alternatives does not always result in leaving the relationship, rather the relationship may continue, not due to any sense of satisfaction or commitment, but due to the high switching cost of changing the relationship (Fornell, 1992; Jones et al., 2000; Ping, 1993). In other words, if customers feel that alternative service providers are of the same or similar quality, they may maintain the relationship with their current service provider because the perception of high switching costs would be accentuated. Jones et al.’s (2000) and Ping (1993) argued that switching barriers includes strong interpersonal relationships, high switching costs, high investment, and attractiveness of alternatives refers to whether viable alternatives exist in the market. Therefore, in line with the purpose of this study, quality of alternatives was replaced by perceived switching costs.
Theoretical Model and Research Hypotheses

With respect to the determinants of customer retention, the relationship marketing literature suggests that customers are motivated to maintain relationships with a service provider either because they really want to (dedication-based relationship maintenance) or because they believe they have no alternative options (constraint-based relationship maintenance) (Bendapudi & Berry, 1997; Jones et al., 2000). Therefore, following the categories of customer motivation for maintaining relationships with service providers, as differentiated by Bendapudi & Berry (1997) and Jones et al. (2000), this study proposed and empirically analysed a conceptual framework that considers dedication-based and constraint-based variables as drivers of customer retention and their antecedents in an online context. The research model with the hypotheses is shown in Figure 1.

The theoretical foundations of variables that compose dedication and constraint-based influences are discussed in the following. The IS continuance literature (Bhattacherjee, 2001a; Kang & Lee, 2010; Kim, 2010; Limayem & Cheung, 2008) suggests that satisfaction and perceived usefulness are positive affective factors for continuing a relationship; that is, these two variables could be considered to belong to dedication-based influences. Meanwhile, according to relationship marketing literature, trust in a partner is the antecedent of dedication-based relationship maintenance (Bendapudi & Berry, 1997). Odekerken-Schröder and Bloemer (2004) also suggest that trust and satisfaction are determinants of dedication-based relationship maintenance. Therefore, this study proposed satisfaction, perceived usefulness, and trust as three important variables that make up dedication-based influences. On the other hand, drawing on the investment model (Jones et al., 2000; Ping, 1993) and Tsai and Huang’s (2007) and Tsai, Huang,
Jaw, and Chen’s (2006) study, the current study adopted perceived switching cost as a constraint-based relationship variable. Meanwhile, trust can also be considered as a way to develop a constraint-based relationship because trust is based on previous transactions and experiences with the current service provider in post-purchase and post-adoption behaviours (Ng & Kwahk, 2010). Boon and Holmes (1991) and Schlenker, Helm, and Tedeschi (1973) conceived trust as the reliance on another person under uncertain and risky situations. Specifically, online customers, who trust their current service providers because of frequent use, will feel in control when using their current online shopping website where fewer uncertain risks in information asymmetry of online shopping environment exist (Cheung & Lee, 2006). Lewis and Weigert (1985) further suggested that trust is an expectation set within particular contextual parameters and constraints. In this way, a possible solution for information asymmetry under uncertain risks, while shopping online, is to create online customer trust in the current service provider. This corresponds to the efficiency of online shopping customers’ usage behaviours and becomes a constraint that preventing customers from discontinuing their use of the current online shopping website or switching to a new online shopping website (Ng & Kwahk, 2010). According to previous studies (Boon & Holmes, 1991; Cheung & Lee, 2006; Lewis & Weigert, 1985; Ng & Kwahk, 2010; Schlenker et al., 1973), this study included trust as a constraint-based relationship variable.

Drawing on the IS continuance literature, Bhattacherjee (2001a; b) proposed that both user satisfaction with IS and post-adoption expectations, which is represented by perceived usefulness, are determined by the extent of user confirmation of expectation. As discussed above, the key variables of ECM do not consider the link between work-related matters and the use of IS. Meanwhile, confirmation of expectation depends on perceived performance and expectations (Bhattacherjee, 2001a; b), as well as the construct task-technology fit in TTF, which has been used to measure fit between IT and user interaction by evaluating performance (i.e., the better the task-technology fit, the more positive the expected consequences of use of an IS). In the online shopping context, the consequences that online shopping users might expect could include being able to accomplish their shopping more quickly and easily and improve their performance. Accordingly, this study suggested an extension of the construct confirmation of expectation to include the construct, task-technology fit, and create a new construct, confirmation of task-technology fit. Confirmation of task-technology fit refers to the degree to which technology assists an individual in performing his or her portfolio of tasks. This study proposed that confirmation of task-technology fit would be better than an individual’s expectation.

From the perspective of investment model and relationship marketing (Berry, 1995), various relationship bonds exist between in a specific customer-firm relationship, which will have positive impacts on trust (Lin, Weng, & Hsieh, 2003) and perceived switching costs (Hsieh, Chiou, & Chiang, 2005). The literature suggests that relationship bonds are classified under two broad categories: structural bonds and social bonds (Hsu & Wang, 2008; Perry, Cavaye, & Coote, 2002; Rao & Perry, 2002). Structural bonds relate to a firm that enhances customer relationships by designing a solution to customer problems into the service delivery system. The research on service relationships has recognized that structural bonds are technical bonds that relate to the characteristics of products and services exchanged in the relationship (Hsu & Wang, 2008; Perry et al., 2002). Liu and Arnett (2000) suggested six critical factors to e-commerce success: information quality, service quality, system quality, system use, playfulness, and learning capability (which refers to interactive function between customers and the firm). Perry et al. (2002) proposed that technical bonds are considered to include competence and investment in IT. Information quality, service quality, system quality, and system use could be considered components of competence, which refers to skills and abilities (Balasubramanian, Konana, & Menon, 2003). This study, thus, considered perceived operational competence and perceived website interactivity as the two instruments of technical bonds. On the other hand, social bonds refer to interpersonal relationships via interpersonal interactions, identifications, and friendship (Berry, 1995). Previous research (Hsu & Wang, 2008; Perry et al., 2002; Rao & Perry, 2002) has proposed the existence of various social bonds, such as intimacy, empathy, friendship, benevolence, likeability, and equity, which seem to provide important psychosocial bonds that are associated with the service experience. In addition, Smith and Barclay (1997) posited that investing time, effort, and other irrecoverable resources in a relationship creates psychological bonds that encourage customers to stay in that relationship. In recent years, online communities, built by online shopping websites, have generated considerable interest among both researchers and marketers. Tsai et al. (2006) suggested that online community building allows and encourages interactions around shared interests and experiences between all online shoppers and the online shopping website. This could lead to the development of social bonds and dependences via interpersonal interactions and friendships (Berry, 1955; Tsai et al., 2006). This study, thus, considered perceived relationship investment, community building, and intimacy as the three instruments of social bonds.

**Drivers of Continuance Intention: Dedication and Constraint-Based Influences**

As discussed above, this study proposed that satisfaction, perceived usefulness, and trust could be considered dedication-based influences (Bendapudi & Berry, 1997; Bhattacherjee, 2001a; b; Kang & Lee, 2010; Kim, 2010;
Limayem & Cheung, 2008; Odekerken-Schröder & Bloemer, 2004) and trust and perceived switching costs (Boon & Holmes, 1991; Cheung & Lee, 2006; Jones et al., 2000; Lewis & Weigert, 1985; Ng & Kwahk, 2010; Ping, 1993; Schlenker et al., 1973; Tsai & Huang, 2007; Tsai et al., 2006) could be considered constraint-based influences that have positive influences on continuance intention.

Continuance intention. In the context of business, repurchase intention is a consumer’s likelihood of purchasing from the same vendor in the future at different time intervals. As such, repurchase intention has been modelled as a function of the previous intention, the current attitudinal level, and the satisfaction level (Oliver, 1980). Based on the ECT, Bhattacherjee (2001a; b) suggested that IS users’ continuance choice is similar to consumers’ decisions to repurchase. In this paper, continuance intention is defined as the subjective probability that an online shopper will continue to use the online shopping website.

Satisfaction. In the context of business, satisfaction is a decisive factor that affects repurchase intentions of customers; therefore, there is a significant correlation between satisfaction and repurchase intention (Anderson & Sullivan, 1993; Oliver, 1980). Bhattacherjee (2001a) defined user satisfaction as “an ex-post evaluation of consumers’ initial (trial) experience with the service, and is captured as a positive feeling (satisfaction), indifference, or negative feeling (dissatisfaction)” (p. 203). This study conceptualized customer satisfaction as a cumulative, global evaluation based on experience with a firm over time. In this paper, online shopper satisfaction was defined as online shoppers’ evaluations of and affective responses to the overall purchasing experience with the online shopping website. Numerous research studies on IS continuance support the ECM hypothesis that satisfaction is a major determinant of continuance intentions (Bhattacherjee, 2001a; b; Kang & Lee, 2010; Kim, 2010; Limayem & Cheung, 2008). That is, satisfied consumers form intentions to reuse the product or service in the future on a website, while dissatisfied users discontinue its subsequent use. Therefore, user satisfaction is expected to have a direct and positive effect on continuance intention.

Perceived usefulness. Perceived usefulness refers to users’ subjective probabilities that IS use will improve performance (Davis et al., 1989). Based on the ECT, Bhattacherjee (2001a; b) suggested that post-adoption expectations are represented by perceived usefulness, which affects both attitude toward adoption and continuance. In this present research, perceived usefulness was defined as online shoppers’ perceptions of the benefits of an online shopping website. Similarly, Bhattacherjee (2001a; b) suggested that perceived usefulness is an adequate ex-post expectation in IS continuance context because it is the only belief that is demonstrated to consistently influence user intention across temporal stages of IS use (Davis et al. 1989). Additionally, perceived usefulness has consistently proven to be an important construct in longitudinal adoption that impacts post-adoption behaviour (continued adoption intention) (Bhattacherjee, 2001a; b; Davis et al., 1989; Kang & Lee, 2010; Kim, 2010; Limayem & Cheung, 2008). Therefore, perceived usefulness is expected to have a direct and positive effect on continuance intention.

Trust. Both academicians and practitioners have identified trust as the key to understanding the relationship between customers and websites (Cyr, Kindra, & Dash, 2008; Salo & Karjaluoto, 2007; Yeh & Li, 2009). Trust is a multidimensional construct that is typically associated with qualities such as integrity, benevolence, empathy, competence, reliability, and predictability (Cheung & Lee, 2006; De Wulf, Odekerken-Schröder, & Iacobucci, 2001; Gefen, Karahanna, & Straub, 2003; Hsu & Wang, 2008; Mayer, Davis, & Schoorman, 1995; McKnight, Cummings, & Chervany, 1998; Mitrega & Katrichis, 2010). Mayer, Davis, and Schoorman (1995) posited, “the need for trust only arises in a risky situation” (p. 711); trust would not be needed if actions could be undertaken with complete certainty and no risk. Mayer et al. also conceptualized trust as the follows:

The willingness of a party to be vulnerable to the actions of another party based on the expectations that the other will perform a particular action important to the trust or, irrespective of the ability to monitor or control that other party. (p. 712)

The importance of trust is dignified in highly uncertain e-commerce environments because customers might not repurchase goods from an online shopping website once they distrust in that website (Yeh & Li, 2009). Gefen et al. (2003) posited that trust could help consumers in the face of online transactions to reduce the complexity of its uncertain risk. The present research, consistent with prior studies, captured both the view of trust in a specific party and reliability of the transaction medium and defined trust as online shoppers’ willingness to depend on the online shopping website based on their past perceptions of its integrity, benevolence, reliability, and predictability. Trust in a partner is the antecedent of dedication-based relationship maintenance and is widely accepted and recognized in the relationship marketing literature (Bendapudi & Berry, 1997; Odekerken-Schröder & Bloemer 2004). However, in e-commerce market, customers are vulnerable because of the perception of online transactional security and privacy with service providers. Therefore, mutual trust minimises risk and facilitates interdependence (Mayer et al., 1995). Further, customers are likely to establish, develop, and continue with a service provider when the relationship is strong. Trust is not only a short-term issue, but also the most significant long-term barrier to realising the potentials of an online context from the psychological commitment perspective. In addition, trust tends to develop over time,
depending on an ongoing relationship that is built between two parties that have been satisfied over time in their interactions. Thus, trust accounts for resource investments because trust in the procedures and transactions results from past investments in time and effort. Accordingly, this paper suggested that trust could also be considered a means of constraint-based relationship maintenance.

Chiu, Chang, Cheng, and Fang (2009) found a positive association between trust with customers’ perceived usefulness and continued intention to use an online shopping website. Prior studies have also concluded that web-enabled IS must satisfy the conditions of continued consumer trust, loyalty, and retention (Cyr et al., 2008). When online shoppers trust an online shopping website, they believe that it is capable of protecting their privacy, selling high quality products, and safely completing online transactions. Additionally, when trust is established, customers are more likely to form a continuance intention toward that online shopping website. Therefore, users’ trust in an online shopping website is expected to have a direct and positive effect on their continuance intentions.

**Perceived switching costs.** The level to which an individual believes that switching service providers would incur a certain cost to is the perceived as switching costs. Such costs can be a significant mobility barrier when considering an alternative relationship (Morgan & Hunt, 1994). Perceived switching costs can be defined from the customer perspective as time, money, and effort that is associated with changing service providers (Jones et al., 2000). Therefore, perceived switching costs can be defined from a customer perspective as any cost that is associated with the migration to a new supplier, vendor, or service provider. The higher anticipation of switching costs, the higher their interest in maintaining a quality relationship with the current provider. Furthermore, according to the theory of planned behaviour (TPB; Ajzen, 1991), perceived switching costs can be regarded as an external control belief or perceived behavioural control, which directly predicts behavioural intention. In the present research, perceived switching costs was defined as online shoppers’ perceptions of the time, money, and effort that is associated with changing to a new online shopping website.

Previous studies have suggested that switching costs results from consumer perceptions of the time, money, effort, and any form of psychological cost that is associated with switching current service providers. These perceptions influence customer retention by deterring customers from changing current service providers (Anderson & Sullivan, 1993; Jones et al., 2000; Kim & Son, 2009; Ng & Kwhak, 2010). In this study, cost was in the form of monetary measurement and included factors such as psychological issues and replacement costs. Once a transaction relationship is established, customers often become more dependent on their current service provider because of high switching costs. Specifically, when switching costs is perceived to be higher than switching benefits, an online shopper is more likely to stay than to switch, despite any dissatisfaction with the current online shopping website. Therefore, user’ perceptions of switching costs will affect their continuance intentions.

**Interrelationships between the Drivers of Continuance Intention**

In consumer behaviour literature, ECT’s extant expectation is associated with satisfaction. Similarly, IS continuance research has also proposed a positive relationship between post-adopter expectations (perceived usefulness) and post-adopter affect (satisfaction) (Bhattacherjee, 2001a; b; Davis et al., 1989; Kang & Lee, 2010; Kim, 2010; Limayem & Cheung, 2008). Online shoppers develop initial expectations toward an online shopping website before using that website. After they actually purchase goods from the website, they will update their expectations of that website’s performance based on their direct online shopping experiences. When the website outperforms, relative to the consumer’s initial expectations, post-adoptive expectations are confirmed; otherwise, post-adoptive expectations are disconfirmed. Therefore, perceived usefulness is expected to have a direct and positive effect on satisfaction.

According to post-purchase cognitive dissonance, online shoppers try to reassure themselves that their choice was a wise one; that is, they attempt to reduce their uncertainty or anxiety about making a wrong purchasing decision on an online shopping website based on their past purchase experiences. Customers who are satisfied with the vendor will believe that the vendor will deliver what they expect (Oliver, 1980). These customers are also more likely to feel a strong psychological bond with a particular vendor because leaving this relationship would incur a level of risk because another vendor may not fulfill their needs in the same manner (Tsai & Huang, 2007). Therefore, online shoppers prefer a website that they have used before to decrease cognitive dissonance, which may serve as a force that makes termination of the relationship more costly (Odekerken-Schröder & Bloemer, 2004; Tsai & Huang, 2007). As switching increased costs, online shoppers are less likely to change an online shopping website. Accordingly, this study predicted that online shoppers who reported higher levels of satisfaction with an online shopping website would be more likely to perceive higher switching costs. Therefore, users’ satisfaction is expected to have a direct and positive effect on their perceptions of switching costs.

Previous research has suggested a positive relationship between customer satisfaction and trust (e.g., Cyr et al., 2008; Smith & Barclay, 1997; Yeh & Li, 2009). When online shoppers perceive an online shopping website as trustworthy, they perceive that their transactions will result in positive outcomes or, at least, not result in negative ones. Levels of online shopper satisfaction are heightened.
Goodhue and Thompson (1995) suggested that customers would perceive a system as more useful and job performance would be enhanced if system characteristics matched the requirements of the task and delivered significant value to the user. When online shoppers trust their online shopping website and have the perception that shopping online at that website is beneficial to their shopping performance and effectiveness, they will eventually believe that online shopping is useful (Gefen et al., 2003). Chiu et al. (2009) proposed a positive association between customer trust and perceived usefulness. Following this literature, the current study proposed that user trust in an online shopping website would positively influence perceived usefulness, enable online shoppers to become vulnerable to shopping online, and ensure that they received the expected interaction.

In the context of online environments, researchers have defined trust as the belief that allows consumers to willingly become vulnerable to online shopping websites after having taken the websites’ characteristics into consideration (Mayer et al., 1995). Online shoppers are vulnerable and likely to expose themselves to loss if they provide private information on an online shopping website, which makes them vulnerable to privacy attack or credit card fraud. Specifically, trust reduces uncertainty in an online environment in which online shoppers feel vulnerable because they know they can rely on the trusted online shopping website. As online shoppers develop trust in a reliable online shopping website, the psychological costs of switching to another website increases (Ng & Kwahk, 2010). Accordingly, users’ trust in an online shopping website will affect satisfaction, perceived level of usefulness, and their perceptions of switching costs.

**Relationship between and Antecedents of Dedication and Constraint-based Influences**

**Confirmation of Task-Technology Fit (TTF).** User confirmation of TTF refers to the degree to which a technology assists an individual in performing that individual’s portfolio of tasks is better than the individual’s expectations. Additionally, ECT suggests that positive or negative confirmation results when perceived performance is compared to expectations (Anderson & Sullivan, 1993; Oliver, 1980). Conversely, if the characteristics of an online shopping website do not assist the abilities of an individual in meeting the requirements of his or her online shopping transactions, negative confirmation of TTF occurs. Spreng, MacKenzie, and Olshavsky (1996) developed an updated consumer satisfaction model, which is the complement to the ECT model and suggests that a higher level of positive confirmation of TTF indicates a higher satisfaction of product attributes and information, thereby influencing overall satisfaction. Further, ECM relates the constructs of perceived usefulness and satisfaction to the extent of confirmation of a user’s TTF about an online shopping website, whereby expectations that are fulfilled drive greater satisfaction and perceived usefulness (Bhattacherjee, 2001a; b). Accordingly, users’ confirmation of TTF will affect satisfaction, and perceived level of usefulness.

**Technical Bonds**

**Perceived operational competence.** Perceived operational competence refers to the perceived ability of an online shopping website to deliver high-quality, daily operational performance (Balasubramanian et al., 2003). This belief is one dimension of trusting beliefs (Mayer et al., 1995), which captures the responsiveness of the IS in providing corresponding feedback. This belief also is a determinant of service quality (Parasuraman, Zeithaml, & Berry, 1985). Perceived operational competence captures the responsiveness of an online shopping website that fills orders in a timely manner and provides customers with timely feedback. This also refers to the ability of online shopping providers to offer sufficient, timely, and accurate transaction information (DeLone & McLean, 1992). Consumers might find that such services are time-critical, place-critical, or both. Therefore, the present research defined perceived operational competence as online shoppers’ perceptions of the skills, abilities, and expertise of the online shopping website.

The construct, perceived operational competence, captures the beliefs of the TAM and IS success models (DeLone & McLean, 1992). Therefore, development of relationships of perceived operational competence with another construct is based on Balasubramanian et al.’s (2003) suggestions. Many previous studies have found a significant relationship between perceived operational competence and trust (e.g., McKnight et al., 1998). Users who perceive that an online shopping website meets high standards of operational competence will place greater trust in the vendor. Additionally, customers develop trust based on perceived competence, benevolence, and integrity of the service provider (Mayer et al., 1995; McKnight et al., 1998).

Aydin and Özer (2005) showed that perceived service quality is positively associated with perceived switching costs. Only those online shoppers who perceive their online shopping website to be operating at a high level of operational competence also perceive that switching to another online vendor would incur increased costs. Aydin and Özer also suggested that operational competence is positively associated with loyalty through three important mediators: corporate image, perceived switching costs, and trust. Thus, users’ perceptions of the operational competence of the online shopping website will affect their trust in the shopping website, and their perceptions of switching costs.

**Perceived website interactivity.** In an online shopping environment, as contact with salespeople is reduced, the development and establishment of effective communication channels to reduce, or compensate, for the virtual nature
of the online shopping environment and effectively demonstrate product information to online shoppers becomes a required factor for online shopping websites. Therefore, one important feature of a website is interactivity (Song & Zinkhan, 2008). Online user perceptions of interactivity in a communication scenario offer many possibilities for facilitation of relationship marketing, creation of stronger brand identity, and creation of a compelling consumer online shopping transaction experience.

The definition of interactivity varies in the literature and has evolved into two major streams. One stream defines interactivity from the communicator’s (e.g., marketer’s) perspective and tends to treat it as an objective, actual, feature-based, and structural interactivity, whereas the other defines interactivity from the audience’s (e.g., consumer’s) perspective and tends to treat it as a subjective, perceived, perception-based, ad experiential interactivity (Wu, 2006). One of the most cited definitions of interactivity by researchers is from Steuer’s (1992) study. Specifically, from the communicator’s (e.g., marketer’s) perspective, Steuer defines interactivity as “the extent to which users can participate in modifying the form and content of a mediated environment in real time” (p. 84). This refers to the “malleability of a medium’s form and content” (p. 85). He further suggested that interactivity consists of three factors: speed, range, and mapping. On the other hand, McMillan and Hwang (2002) conceptualized interactivity as perceived interactivity of websites based on users’ perceptions of direction of communication, which encompasses the concepts of responsiveness and exchange. User control includes functions such as participation and search engines and the concept of time embraces issues such as timely feedback and time required for information retrieval. By conceptualizing and measuring the perceived interactivity of websites by site visitors, Wu (2006) defined interactivity as “a psychological state experienced by a site user during his or her interaction with the website” (p. 91). He also suggested that interactivity consists of three dimensions: perceived control, perceived responsiveness, and perceived personalization. Based on previous studies, the core dimensions of perceived interactivity include perceived user control, two-way communication, and perceived responsiveness. Following Wu’s (2006) definition, the present research defined perceived website interactivity as online shoppers’ perceptions of the ability for the online shopping website to provide or share information with the online shopper in a timely manner.

In an online shopping context, interactivity with the online shopping website helps increase online shopper trust by providing greater control over information search and acquisition when making purchase decisions (Wu, Hu, & Wu, 2010). When online shoppers encounter an online shopping website, the more comfortable they feel, the higher their level of perceived control, which positively influences their confidence in their judgments. Previous studies have also found that online shoppers’ perceptions of trust in the online shopping website are likely to increase when an online shopping website responds to their transactions and electronic complaints quickly, provides fast and accurate answers to their inquiries, and informs them about new offerings (Vatanasombut, Igbaria, Stylianou, & Rodgers, 2008; Wu et al., 2010). Regarding the mediator role of trust, Vatanasombut et al. (2008) proposed that trust might mediate perceived website interactivity and IS continuance intention.

A highly interactive online shopping website creates higher switching costs for online shoppers (Chang & Chen, 2008; Rowley & Slack, 2001). Specifically, the more confidential, or private information, online shoppers disclose on an online shopping website and the more they are familiar with this environment, the higher the switching costs. If online shoppers change to another service provider, they must rebuild personal data and mutual understanding. This could decrease online shoppers’ willingness to transfer to another service provider. Based on the reviewed literature, the extent of users’ perceived website interactivity will affect their trust in the online shopping website, and their perceptions of switching costs.

**Social Bonds**

**Perceived relationship investment.** The construct perceived relationship investment is defined as consumers’ perceptions of the extent to which vendors’ efforts to create psychological bonds and their application of other tangible resources, for the purpose of encouraging or inducing customers to stay in that relationship, setting up an expectation of reciprocation (Smith & Barclay, 1997; Wang & Head, 2007). De Wulf et al. (2001) defined perceived relationship investment as “a consumer’s perception of the extent to which a retailer devotes resources, efforts, and attention aimed at maintaining or enhancing relationships with regular customers that do not have outside value and cannot be recovered if these relationships are terminated” (p. 35). When a vendor makes a relationship investment of any kind on behalf of a customer, the quality of the relationship may improve, which, in turn, may increase customers’ loyalty and continuance intentions (De Wulf et al., 2001). Following the definitions of previous studies, the present research defined perceived relationship investment as online shoppers’ perceptions of the online shopping website’s efforts to create a psychological bond with regular consumers and the application of other intangible resources to encourage or induce consumers to continue the relationship.

Stronger evidence can be found for the impact of relationship investment on trust. For example, De Wulf et al. (2001) found that specific investments, made by one partner, result in increased trust. Wang and Head (2007) also suggested that if customers consider that a provider is making an investment in them, they, in turn, would make a similar investment in the provider, which leads to loyalty.
Research in the online retailing context has shown that the greater online shoppers’ perceptions of the online shopping website’s relationship investment in them, the greater the level of trust toward online retailers (Wang & Head, 2007).

Increased investment in a relationship should increase the perceived cost of switching to another exchange relationship. As individual investment in relationships increase, some investments are likely to be relationship-specific. Additionally, if relationship-specific investments are substantial, they will be perceived as indicators of the costs required to establish and maintain an alternate relationship, not only because they are relationship-specific (and thus would be lost), but also because they would likely be sustained in the alternate relationship. As a result, relationship-specific investments help increase customer dependence and, thus, increase switching costs (Jones et al., 2000).

When considering the effect of relationship investment on relationship intention, Wang and Head (2007) showed that the estimate of the direct path from relationship investment to relationship intention is very small and non significant. Accordingly, we proposed that trust and perceived switching costs would mediate an indirect effect of investment on continuance intention. Thus, users’ relationship investment will affect their trust in the online shopping website, and their perceptions of switching costs.

Community building. The construct, community, emerged from marketing and consumer behaviour literature. Both marketers and researchers have increasingly recognized ways in which online shops can support and strengthen customer loyalty by building a strong web community that is centred on customers (Hsu & Lu, 2007; McAlexander, Schouten, & Koenig, 2002). Community represents a group of people who have something in common that differentiates them from other groups (Hsu & Lu, 2007; McAlexander et al., 2002). McAlexander et al. (2002) conceptualized and empirically tested a comprehensive model of brand community, which they characterised as a web of relationships that connect customers to a firm, its brand and, under its umbrella, to its products and services, associated institution, and other customers. Their study suggested that brand community motivates strong loyalty and a sense of belonging to a particular community among customers. Additionally, the construct community building reflects the degree to which customers felt connected to other customers, marketers, and other parties in the community (Tsai & Huang, 2007). As such, the current study expanded the concept of brand community to include various participants (customers, marketers, and other interested parties) and the set of ties that are associated with them (shopping on a particular online website). In this study, community building was defined as the degree to which online shoppers are attracted to the online shopping website and to one another.

Many e-commerce websites recognize that community members feel a connection to a particular online shopping website and a stronger connection to one another increases their intentions to share a mutual attraction and admiration for one another. When this occurs, the more customers behave in a friendly, trusting, and caring manner toward one another (Casaló, Flavián, & Guinalíu, 2007; Tsai & Huang, 2007). Specifically, for community members who belong to a particular online shopping website, social interactions occur through virtual media, such as Internet bulletin boards or chat-rooms, and via participation in virtual community activities. Virtual communities provide a place for information exchange to foster relationships with customers. Therefore, it is plausible that the more cohesive the community that accesses an online shopping website, the more its members will share a mutual attraction and admiration for one another and behave toward one another in a friendly, trusting, and caring manner (Mudrack, 1989). McAlesterd et al.’s (2002) study also confirmed that customers reciprocate with increased loyalty and trust. As a result, the proposed research model postulated that community building would be associated with trust in an online shopping website.

Virtual community is very popular and typical of customer lock-in. When consumers express their dependence on a certain brand in the virtual community, they are likely to meet others in the community with the same tendencies and with whom they can share their mutual experiences and other relevant information. As such, customers are able to get instant advice to make the right purchase decision, almost like in real life. Therefore, we proposed that when consumers’ sense of belonging to a virtual community is high, interaction with other members of the community is strong, and when the probability of mutual feelings of friendship with other community members is high, consumer knowledge of goods and services offered as well as consumer identification with the website will increase.

According to a study by Hsu and Lu (2007), users’ perceptions of belonging to a particular group will have an indirect effect that is mediated by customer preferences on loyalty toward an online gaming community. Therefore, we suggested that community building would have an indirect effect that is mediated by trust and perceived switching costs, on continuance intentions. Thus, users’ perceptions of community building will affect their trust in the online shopping website, and their perceptions of switching costs.

Intimacy: Intimacy refers to the “the feelings of closeness, connectedness, and bondedness one experiences in loving relationships” (Sternberg, 1986, p. 119). According to Sternberg (1986), the key to maintaining a long-term relationship is to establish a high level of intimacy that is based on mutual trust and respect. Therefore, each partner must feel secure when disclosing his or her feelings and thoughts without any fear of judgement, evaluation, or ridicule. The term intimacy often refers to sexual feelings and physical contact, which are only experienced in the context of romantic relationships. However, some researchers
have recognized and investigated nonsexual dimensions of intimacy, which can be widely found in most relationships. In the context of web-based services, intimacy refers to the “feelings of closeness and emotional bonding, involving intense liking, moral support, and the ability to tolerate flaws in the service” (Lee & Kwon, 2011, p. 348). Here, intimacy is the feelings of closeness and connectedness that are coupled with affection developed in a relationship that leads to “the experience of warmth.” Thus, intimacy between an online shopping website and online shoppers might form in similar ways as Sternberg’s (1986) love paradigm via positive consumption interactions. Additionally, the online shopping website should understand their customers and meet their special needs; this would lead to long-term social bonds (Hsu & Wang, 2008; Perry et al., 2002; Rao & Perry, 2002). In this study, we focused on nonsexual dimensions of intimacy and conceptualized intimacy as the degree of online shoppers’ perceptions of closeness, connectedness, and bondedness in the online shopping website, which is similar to Lee and Kwon’s (2011) definition and consistent with Sternberg’s (1986) definition.

Several researchers have identified intimacy as a fundamental component of relationship quality (e.g., satisfaction, trust, and commitment) (Bügel, Verhoef, & Buunk, 2011; Hsu & Wang, 2008). Further, intimacy and trust are interrelated: online shoppers tend to develop a positive attitude toward those with whom they have some prior positive consumption transactions (Hsu & Wang, 2008; Lee & Kwon, 2011). The more positive the consumption transactions, interactions, and information sharing with an online shopping website, the greater the motivation of online shoppers to foster the intimate relationship with the online shopping website and the more trust they will develop toward the online shopping website (Hsu & Wang, 2008). In other words, once online shoppers invest in a closer relationship with an online shopping website, the relationship can serve to increase the trust online shoppers have in the online shopping website (Jones et al., 2000).

Intimacy refers to social bonds that form after repeated interactions between customers and service providers, which lead to long-term relationships (Lee & Kwon, 2011). If customers perceive that their service provider cares for them, understands them, and meets their special needs, feelings of closeness, connection, and intimacy are invoked, which increases the customers’ emotional investments in the service provider and, in turn, enhances the magnitude of the switching costs (Hsu & Wang, 2008; Perry et al., 2002; Rao & Perry, 2002).

The mediating role of trust and perceived switching costs in an intimate and loyal relationship still needs to be investigated. To build on this work, it is believed that when online shoppers trust in the online shopping website based on prior positive consumption transactions, they are likely motivated to maintain a long-term relationship with that online shopping website. In their empirical examination of mobile phone users in Taiwan, Liu et al. (2011) suggested that trust is positively related to loyalty and intimacy is an antecedent to trust. Therefore, it was hypothesized that trust would mediate the relation between intimacy and loyalty. In addition, when online shoppers’ perceptions of switching costs are high because their online shopping website can cultivate intimacy with them, this would discourage online shoppers from changing their online shopping website, therefore, they are likely motivated to maintain a long-term relationship with their current online shopping website. Thus, it was hypothesized that online shoppers’ perceptions of switching costs would mediate the relation between intimacy and loyalty. Thus, users’ perceptions of intimacy will affect their trust in the online shopping website, and their perceptions of switching costs.

**Methods**

**Participants**

Participants included 737 Chinese online shoppers ages 12 to 50 years ($M = 25.26, SD = 6.17$), 413 were female and 324 were male. With regard to education, most participants had higher than undergraduate degrees; 52.92% of the total sample.

**Measurements**

To test the hypotheses discussed above, we first surveyed users’ intentions to continue online shopping. The questionnaire was designed to capture 11 constructs that are presented in the proposed model and drawn from prior studies to ensure content validity. The content validity of the variables was considered adequate. To increase reliability, we operationalised each construct with multiple items. The operationalisation of perceived operational competence was adapted from a study by Balasubramanian et al. (2003), modified to fit the online shopping context, and includes five items. Measures for perceived website interactivity consisted of four items based on Yilmaz and Hunt (2001) and Morgan and Hunt (1994). This measure was modified to fit the online shopping context. A 3-item scale, adapted from De Wulf et al. (2001), was used as the measure of perceived relationship investment. Community building was measured by a 3-item scale based on Tsai and Huang (2007). Intimacy was adapted from Lee and Kwon (2011) and it included three items. Trust was adapted from Gefen et al. (2003) and included three items. Perceived switching cost was adapted from Jones et al. (2000) and included three items. The 3-item scale for confirmation of TTF and the 2-item scale for continuance intention were adapted from Bhattacherjee (2001a). Measures for perceived usefulness consisted of four items that were based on Davis et al. (1989). Satisfaction was adapted from Spreng et al.
(1996) and included four items. All research constructs were measured using multiple-item 7-point Likert scales adapted from previous studies, with strongly disagree (1) to strongly agree (7) as anchors.

**Pilot Test**

We first conducted a pilot test to validate our initial version of the instrument. The purpose of this pilot test was to pre-test the face validity of our initial version of the instrument. Based on feedback received, minor changes were made to the instructions and wording of some of the items. The final questionnaire was completed to reflect the online shopping setting. A detailed overview of the revised scales is provided in Appendix.

**Procedures**

The respondents were recruited from Chinese public forums in March 2010. Following recruitment, an e-mail

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### Table 1

**Sample Demographics**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Items</th>
<th>This study</th>
<th>iResearch (2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>413</td>
<td>56.04</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>324</td>
<td>43.96</td>
</tr>
<tr>
<td>Age</td>
<td>&lt;18</td>
<td>108</td>
<td>14.65</td>
</tr>
<tr>
<td></td>
<td>18-24</td>
<td>282</td>
<td>38.26</td>
</tr>
<tr>
<td></td>
<td>25-30</td>
<td>149</td>
<td>20.22</td>
</tr>
<tr>
<td></td>
<td>31-35</td>
<td>78</td>
<td>10.58</td>
</tr>
<tr>
<td></td>
<td>36-40</td>
<td>70</td>
<td>9.50</td>
</tr>
<tr>
<td></td>
<td>&gt;40</td>
<td>50</td>
<td>6.79</td>
</tr>
<tr>
<td>Education level</td>
<td>Junior high school and below</td>
<td>37</td>
<td>5.02</td>
</tr>
<tr>
<td></td>
<td>Senior high school</td>
<td>120</td>
<td>16.28</td>
</tr>
<tr>
<td></td>
<td>Junior college</td>
<td>190</td>
<td>25.78</td>
</tr>
<tr>
<td></td>
<td>Undergraduate and above</td>
<td>390</td>
<td>52.92</td>
</tr>
<tr>
<td>Length of using online shopping service</td>
<td>3 month to 1 year</td>
<td>62</td>
<td>8.41</td>
</tr>
<tr>
<td></td>
<td>1 to 2 years</td>
<td>83</td>
<td>11.26</td>
</tr>
<tr>
<td></td>
<td>3 to 5 years</td>
<td>453</td>
<td>61.47</td>
</tr>
<tr>
<td></td>
<td>More than 5 years</td>
<td>139</td>
<td>18.86</td>
</tr>
<tr>
<td>Most purchased online shopping websites</td>
<td>Taobao</td>
<td>187</td>
<td>25.37</td>
</tr>
<tr>
<td></td>
<td>Jingdong Mall (360buy)</td>
<td>134</td>
<td>18.18</td>
</tr>
<tr>
<td></td>
<td>Amazon</td>
<td>109</td>
<td>14.79</td>
</tr>
<tr>
<td></td>
<td>DangDang</td>
<td>95</td>
<td>12.89</td>
</tr>
<tr>
<td></td>
<td>M18</td>
<td>61</td>
<td>8.28</td>
</tr>
<tr>
<td></td>
<td>Vanel</td>
<td>43</td>
<td>5.83</td>
</tr>
<tr>
<td></td>
<td>139shop</td>
<td>38</td>
<td>5.16</td>
</tr>
<tr>
<td></td>
<td>Redbaby</td>
<td>28</td>
<td>3.80</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>42</td>
<td>5.70</td>
</tr>
<tr>
<td>Member history of the online shopping website</td>
<td>3 month to 1 year</td>
<td>85</td>
<td>11.53</td>
</tr>
<tr>
<td></td>
<td>1 to 2 years</td>
<td>175</td>
<td>23.74</td>
</tr>
<tr>
<td></td>
<td>3 to 5 years</td>
<td>292</td>
<td>39.62</td>
</tr>
<tr>
<td></td>
<td>More than 5 years</td>
<td>185</td>
<td>25.11</td>
</tr>
<tr>
<td>The number of times of purchasing during the past 3 months</td>
<td>1–3 times</td>
<td>331</td>
<td>44.91</td>
</tr>
<tr>
<td></td>
<td>4–6 times</td>
<td>170</td>
<td>23.07</td>
</tr>
<tr>
<td></td>
<td>7–9 times</td>
<td>133</td>
<td>18.04</td>
</tr>
<tr>
<td></td>
<td>10 times</td>
<td>103</td>
<td>13.98</td>
</tr>
</tbody>
</table>
was sent to 1,000 users who voluntarily signed up for an
e-mail list in May 2010. The e-mail consisted of an
invitation to volunteer to participate in the study and
complete the final questionnaire. Potential respondents were
reminded not to take the survey if they had no experience
with online shopping websites during the past 3 months.

Following a single round of data collection, and after
excluding incomplete responses, 802 samples were received,
which resulted in a response rate of 80.2%. Sixty-five
participants indicated that they had not used an online
shopping service during the 3 months prior to the survey.
Eventually, following Bhattacherjee and Premkumar’s
(2004) definition of continuous users as those with more
than 3 months experience, we eliminated those with less
than 3 months experience, which reduced the sample size
to 737 and resulted in an overall response rate of 73.7%.

Table 1 shows the respondent demographics. These
sample demographics results are consistent with a
nationwide sample of online shoppers as reported in the
(iResearch, 2009). Therefore, the generalisability of the
empirical results is justified. All scales yielded Cronbach
α’s that exceeded the standard acceptance level of .8 (see
Appendix), which indicates that the data are highly reliable.

Data Analysis and Results

This study examined the hypothesized models using
structural equation modelling (SEM). When using SEM for
data analysis, the model evaluation should consist of a
measurement model analysis and structural model analysis.
First, the measurement model analysis utilizes empirical
parameters to examine whether all measured variables
correctly reflect the potential research construct of the
model. In the current study, the confirmatory model was
used to determine whether the research model explained
the observed data. Next, a structural model analysis
examines the global fit of the observed data to the research
model as well as dependencies and correlations among all
potential variables. A maximum likelihood method was
used to estimate the model parameters.

Assessment of the Measurement Model

Confirmatory factor analysis (CFA) was used to analyse
construct validity. There are three stages to assess construct
validity. First, a measurement model should be assessed
for goodness-of-fit. All fit indices suggested that the model
provided a reasonable fit to the data ($\chi^2 (574) = 868.38, p <
.001; \chi^2/df = 1.51; GFI = .94; AGFI = .93; NFI = .97; NNFI =
.99; CFI = .99; RMSEA = .026; RMSR = .031$). The
related goodness-of-fit measures and their corresponding
recommended values are shown in Table 2.

Second, three criteria, individual item reliability, composite reliability (CR), and average variance extracted
(AVE), were used to assess convergent validity of the
theoretical constructs in this research (Baggozi & Yi, 1988).
The CR is a measure of internal consistency comparable to
the coefficient alpha (Fornell & Larcker, 1981). Additionally,
the AVE is a summary measure of convergence among
the items. All CR estimates were .81 or higher and all the AVEs
were .59 or higher, which exceeds the benchmark of .50 as
recommmended by Fornell and Larcker (1981). The individual
item reliability was assessed by examining the item-to-
construct loadings for each construct with multiple indicators,
with the exception of type of power. The internal consistency
reliabilities of each item exceeded the benchmark of .50
(Hair, Anderson, Tatham, & Black, 1992; see Appendix).
Finally, CFA was used to assess discriminant validity, which

![Table 2: Assessment of Model Fit](image)

<table>
<thead>
<tr>
<th>Fit Indices</th>
<th>Recommended Value</th>
<th>Measurement model</th>
<th>Structural model</th>
<th>Original ECM</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$</td>
<td>N/A</td>
<td>868.38</td>
<td>982.38</td>
<td>118.82</td>
</tr>
<tr>
<td>df</td>
<td>N/A</td>
<td>574</td>
<td>593</td>
<td>60</td>
</tr>
<tr>
<td>$\chi^2/df$</td>
<td>≤ 3.0</td>
<td>1.51</td>
<td>1.66</td>
<td>1.98</td>
</tr>
<tr>
<td>GFI</td>
<td>≥ .9</td>
<td>.94</td>
<td>.93</td>
<td>.98</td>
</tr>
<tr>
<td>AGFI</td>
<td>≥ .8</td>
<td>.93</td>
<td>.92</td>
<td>.96</td>
</tr>
<tr>
<td>NFI</td>
<td>≥ .9</td>
<td>.97</td>
<td>.96</td>
<td>.99</td>
</tr>
<tr>
<td>NNFI</td>
<td>≥ .9</td>
<td>.99</td>
<td>.98</td>
<td>.99</td>
</tr>
<tr>
<td>CFI</td>
<td>≥ .9</td>
<td>.99</td>
<td>.98</td>
<td>.99</td>
</tr>
<tr>
<td>RMSEA</td>
<td>≤ .08</td>
<td>.026</td>
<td>.030</td>
<td>.036</td>
</tr>
<tr>
<td>RMSR</td>
<td>≤ 1.0</td>
<td>.031</td>
<td>.075</td>
<td>.030</td>
</tr>
</tbody>
</table>

Note. $\chi^2$: Chi-square; df: degrees of freedom; GFI: goodness of fit index; AGFI: adjusted goodness of fit index; NFI: normed fit index;
NNFI: non-normed fit index; CFI: comparative fit index; RMSEA: root mean square error of approximation; RMSR: root mean square
residual.
is the degree to which a construct differs from other constructs. To determine discriminant validity, we compared the shared variances (i.e., $R^2$) between the variables with AVEs for individual variables (Fornell & Larcker, 1981). Table 3 shows that all AVE values were greater than their variances, which provides evidence of discriminant validity. The results for convergent and discriminant validity are shown in Table 3 and indicate that the measurement model had acceptable construct validity.

**Assessment of the Structural Model**

With an adequate measurement model, the proposed hypotheses were tested via structural equation modelling. There were three stages to assess the causal structure of the proposed model in this study. First, the structural model was evaluated via the goodness-of-fit indices. All goodness-of-fit indices were within the acceptable levels, $\chi^2_{(593)} = 982.38$, $p < .001$; $\chi^2/df = 1.66$; GFI = .93; AGFI = .92; NFI = .96; NNFI = .98; CFI = .98; RMSEA = .030; RMSR = .075 (see Table 2). Hence, this model fit reasonably well with the observed data. Second, the standardized path coefficients and their statistical significance in this model were estimated. Figure 2 shows the structural relationships among the variables and standardized path coefficients. All hypothesized paths were significant.

Finally, as a measure of the entire structural equation, an overall coefficient of determination ($R^2$) was calculated, which demonstrated that the model explained a substantial amount of variance in the outcome variables, which is similar to that found in the multiple regression analysis. Satisfaction ($\beta = .36, p < .001$), perceived usefulness ($\beta = .15, p < .001$), trust ($\beta = .24, p < .001$), and perceived switching costs ($\beta = .37, p < .001$) predicted continuance intention. Together, these relationships explained 72% of the total variance. Perceived usefulness ($\beta = .19, p < .001$), confirmation of task-technology fit ($\gamma = .21, p < .001$), and trust ($\beta = .32, p < .001$) predicted satisfaction. Together, these variables explained 34% of the variance in satisfaction. Confirmation of task-technology fit ($\gamma = .20, p < .001$) and trust ($\beta = .45, p < .001$) predicted perceived usefulness. Together, these variables explained 24% of the total variance. Perceived operational competence ($\gamma = .24, p < .001$), perceived website interactivity ($\gamma = .11, p < .001$), perceived relationship investment ($\gamma = .18, p < .001$), community building ($\gamma = .11, p < .01$), intimacy ($\gamma = .08, p < .001$), satisfaction ($\beta = .14, p < .001$) and trust ($\beta = .18, p < .001$) significantly influenced perceived switching costs and jointly explained 44% of the total variance in perceived switching costs.

**Testing the Role of Mediators**

In this study, all the six independent variables were posited to exert both a direct and indirect effect on continuance intention. Indirect effects are exerted through the mediating variables constraint-based and dedication-based influences. Table 4 summarizes the direct, indirect, and total effects of each of the six exogenous variables on
continuance intention. The data show that the six antecedents of continuance intention were fully mediated by constraint and dedication-based influences. Perceived operational competence had the strongest total effect (.20) on continuance intention and had both a direct effect (.00) and indirect effect (.20). In this sense, of the six exogenous variables in the model, this study found that perceived operational competence is the best predictor of continuance intention. Previous research had highlighted the importance and criticality of perceived operational competence in influencing users’ post-adoption decisions (e.g., Balasubramanian et al., 2003). This is important because, without proper perceived ability of an online shopping website to deliver high-quality, daily operational performance for online shoppers, it is difficult for online shoppers to develop trust in the online shopping website and perceived switching costs involved in any transactions. This might affect online shoppers’ continuance intentions toward the
online shopping website. Further, perceived relationship investment exerted the second strongest total effect on continuance intention (.18) and yielded both a direct effect (.00) and indirect effects .18. In this sense, perceived relationship investment was the second strongest predictor of continuance intention.

Assessing the Extended ECM Using the Original ECM

To determine whether our research model is an improvement of past models, we compared our research model with the original ECM model, $\chi^2(60) = 118.82, p < .001; \chi^2/df = 1.98; GFI = .98; AGFI = .96; NFI = .99; NNFI = .99; CFI = .99; RMSEA = .036; RMSR = .030$ (see Figure 3; Table 2). The original ECM model explained 55% of continuance intention compared to 72% in the extended ECM model. The original ECT model accounted for 25% of the satisfaction variance and the extended ECT model explained 34% of the satisfaction variance. The original ECM model explained 7% of perceived usefulness compared to 24% in the extended ECM model. These results support the superiority of our research model.

Discussion and Implications

Discussion of Findings

This research is one of the first attempts to afford researchers a multi-dimensional framework that is designed to help conceptualize, measure, and manage dedication and constraint-based relationships to increase the continuance intention of online shoppers. The purpose of this study incorporated concepts of relationship marketing, IS continuance theory, the investment model, and TTF to
conceptualize dedication and constraint-based variables as significant drivers of shopper loyalty in online contexts. The current study contributes to the online shopping literature in several ways.

**Drivers of Continuance Intention**

With respect to the main objective of the study, the results confirm that both constraint and dedication-based influences are important drivers of the continuance intention toward online shopping websites. From a theoretical perspective, the results suggest the need to extend existing theories of online shopper retention by demonstrating that constraint-based variables are also critical in retaining online shoppers. Furthermore, consistent with the study of Tsai and Huang (2007) and Tsai et al. (2006), perceived switching costs are positively related to online shoppers’ intentions to continue using online shopping websites and has a stronger direct effect ($\beta = .37, p < .001$) than does satisfaction ($\beta = .36, p < .001$). Our findings have implications for theories of e-commerce and IS continuance and indicate that, when online shoppers perceive an online shopping website as unique or consider the switching costs associated with changing are high under two broad categories (i.e., structural and social bonds), they lock themselves into the relationship. Interestingly, our results also show that trust had the strongest total effect on online shoppers’ intentions to continue using the online shopping websites compared to other dedication and constraint-based variables. From a theoretical perspective, the results confirm the claims of Gefen et al. (2003), Mayer et al. (1995), and Yeh and Li (2009) that point to the importance of trust in the presence of uncertainty in an online shopping environment. Specifically, trust in online shopping websites can help online shoppers reduce their perceptions of risk and uncertainty in purchasing products online.

**Interrelationships between the Drivers of Continuance Intention**

A second key contribution of this study was to investigate the complex interrelationships between satisfaction, perceived usefulness, trust, and perceived switching costs. Specifically, few studies have investigated the relationship between satisfaction and perceived switching costs as well as that between trust and perceived switching costs. The current findings confirm that the interrelationships between constraint and dedication-based variables are significant. Moreover, trust emerges as the focal dimension in this construct as it has a direct relationship with satisfaction, perceived usefulness, and perceived switching costs. This result is consistent with Morgan and Hunt (1994), who highlighted the importance of trust in relationship marketing. Our findings are also consistent with the results of Wu and Chen (2005) who found, in an online tax setting, that trust has a stronger influence on attitude (i.e., satisfaction) than do other attitudinal beliefs (i.e., perceived usefulness and confirmation of TTF). Online shoppers’ opinions about the reliability, integrity, and security of their online shopping website remain the strongest factor of overall assessment in relationship quality with a website. Overall, the above findings provide some unique insights into the complex interrelationships between the determinants (i.e., constraint and dedication-based influences) of online shoppers’ intentions to continue using online shopping websites.

**Relationship between and Antecedents of Dedication and Constraint-based Influences**

The present findings confirm that confirmation of TTF drive online shoppers’ perceptions of satisfaction and perceived usefulness significantly. These findings have implications for theories of IS continuance and TTF. Most importantly, these results suggest the need to extend the existing theory of IS continuance to incorporate the link between work-related matters and dedication-based variables (i.e., satisfaction and perceived usefulness) of continued online shopping behaviour.

To understand the formation processes of online shoppers’ constraint-based perceptions, based on the investment model (Jones et al., 2000; Ping, 1993), this research indentified technical bonds (i.e., perceived operational competence and perceived website interactivity) and social bonds (i.e., perceived relationship investment, community building, and intimacy) as drivers of online shoppers’ constraint-based variables. The results from this study show that both technical and social bonds have significant influences on constraint-based variables. Specifically, among the five antecedents of trust, perceived operational competence is also an important predictor of consumer trust beliefs, which confirms the views of trust researchers such as Mayer et al. (1995) who emphasised the influence of perceived ability and perceived expertise on the formation of trust beliefs. Additionally, among the six antecedents of continuance intention, the current study found that perceived operational competence has the strongest total effect on online shoppers’ intentions to continue using the online shopping website (see Table 4). This finding extends previous conceptual discussions on the antecedents of IS continuance (e.g., Roca et al., 2006), which have considered that quality of output of a specific IS is the key to maintaining IS users’ continuance intentions. Accordingly, this study proposed that online shoppers’ assessments of a website’s operational competence would influence evaluations of future interactions to maintain long-term online retailer-buyer relationships. Therefore, online retailers should try to diminish any type of uncertainty among online shoppers.
Further, online retailers should provide shoppers with confirmation of actions such as emails that exemplify the success of a transaction or a description of errors if any occur during the transaction. Steps such as these could enhance online shoppers' trust and convey an impression of vendor competence.

In addition, among the five antecedents of perceived switching costs, perceived relationship investment plays a significant and stronger role than does the other four attitudinal beliefs in determining perceived switching costs. This contrasts with a great deal of research (e.g., De Wulf et al., 2001; Wang & Head, 2007), which has suggested that online shoppers experience a sense of being locked into a relationship when they perceive that their online shopping website devotes resources, effort, and attention aimed at maintaining or enhancing relationships with regular customers. Online shopping websites that offer direct mail, preferential treatment, interpersonal communication, and tangible rewards such as pricing or gift incentives to regular customers have also been found to be the most effective tools in return for customer loyalty (De Wulf et al., 2001).

**The Moderating Role of Constraint and Dedication-Based Influences**

With respect to the third contribution of this study, the current results clearly show that technical bonds (i.e., perceived operational competence and perceived website interactivity) and social bonds (i.e., perceived relationship investment, community building, and intimacy) are expected to have indirect effects, as mediated by the constraint-based variables, on the relationship of trust and perceived switching costs with IS continuance intention. Meanwhile, confirmation of TTF is also expected to have indirect effects, as mediated by dedication-based variables, on the relationship of satisfaction and perceived usefulness with IS continuance intention. From a theoretical perspective, the selected mediators (i.e., satisfaction, perceived usefulness, perceived switching costs, and trust) were appropriate and mediated the effects of confirmation of TTF and technical and social bond variables on IS users' continuance intentions. The model's description of what motivates people to shop online has reasonably strong empirical support.

In summary, we discussed the research findings above more clearly and centrally than other marketing or e-commerce studies have. Taking into consideration the research results presented in this paper, there is strong support for the hypothesized model: the confirmation of TTF and technical and social bond variables can be important characteristics in online shopping by facilitating both constraint and dedication-based relationship building through their effects on satisfaction, perceived usefulness, perceived switching costs, and trust.

**Implications**

In terms of practice contributions, there are important implications in the findings for the online shopping websites to build and manage long-term relationships with their online customers. First, online shopping websites should take notice of the drivers of user motivations in online customer retention programs. In the online shopping environment, both dedication and constraint-based mechanisms are significant drivers in determining online shoppers' continuance intentions. Additionally, this study identified the important areas that online shopping websites should use to help build online customer relationship management; specifically, dedication and constraint-based mechanisms must work together to have a profound effect on the design of online customer retention programs.

This study confirms that trust has the strongest direct effects on dedication-based influences (i.e., satisfaction and perceived usefulness) and the strongest total effect on online shoppers' intentions to continue using an online shopping website. This implies that customers are concerned with ability of the online shopping website to reduce their perceived risk and gain customer trust (Martín & Camarero, 2009). Online customers are motivated to take the safest approach to protect themselves against online fraud (Chiu et al., 2009; Cyr et al., 2008). Therefore, online shopping websites should use effective implementation of website relationship bonds factors (technical and social) such as marketing tools by which trust toward the website can be created and, subsequently, enhance online shoppers' continuance intentions.

This study also confirms that constraint-based mechanisms are valuable marketing strategies to increase customer preferences for the current online shopping websites. Although this study found evidence for a significant effect of perceived switching costs on online shoppers' continuance intentions, the effect of switching costs may be limited because of the large number of online shopping websites that offer similar online shopping services. Bendapudi and Berry (1997) also warned that constraint-based drivers “may render customers more receptive to relationship offers initiated by competitors” (p. 28). Therefore, an online shopping website should adopt both dedication and constraint-based mechanisms to foster online customers' long-term relationships (Bendapudi & Berry, 1997).

Second, our findings indicate that significant trust and perceived switching costs of online shopping websites can be generated by increasing online shoppers' perceptions of technical bonds, including perceived operational competence and perceived website interactivity. These findings imply that online shopping websites should concentrate their efforts on delivering high-quality operational efficiency and effectiveness in searching and executing customer transactions (Chiu et al., 2009). Additionally, such websites
should inform customers via confirmation of messages such as emails or text-messaging services to notify of successful transactions or descriptions of error alerts during a transaction (Mogenahalli, Mahatamanakoon, & Lim, 2008), which may be an advantage when trying to fulfill user expectations. In other words, to increase the level of customer trust and perceived switching costs, online shopping websites should meet the needs of individuals by accurately transmitting product information through help, navigation, and comparison functions. These websites should also ensure that online shoppers’ transactions are easy to use and secure in a reliable and speedy manner (Mayer et al., 1995). On the other hand, online shopping websites should provide more web-enabled interactions such as online salespeople, message boards, email, or social networking tools such as Twitter to keep online shoppers connected with them (Cranefield & Yoong, 2009). Web-enabled interactive tools can provide information and assistance by sending personalized messages to online customers and responding to online customer queries in a timely manner to increase overall service quality and purchase rate (Yeh & Li, 2009).

Third, our findings indicate that significant trust and perceived switching costs of online shopping websites can be generated by increasing online shopper perception of social bonds, including perceived relationship investment, community building, and intimacy. These findings imply that online shopping websites can increase online shoppers’ relationship investments with strategic loyalty programs; for example, tangible rewards (Berry, 1995), direct mail (Morgan & Hunt, 1994), preferential treatment, and interpersonal communication (De Wulf et al., 2001). Prior studies have demonstrated that significant relationship investments can be generated via an online shopping website’s efforts to create a psychological bond with regular consumers, which serves to strengthen and maintain relationships and, therefore, positively influences relational mediators (De Wulf et al., 2001; Wang & Head, 2007). Meanwhile, online shopping websites can cultivate a virtual community to encourage online shoppers to share or discuss their experiences with others on the website during the service delivery process (Dennis, Morgan, Wright, & Jayawardhena, 2010). Specifically, by cultivating a virtual community on the online shopping website for shoppers to access product reviews and expert opinions can serve to increase the word-of-mouth effect. Increasing online consumer participation in a virtual community may also increase online shoppers’ emotional investments on the website (Casaló et al., 2007; McAlexander et al., 2002), which also may foster online shoppers’ trust (Casaló et al., 2007). Furthermore, online shopping websites can use relationship instruments, such as loyalty programs and relationship magazines (Bügel et al., 2011), to increase the level of intimacy of their online customers. This marketing strategy may form online customers’ affection of an online shopping website and prevent the relationship to end (Bügel et al., 2011).

Limitations and Future Research

With limited manpower, resources, finance, and time, one study alone may not be able to solve every problem. First, as with most research, caution must be exercised when generalizing the results. Additional research is needed to generalize our findings to other technologies and populations. Second, although we adopted satisfaction, perceived usefulness, and trust as dedication-based relationship marketing variables and trust and perceived switching costs as constraint-based relationship marketing variables wisely, as proposed by Jones et al. (2000) and Ping (1993), a limitation might be the omission of other important variables (De Wulf et al., 2001). Thus, further research using other dimensional measures may be needed to fully verify the research model. For example, additional utilitarian and hedonic value dimensions from social, economic, and psychological perspectives, such as self-attribution, mental accounting, and illusions of knowledge, could be added as antecedents of dedication and constraint-based relationships (Konana & Balasubramanian, 2005). Another interesting area for future research would be to identify the various dimensions of self-determined motivations (Gagné & Deci, 2005) and examine their influences on online shopping behaviours. Additionally, other moderating variables, such as psychological contracts, could extend the scope of future studies (Pavlou & Gefen, 2005). Third, responses to questionnaires are inevitably subject to personal biases. In addition, our research focused on post-adoptions behaviours, which means that we did not study potential new customers. Fourth, the current study focused on online shoppers in China, which limits the generalizability of the study in global context. For this reason, we recommend future research to be based on a global perspective by comparing the same model in different cultural contexts with equivalent samples, which may increase the generalizability of the current findings. Finally, as this study provided only a short-term snapshot of user behaviours, longitudinal research would increase the validity of the model and ensure greater accuracy in the data.

References


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**APPENDIX**

**Summary of measurement items**

<table>
<thead>
<tr>
<th>Constructs and indicators</th>
<th>Factor loading</th>
<th>Item reliability &gt; 0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived operational competence:</strong> Cronbach’s alpha = .94, adapted from Balasubramanian et al. (2003)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The quality of the online shopping website is excellent.</td>
<td>.90</td>
<td>.81</td>
</tr>
<tr>
<td>The online shopping website executes my transactions in a timely manner.</td>
<td>.89</td>
<td>.79</td>
</tr>
<tr>
<td>The online shopping website provides a wide range of services.</td>
<td>.88</td>
<td>.77</td>
</tr>
<tr>
<td>It is easy to use the online shopping website.</td>
<td>.91</td>
<td>.82</td>
</tr>
<tr>
<td>The number of steps required to execute a transaction on the online shopping website is low.</td>
<td>.81</td>
<td>.66</td>
</tr>
<tr>
<td><strong>Perceived website interactivity:</strong> Cronbach’s alpha = .94; adapted from Morgan &amp; Hunt (1994), and Yilmaz &amp; Hunt (2001)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The online shopping website shares relevant information within a timely manner.</td>
<td>.95</td>
<td>.90</td>
</tr>
<tr>
<td>The online shopping website has the ability to respond to my specific questions quickly and efficiently.</td>
<td>.93</td>
<td>.86</td>
</tr>
<tr>
<td>The online shopping website frequently informs me about new offerings in a timely manner.</td>
<td>.85</td>
<td>.72</td>
</tr>
<tr>
<td>The online shopping website enables two-way communication directly for further questions about the website or its products if I wanted it in a timely manner.</td>
<td>.82</td>
<td>.67</td>
</tr>
<tr>
<td><strong>Perceived relationship investment:</strong> 89; adapted from De Wulf et al. (2001)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The online shopping website makes an effort to increase regular customers’ loyalty.</td>
<td>.88</td>
<td>.77</td>
</tr>
<tr>
<td>The online shopping website makes various efforts to improve ties with regular customers.</td>
<td>.85</td>
<td>.72</td>
</tr>
<tr>
<td>The online shopping website really cares about keeping regular customers.</td>
<td>.83</td>
<td>.69</td>
</tr>
<tr>
<td><strong>Community building:</strong> Cronbach’s alpha = .87; adapted from Tsai &amp; Huang (2007)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel a sense of kinship with other online shoppers of the online shopping website.</td>
<td>.83</td>
<td>.69</td>
</tr>
<tr>
<td>I feel a sense of belonging toward other online shoppers and the online shopping website.</td>
<td>.87</td>
<td>.76</td>
</tr>
<tr>
<td>Online shoppers can share experiences about the services or products from the online shopping website with other online shoppers who also purchase from the online shopping website.</td>
<td>.80</td>
<td>.64</td>
</tr>
<tr>
<td><strong>Intimacy:</strong> Cronbach’s alpha = .98; adapted from Lee &amp; Kwon (2011)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoy my time on the online shopping website and feel well at ease.</td>
<td>.99</td>
<td>.98</td>
</tr>
<tr>
<td>I feel a sense of intimacy with the online shopping website.</td>
<td>.95</td>
<td>.90</td>
</tr>
<tr>
<td>I think of the online shopping website as a friend of mine.</td>
<td>.98</td>
<td>.96</td>
</tr>
<tr>
<td><strong>Trust:</strong> Cronbach’s alpha = .93; adapted from Gefen et al. (2003)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Based on my experience with the online shopping website in the past, I know it is predictable.</td>
<td>.94</td>
<td>.88</td>
</tr>
<tr>
<td>Based on my experience with the online shopping website in the past, I know it is trustworthy.</td>
<td>.91</td>
<td>.83</td>
</tr>
<tr>
<td>Based on my experience with the online shopping website in the past, I know it is honest.</td>
<td>.89</td>
<td>.79</td>
</tr>
<tr>
<td><strong>Perceived switching costs:</strong> Cronbach’s alpha = .90; adapted from Jones et al. (2000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general, it would be a hassle to change the online shopping websites.</td>
<td>.89</td>
<td>.79</td>
</tr>
<tr>
<td>For me, the costs in time, money, and effort to switch online shopping website are high.</td>
<td>.84</td>
<td>.71</td>
</tr>
<tr>
<td>It would take a lot of time and effort changing online shopping website.</td>
<td>.86</td>
<td>.74</td>
</tr>
</tbody>
</table>
Confirmation of task-technology fit: Cronbach’s alpha = .95; adapted from Bhattacharjee (2001b)

Based on my experience with the online shopping website in the past, it fits well with all aspects of my shopping tasks than what I expected. .93 .86
Based on my experience with the online shopping website in the past, the service level of it fits better than I expected. .92 .85
In general, most of my expectations of the functions of the online shopping website were confirmed. .94 .88

Perceived usefulness: Cronbach’s alpha = .94; adapted from Davis et al. (1989)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Alpha</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using the online shopping website enhances my effectiveness.</td>
<td>.89</td>
<td>.79</td>
</tr>
<tr>
<td>Using the online shopping website improves my performance.</td>
<td>.92</td>
<td>.85</td>
</tr>
<tr>
<td>Using the online shopping website increases my productivity.</td>
<td>.87</td>
<td>.76</td>
</tr>
<tr>
<td>Overall, the online shopping website is useful.</td>
<td>.92</td>
<td>.85</td>
</tr>
</tbody>
</table>

Satisfaction: Cronbach’s alpha = .94, adapted from Spreng et al. (1996)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Alpha</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>The online shopping website makes me feel very satisfied.</td>
<td>.89</td>
<td>.79</td>
</tr>
<tr>
<td>Using the online shopping website makes me feel very pleased.</td>
<td>.87</td>
<td>.76</td>
</tr>
<tr>
<td>Using the online shopping website makes me feel very content.</td>
<td>.86</td>
<td>.74</td>
</tr>
<tr>
<td>Using the online shopping website makes me feel very delighted.</td>
<td>.94</td>
<td>.88</td>
</tr>
</tbody>
</table>

Continuance intention: Cronbach’s alpha = .80; adapted from Bhattacharjee (2001b)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Alpha</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>I intend to continue using the online shopping website rather than discontinue using it.</td>
<td>.82</td>
<td>.67</td>
</tr>
<tr>
<td>My intentions are to continue using the online shopping website rather than using other alternative means.</td>
<td>.80</td>
<td>.64</td>
</tr>
</tbody>
</table>