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**A STUDY OF ONLINE TRANSACTION SELF-EFFICACY, CONSUMER TRUST,
AND UNCERTAINTY REDUCTION IN ELECTRONIC COMMERCE
TRANSACTION**

By

Young Hoon Kim

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ABSTRACT

A STUDY OF ONLINE TRANSACTION SELF-EFFICACY, CONSUMER TRUST, AND UNCERTAINTY REDUCTION IN ELECTRONIC COMMERCE TRANSACTION

By

Young Hoon Kim

Trust has been accepted as a critical element in electronic commerce due to the fact that online transactions are characterized as a process that involves uncertainty and risk. Trust also has been thought of as the most effective means of reducing uncertainty and risk. The effect of measures to build and maintain trust in e-commerce is subject to person-specific and situation-related factors that cannot be controlled by web vendors. Based on the fact that trust is a mechanism to reduce complexity, a trait inherent to online transactions, this study has explored factors that influence trust during online transactions. Self-efficacy, which is an important factor in explaining motives and motivations of individual behaviors and choices, has an impact on trust building and uncertainty reduction. By incorporating self-efficacy into electronic commerce research, this study expands the understanding of what factors play a role in reducing uncertainty. Based on previous self-efficacy studies on the relationship between general self-efficacy and domain-specific self-efficacy, self-efficacy has been handled in two parts; general self-efficacy and online transaction self-efficacy. The result shows that both categories of self-efficacy affect trust in the web vendor and, consequently, positively influencing the respondent's purchase intentions.

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1. INTRODUCTION

Trust in online transactions is still crucial to the success of academic and business e-commerce. Previous research pointed out that the lack of online consumer trust is the main barrier of consumer participation in e-commerce (Cole, 1998; Jarvenpaa and Tractinsky, 1999; Reichheld and Sshefter, 2000; Rose et al., 1999). Since consumers are reluctant to make a purchase from unfamiliar web vendors on account of worries (e.g., fraudulent charges, difficulties of returning defective or wrong products, etc.), trust has become an important issue in business-to-customer (B2C) electronic commerce. Among the major concerns that consumers have is how e-commerce companies use their private information collected during online transactions (Steinfeld, 2004).

Previous research that has been made so far may be categorized as follows: 1) empirically examining the effect of trust on purchase behaviors (Jarvenpaa et al., 2000; Kim et al., 2003b; Kim et al., 2004), 2) exploring antecedents of trust (Gefen, 2000; Gefen, 2002; Bhattacharjee, 2002; Kim et al., 2003a): familiarity and disposition to trust, and 3) clarifying the definition of trust in e-commerce (McKnight and Chervany, 2002; McKnight et al., 2002).

Previous studies showed that trust was the most significant factor in explaining the process of commerce (Mayer et al. 1995; Doney and Cannon, 1997; Gefen, 2002). Trust was thought of as the most effective uncertainty reduction method (Hart and Saunders, 1997; Gefen, 2000). Trust had a significant effect on willingness to transact ($\beta = .36$, $p < .001$, Bhattacharjee, 2002) and purchase ($\beta = .43$, $p < .01$, Gefen, 2000). The direct effect of trust on purchase intention or behavior was proven theoretically and even empirically. The direct path of trust on purchase intention (or behavior) can be thought of a necessary

condition of an uncertainty reduction mechanism. Jarvenpaa et al. (2000) suggested an indirect effect of trust on willingness to buy through risk perception and attitude (trust → risk perception (and attitude) → willingness to buy).

Although much research has been done, there are still questions remaining to be answered about 1) whether other potential antecedents affecting trust-building and reinforcement of purchase intention in e-commerce are to be uncovered, 2) exactly what kind of relationship exists among several antecedents that have been proved in previous studies. A fuller understanding of the new uncertainty mechanism - beyond the conventional wisdom that trust directly affects purchase intention - would be possible only with a systematic investigation into that relationship. Therefore, there still is a need to clarify the mechanism that affects the trust and purchase intention of the consumer. To answer these questions, this study attempts to suggest an advanced uncertainty reduction mechanism of an online consumer by investigating the inter-relationships among internal/subjective factors. To do so, this study illuminates the applicability of self-efficacy in online transactions, which requires decision-making within uncertain contexts of online transactions. Self-efficacy will be posited as a causal antecedent to trust in reducing uncertainty inherent in online transactions and influences trust building. Whereas trust is a conventional uncertainty reduction method, and self-efficacy will be considered as a causal antecedent to this uncertainty reduction process.

The objective of this study is to investigate the influence of subjective/internal factors related to individual's intention to purchase in e-commerce and to explore the interdependent relationship among these factors that engage in trust building in e-commerce. To do so, another objective of this study is to introduce self-efficacy as a

significant antecedent for trust as an uncertainty reduction mechanism in the realm of e-commerce. The proposed model examines how self-efficacy affects trust on web vendors, and how both self-efficacy and consumer trust affect online consumers' intention to purchase from a certain web vendor by incorporating socio-cognitive factors like self-efficacy into the model explaining online purchasing. This work can provide a broader picture of trust building and reinforcement of purchase intention in e-commerce.

Since the proposal of Bandura's socio-cognitive theory of self-efficacy, much research has been done in explaining an individual's behavioral motivations. While self-efficacy has been introduced and utilized in a considerable amount of research in information systems (IS) and behavioral sciences (Compeau and Higgins, 1995; Venkatesh and Davis, 1996; Marakas et al. 1998; Agarwal et al. 2000), little is known of the applicability of self-efficacy in the domain of e-commerce. In previous IS research, self-efficacy was thought of as an effort to provide a solid means to advance the multi-level model by introducing external variables such as perceived usefulness and perceived ease of use (Venkatesh and Davis, 2000).

The self-efficacy factor can be introduced in the domain of e-commerce in the same way as it has been in other research areas. If consumers feel too much uncertainty in e-commerce transactions, they are reluctant to make purchases from online retail websites. If, however, people are confident that they can handle the problems that may occur during transaction with web retailers, confidence in e-commerce will increase. Customers who see themselves as highly self efficacious are more likely to try out uncertain and possible risky online transaction, whereas those who perceive low self-efficacy are likely not to engage in less certain and risky situations.

Two research questions addressed in this study are: (1) the significance of self-efficacy in forming and reinforcing purchase intention of online consumers and (2) what the structural relationship among subjective/internal factors engaged in trust-building and reinforcement of purchase intention in B2C e-commerce is. In order to investigate these research questions, the SEM (Structural Equation Modeling) was used to examine the proposed model of purchasing intention-behavior reinforcement. Based on the data gathered, this multivariate analysis that includes relevant latent variables was conducted to test whether the proposed model showed the structure and the relationships among these variables.

The remainder of this study is organized as follows. Chapter 1 reviews literature and theoretical foundations underpinning previous studies. Chapter 2 introduces the research model and hypotheses of this study. Chapter 3 describes the research methods used in this study and reports the results. Chapter 4 concludes with a discussion of the findings, implications, and suggestions for further research.

2. LITERATURE REVIEW

The main focus of this literature review is trust and self-efficacy. It's because these two factors are key concept upon understanding internal/subjective factors affecting trust building and trust-reinforcement in e-commerce.

2.1. Trust

Trust has been conceptualized by investigating a relationship among a belief, attitude, attention, and behavior (Mayer et al., 1995; McKnight et al., 1998). This

direction of research is concerned with defining the trust concept in a management context, not interpersonal context. Schurr and Ozanne (1985) defined trust as the “belief that a party’s word or promise was reliable and that a party will fulfill his/her obligation in an exchange relationship.” Certainly this belief leads to behavioral intentions. Mayer et al. (1995) defined trust as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.” (p.712). McKnight et al. (2002) defined trust to mean that “one believes in, and is willing to depend on, another party.” Gefen (2000) suggested that trust was based on previous interactions, although a supplier’s previous behavior could not guarantee that he/she will act as expected. In summary, trust refers to the belief that the promise of the other party can be relied upon and that, in unpredictable circumstances, the other will act with goodwill and in a benign fashion toward the trustor.

Previous literatures show distinct dimensions of trust: Integrity, motives, consistency, openness, discreteness, functional competence, interpersonal competence, business sense, judgment (Gabarro 1978); Predictability, dependability, faith (Rempel et al., 1985); Availability, competence, consistency, discreteness, fairness, integrity, loyalty, openness, promise fulfillment, receptivity (Butler, 1991); Ability, benevolence, integrity (Mayer et al., 1995); Keeps commitments, negotiates honesty, avoids taking excessive advantage (Cummings and Bromiley, 1996); Credibility and benevolence (Doney and Cannon, 1997); Openness, congruity, shared values, autonomy (Hart et al., 1986); Ability, benevolence, integrity (Jarvenpaa et al., 1998); Benevolence, competence, honesty, predictability (McKnight et al., 1998).

Some trust dimensions were originally concerned with interpersonal relationship (peer and work) so these may not be relevant to online transaction. It should be noted that some trust dimensions are available to e-commerce situation; others are less relevant to online transactions.

Table 1. Context of Previous Research on Trust

Research	Context
Gabarro (1978)	Interpersonal relationship among corporate executives
Rempel et al. (1985)	Spousal relationships
Hart et al. (1986)	Relationship of inter-unit at General Motors
Butler (1991)	Interpersonal relationship among corporate managers
Mayer et al. (1995)	Suggesting conceptual definition of trust
Cummings and Bromiley (1996)	Inter-unit (organization)
Doney and Cannon (1997)	Buyer-seller relationship
Jarvenpaa et al. (1998)	Interpersonal relationship among virtual team members
McKnight et al. (1998)	Individual in organizations
Gefen (2000, 2002)	The role of familiarity and trust/ the dimensions of trust
Bhattacharjee (2002)	Individual trust in online firms

Based on previous literatures on trust, Mayer et al. (1995) proposed a generic concept of trust by suggesting three dimensions: ability, benevolence, and integrity. These three dimensions are conceptually distinct as well as empirically distinct (Bhattacharjee, 2002; Gefen, 2002).

Ability is defined as “group of skills, competencies, and characteristics that enable a party to have influence within some specific domain.”(Mayer et al., 1995, p.717). It reflects the trustor’s perception of how well trustee is competent and knowledgeable for the behavior and performance trustor desires. Bhattacharjee (2002) argued that online consumer’s perception of web retailer’s ability depends on competence and the

knowledge of the retailer required to yield the desired performance. Benevolence is “the extent to which a trustee is believed to want to do good to the trustor, aside from an egocentric profit motive” (Mayer et al., 1995, p.718). It refers to the degree to which a trustee is believed to try to bring some intended results to a trustor. If a web retailer is benevolent, it is very much likely to show receptivity and empathy of how much it pays attention to online customers’ concern (Bhattacharjee, 2002). Integrity reflects “the trustor’s perception that the trustee adheres to a set of principles that the trustor finds acceptable” (Mayer et al., 1995, p.719). Integrity can be assessed in terms of conducts of online transactions, policies that relate to customer service, and use of private information by firm (Bhattacharjee, 2002).

For online consumers, transaction with online vendors is considered uncertain and is a risky situation as compared with the conventional buying-selling process. Consumers are given little opportunity to verify the quality of goods on their own and it is also not easy to test goods through interaction with the web vendor. When customers make a purchase from an unfamiliar web vendor, they are unable to judge the quality, and they do not know whether or not the service is reliable and legitimate. Grabner-Kraeuter (2002) classified and characterized two types of uncertainty in e-commerce: system-dependent uncertainty, which is caused by functional defects or security problems in technical systems, and transaction-specific uncertainty, which is explained by an asymmetry in information between the transaction partners. It is meaningful to clarify the level of uncertainty embedded in online transaction in that trust is essentially a mechanism of risk and uncertainty reduction during transaction.

Previous studies showed that trust was the most significant factor in explaining the process of commerce (Mayer et al. 1995; Doney et al., 1998; Gefen, 2002). Trust is thought of as the most effective uncertainty reduction method (Gefen, 2000; Hart and Saunders, 1997). Trust plays a key role in purchasing processes where consumers especially look for credential qualities of goods and services. Trust is one of the factors that influence how risk is perceived and assessed by the individual. Kathryn and Mary (2002) suggested that perceived risk associated with e-commerce was “a function of trust between a buyer and a seller.” The level of risk inherent in a particular e-commerce situation is offset by the degree to which trust is maintained by one party. As a result, trust functions to reduce perceptions of risk. Bhattacharjee (2002) stated that trust was a significant factor of online transactions because it can be characterized by uncertainty, anonymity, and lack of control, and potential opportunism. Trust was understood as a control mechanism that prevents opportunistic behaviors, encourages following transactions, and supports the formations of long-term relationships.

McKnight and Chervany (2002) classified the definition of trust into four stages: disposition to trust, institution-based trust, trusting belief, and trusting intention. They approached the trust-building process by integrating trust-related constructs within the framework of the Theory of Reasoned Action (TRA). There has been an issue of how the dimensionality of consumer trust should be understood. Unlike the approach that regarded consumer trust as a single dimensional construct (Jarvenpaa and Tractinsky, 1999; Gefen and DeVine, 2001; Gefen and Straub, 2002; McKnight et al., 2000; McKnight and Chervany, 2002;), Gefen (2002) proposed that trust should be understood

as a multi-dimensional construct in e-commerce and showed that the different sub-constructs of trust were distinct.

Gefen (2002) conceptualized trust in two ways; one way understands trust as “a set of specific beliefs” about the specific party that are built on beliefs in terms of its integrity, benevolence, and ability. He studied the analytic framework in which the specific beliefs of ability, integrity, and benevolence can constitute trustworthiness. The other studies considered trust “a general belief” that the specific party was reliable because it has ability, integrity, and benevolence.

The willingness of the buyers to provide their credit card number or other personal information will depend on their assessment of the trustworthiness of the online vendor. Trust was the result of “a set of trustworthiness beliefs” (Mayer et al., 1995; Gefen, 2000). Trust dealt with beliefs about the future behaviors and choices of others and these beliefs or trustworthiness beliefs were influenced by the individual’s judgment on the other party’s future actions and trading environments (Gefen, 2000). Thus, it is evident that trustworthiness beliefs (ability, benevolence, and integrity) can be influenced and formed by the individual’s judgment. Given that individuals were eventually motivated through understanding and controlling their social environment (Gefen, 2000), this study validly attempts to make use of self-efficacy judgment that engages in the process of understanding and accepting their social environment.

As McKnight et al. (2002) pointed out, trust was a complex, dynamic and multidimensional concept that could not be created by applying adequate external instruments. Deciding on whether or not to trust others depends ultimately on the individual’s judgment on the other party and the situation. The consumer’s individual

judgment will be influenced by that individual's self-efficacy. Consumers eventually decide on their own, even though they are given any number of external measures provided by a guarantee instrument (e.g., TRUSTe) and any rating (e.g., the reputation system of ebay) results offered by any other consumers. There will always be some consumers who are not confident that they can find a trustworthy web vendor, even if ratings and reputations provided by other consumers are given to them.

McKnight and Chervany (2002) posited that certain situations tended to have stronger effects on interpersonal beliefs. But this does not necessarily lead to the conclusion that situation (including external safeguards or a guarantee system) influences interpersonal beliefs. Through three different measures like information policies, guarantee policies, and reputation policies, web vendors try to make transactions more efficient and reliable (Grabner-Kraeuter, 2002). However, these instruments do not necessarily guarantee that these measures make it possible for online consumers to trust the web vendor. The study (Kimery and McCord, 2002) showed that there was no significant direct impact of a third-party seal on consumer trust in a specific e-retailer. It's because the meaning of a third-party seal has not been known to the consumers; more importantly, they lack confidence to consider it a mechanism to guarantee trust.

Bhattacharjee (2002) suggested that first, individual level trust should be distinguished from that of group level or business firm level, that is, trust in personal relationship or work relationship is distinct from that in inter-organization. Second, trust can be considered a domain-specific psychological state. Mayer et al. (1995) viewed trust as a general personality trait or a domain-specific psychological state. They understood personality traits were subject to developmental factors that are irrelevant to a given

context. And psychological states were considered as affective or cognitive one that can be influenced by the interaction between an individual and social situations. However, Bhattacharjee argued that trust in e-commerce should be viewed as a domain-specific psychological state, because the personality trait approach is more likely not to provide an adequate explanation of why an individual shows less trust toward uncertain and anonymous Web retailers.

One should note that the impact of trust on uncertainty reduction is not a direct relationship; rather, any other variables can get involved in the reinforcing relationship between trust and uncertainty reduction. This study attempts to explore the factor that plays a significant role in influencing individual's trust judgment. Thus, self-efficacy has been introduced in the argument regarding the impact of trust on uncertainty reduction.

2.2. Self-Efficacy

There has been a considerable amount of study on self-efficacy that deals with work-related performance (Frayne and Latham, 1987; Wood and Bandura, 1989; Gist et al., 1989; Mitchell et al., 1994; Agarwal et al., 2000; Venkatesh, 2000). These studies have sought to explore the existence of many cognitive factors that have motivational effects on human action. In reality, the relationship between self-efficacy and behavior has been empirically validated in diverse domains such as education, health organizational life, and organizational tasks. In the realm of information technology, self-efficacy is regarded as a determinant of individual behavior and performance. Self-efficacy was shown to understand the psychological aspects of the Digital Divide (Eastin and LaRose, 2000), individual behavior toward new information technology (Compeau and Higgins, 1995; Marakas et al., 1998), perceived ease of use in prior research on user

acceptance of technology (Venkatesh and Davis, 1996), and prediction of using a web-based information system (Yi and Hwang, 2003). It was empirically demonstrated that application-specific self-efficacy has a more direct and powerful effect on the ease of use and perception (Agarwal et al., 2000).

Table 2. Context of Previous Research on Self-Efficacy

Research	Context
Frayne and Latham (1987)	Employee attendance management
Wood and Bandura (1989)	Complex decision making
Gist et al.(1989); Mitchell et al. (1994); Marakas et al. (1998)	Computer skill acquisition
Venkatesh and Davis (1996) Agarwal et al. (2000); Venkatesh (2000);	User acceptance of technology
Saks (1995)	Job attitude
Stajkovic and Luthans (1998)	Job performance.
Chen et al. (2000)	Learning goal orientation
Eastin and LaRose (2000)	Understanding psychological aspect of digital device
Yi and Hwang (2003)	Prediction of using a web-based information system

Self-efficacy was defined as a personal judgment of “how well one can execute courses of action required to deal with prospective situations” (Bandura, 1982, p. 122). Bandura (1986) defined self-efficacy as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances” (p.391). And Bandura (1991) also stated that “people’s beliefs in their efficacy influence the choices the make, their aspirations, how much effort they mobilize in a given endeavor, and how long they persevere in the face of difficulties and setbacks” (p.257). As Bandura pointed out (1986), self-efficacy does not reflect skills individuals

possess but judgment of what they can do with their skills. Self-efficacy should not be understood as a measure of skill because it concerns with the extent to which individuals believe they can perform by using their skills (Eastin and LaRose, 2000). It focuses on what people believe they can accomplish now. Self-efficacy can be understood as “beliefs in one’s capabilities to mobilize the motivation” needed to manage given situational tasks (Wood and Bandura, 1989, p.408).

Gist and Mitchell (1992) pointed out that self-efficacy had three aspects. First, self-efficacy reflects individuals’ comprehensive judgment on whether they are capable of implementing a specific task. Second, the judgment on self-efficacy changes as the individual obtains new information and experiences. Third, a self-efficacy judgment involves a motivational factor that directly mobilizes the individual’s behaviors.

People are neither driven by internal/subjective forces, nor determined by external/environmental stimuli; rather, the behavior of people can be explained by the more comprehensive model of reciprocal relationship. Given that human behavior is explained by the interaction of internal forces and external stimuli, self-efficacy could be understood as a key mechanism that accounting for this interactive relationship between internal forces and external stimuli that affects human behavior. As Bandura (1986) pointed out, self-efficacy was a more comprehensive perception process, and it reflects the adaptation of individual’s performance to accomplish under given circumstances. Thus, people who have the same skills may perform differently during their task.

Individuals who perceive themselves as highly self-efficacious tend to initiate a sufficient effort that may produce successful outcomes, whereas those who perceive low self-efficacy are likely to cease their efforts prematurely and fail on the task. In the

context of e-commerce transaction, consumers are concerned that they might not be able to obtain relevant information on the web vendors from whom they are planning to make online purchase. Consumers worry that if their orders do not function in the intended manner, they are unable to return it without any problems, especially in case the merchandise they have purchased online turns out to be a wrong or defective product. For example, if people are confident that they are usually able to purchase exactly the item that they want from web vendors, they are more likely to trust the web vendors. Once people are confident that defective products will be taken care of in an orderly and desirable fashion, they are more likely to be less reluctant to make purchases from them.

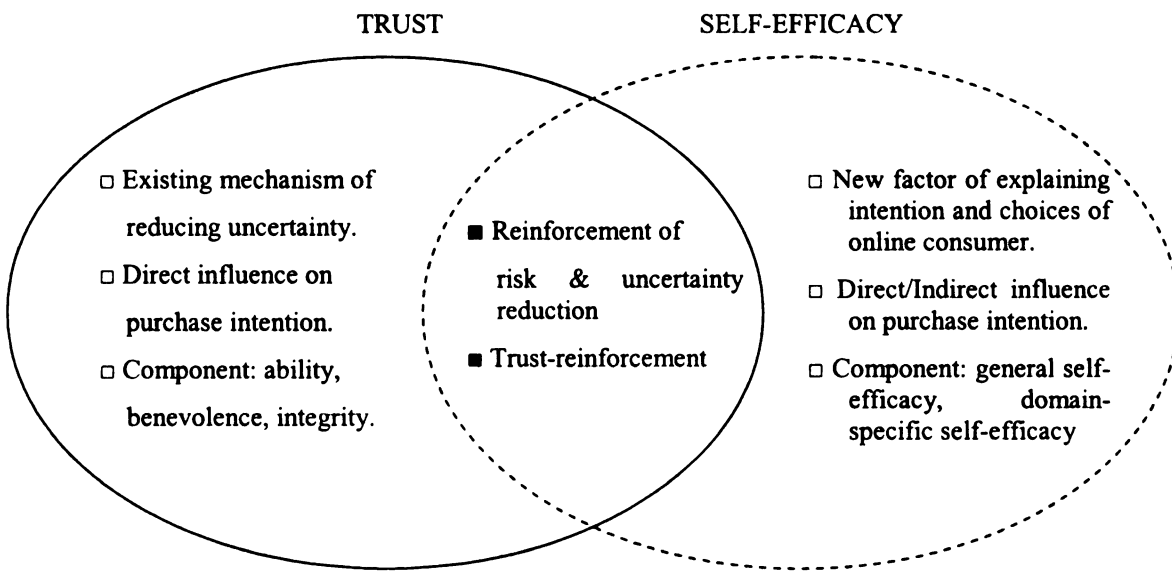


Figure 1. The Intersection Effect of Trust and Self-Efficacy

Figure 1 shows the effect of uncertainty reduction that trust and self-efficacy have individually and collectively. As mentioned earlier, trust was illuminated as a conventional uncertainty reduction measure, self-efficacy will be considered as a causal antecedent to this uncertainty reduction mechanism.

How could self-efficacy link to the arguments for trust building in e-commerce? McKnight et al. (2002) built on the integrative model including institution-based trust, trusting intentions, trusting beliefs, and disposition to trust. These constructs are discriminant from each other, representing dispositional, institutional, and interpersonal typed trust constructs. According to them, institution-based trust derives from a point of view that an individual's behavior is not determined by internal factors within the person but by the environment surrounding him/her. Trusting intentions and trust beliefs reflects thought that social interactions among people and an exchange of cognitive and emotional responses among them influence an individual's behavior. Disposition to trust reflects a general propensity to trust other. The type of trust concept can be distinguished into three dimensions: interpersonal, institutional, and dispositional.

They also suggested that the process of trust building was going to be dismantled according to each stage. According to them, first, trust building is initiated at an individual's intrapersonal communication level. At this level, precondition of trust is independent of the degree of previous experience of e-commerce. Second, cognitive/affective beliefs get involved in trust building. This level can be distinguished into channel-related belief and specific web vendor-related belief.

They integrated these trust constructs, basing on the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975). TRA posits that an individual's belief causes attitude, which leads to behavior. "To predict the behavior from the initial measure of intention, it may be necessary to consider other variable in addition to the intention." (Fishbein and Ajzen, 1975, p.370). The theory of reason action and the theory of planned behavior presume that behavioral intension determines behavior. Intentions, in turn, can be

determined by an individual's attitude toward the behavior. As mentioned earlier, self-efficacy is understood as people's beliefs in their capability influencing their choices and aspiration. Self-efficacy is one of the important causes to influence an individual's beliefs. As McKnight and Chervany (2002) pointed out, trusting beliefs was "a belief that the other party has one or more characteristics beneficial to oneself." Since these trusting beliefs relate to each individual consumer's perception, the more positive the consumers' attitudes are toward an online transaction, the more likely they are to trust a certain web vendor.

Socio-cognitive theory and research to date have indicated that task-and-situation-specific self-efficacy and general self-efficacy are distinct each other (Bandura, 1986; Eden, 1988; Sherer et al.1982). In line with the socio-cognitive research, in the realm of information technology, Marakas et al. (1998) found out that computer self-efficacy (CSE) was a multi-level construct operating at two distinct levels: at the general computing level (general CSE) and at the specific application level (application-specific self-efficacy). Organizational behavior research (Eden, 1988; Judge et al., 1998; Chen et al., 2001) demonstrated that general self-efficacy predicted specific self-efficacy for a variety of tasks in various environments. Based on the socio-cognitive perspective on the interdependent relationship between general self-efficacy and domain-specific self-efficacy, self-efficacy in this research has been handled in two parts; general self-efficacy (GSE) and online transaction self-efficacy.

This paper extends the current understanding on the concept of self-efficacy in trust building in B2C e-commerce. While extant IS research on self-efficacy focused on self-efficacy judgment in reference to the task domain of computing (Agarwal et al., 2000),

this study focuses on the impact of self-efficacy on trust in the context of purchasing-related behavior. In order to apply self-efficacy to online transactions, self-efficacy is redefined as the belief of an individual in his or her ability to organize and execute certain behaviors necessary for the consumer to achieve certain objectives in online purchasing (e.g., a successful and satisfactory transaction) under uncertainty. This study also suggests online transaction self-efficacy as a domain-specific self-efficacy in the context of e-commerce.

Table 3. Summary of Concepts and Research Variables

Main construct	Research variables and description		Reference
Trust	Ability	"a set of specific beliefs about the specific vendor"	Doney and Cannon (1997)
	Benevolence		
	Integrity	"antecedents of general belief in trust"	Mayer et al. (1995), Gefen (2002), Jarvenpaa and Tractinsky (1999)
	Institution-based trust, disposition to trust, trusting beliefs, trusting intentions.		McKnight et al. (2002)
Self-efficacy	General self-efficacy (an individual judgment of efficacy across various situations in everyday life)		Sherer et al. (1982) Eden (1988) Judge et al. (1998) Chen et al. (2001)
	Domain-specific self-efficacy (an individual perception of efficacy in engaging in specific situation.)		Bandura (1986) Gist and Mitchell (1992) Lee and Bobko (1994) Stajkovic and Luthans (1998)

3. RESEARCH MODEL & HYPOTHESES

3.1. General self-efficacy

Sherer et al. (1982) attempted to provide a measure to assess self-efficacy that is not tied to specific situations. They approached self-efficacy as efficacy expectancies generalize to an individual's overall behavior other than the specific behavior. Sherer et al. (1982) developed a measure for the General Self-Efficacy Scale (GSES), and obtained a factor structure that had three sub-dimension: "willingness to initiate behavior: Initiative"; "willingness to expend effort in completing the behavior: Effort"; and "persistence in the face of adversity: Persistence". This measure is consistent with Bandura's assertion that self-efficacy expectancies determine the initial decision to initiate a behavior, expend efforts, and persist in the face of adversity (Bandura, 1986).

General self-efficacy consists of trait-like characteristics that are not about specific situations or behavior; rather, it can be applied to various situations (Sherer et al., 1982). They also stated that individual differences in general self-efficacy exist and these differences correlate with behavior. More recently, researchers have become interested in what has been termed general self-efficacy (GSE) (Eden, 1988; Judge et al., 1998). GSE was defined as "generalized trait consisting of one's overall estimate of one's ability to effect requisite performances in achievement situations" (Eden and Zuk, 1995, p.629), or as "individuals' perception of their ability to perform across a variety of different situations" (Judge et al., 1998, p. 170). GSE reveals differences among individuals in their perception of how well they are capable of meeting task demands in various contexts (Chen et al., 2001).

The accumulation of previous successful experiences is an important antecedent of GSE (Sherer et al., 1982). GSE is acquired and reinforced as an individual accumulates successful experiences and failed one across various situations (Shelton, 1990). Bandura (1997) stated: "Powerful mastery experiences that provide striking testimony to one's capacity to effect personal changes can also produce a transformational restructuring of efficacy beliefs that is manifested across diverse realms of functioning. Such personal triumphs serve as transforming experiences. What generalizes is the beliefs that one can mobilize whatever effort it takes to succeed in different undertakings." (p.53)

The importance of GSE to research can be explained in terms of "1) predict SSE across situations and tasks, 2) predict general and comprehensive performance criteria, and 3) buffer against the debilitating effects of adverse experiences on subsequent SSE" (Chen et al., 2000). People with high self-efficacy are likely to choose to perform more challenging tasks. When problems occur, they maintain their commitment to their goals. People who believe that they can produce a desired result are more likely to maintain a more active life. For example, if individuals are confident that they will be able to achieve most of the goals that they have set for themselves, they tend not to be reluctant to try an uncertain situation. And if people are certain that they will accomplish their goal even when facing difficult tasks, then they perceive less uncertainty (or risk). As a result, high self-efficacy makes it less uncertain for the individual to perceive the characteristics of any tasks.

In the context of online transactions, individuals with higher general self-efficacy are expected to perceive less risk in B2C e-commerce. More specifically, if people are confident that they are usually able to purchase exactly the item that they want from Web

vendors, they are more likely to trust a web vendor and make purchases in the future. If consumers are confident that, even if the vendor they made an online purchase from would not take back a defective product, they are able to solve the problem through the assistance of a third party (e.g., friends, better business bureaus, or relevant governmental agencies.), then they are more likely to perceive a lower level of risk. Therefore, it can be hypothesized that:

H1-a: General self-efficacy (initiation) is positively associated with online transaction self-efficacy.

H1-b: General self-efficacy (effort) is positively associated with online transaction self-efficacy.

H1-c: General self-efficacy (persistency) is positively associated with online transaction self-efficacy.

3.2. Online Transaction Self-Efficacy

Although Bandura (1997) stated that “an efficacy belief is not a decontextualized trait” (p.42), it should be noted that his mention does not mean that specific self-efficacy generalize to various context (Stajkovic and Luthans, 1998). Previous research conceptualized and studied self-efficacy as a task-and-situation specific construct (SSE) (Bandura, 1986; Gist and Mitchell, 1992; Lee and Bobko, 1994). Despite advances in theoretical and empirical research on GSE, the utility of GSE has been questioned. Stanley and Murphy (1997) raised a question of whether GSE is distinct from self-esteem, which is another important construct in predicting a motivation of an individual’s behavior.

Stajkovic and Luthans (1998) argued that the practical applicability of GSE was low. The low predictability of GSE on behavior can be explained in terms of lacking of

specificity matching. To improve the predictability of GSE, the specificity of construct measuring the self-efficacy should be matched the specificity of the performance or task to be predicted (Chen et al., 2001).

Task-and-situation specific self-efficacy represents “a dynamic, multifaceted belief system that operates selectively across different activity domains and under different situational demands, rather than being a decontextualized conglomerate” (Bandura, 1997, p.42). Specific self-efficacy was defined as how well one believed he or she could perform given the specific social context and the particular task. (Stajkovic and Luthans, 1998). Specific self-efficacy has been proven to predict outcomes of performance or task well (Bandura, 1986). This is because the outcomes to be measured have been highly specified. As previous pointed out, SSE predicts outcomes of a target situation (Bandura, 1986, 1997; Marakas et al., 1998; Yi and Hwang, 2003). What is important to SSE is to acquire specificity that can be applied to specific performance situation.

If people are low self-efficacious, they are less confident that they are able to return it without any problem, in case the merchandise they have purchased online turns out to be defective: then, they are not willing to make purchase online. If consumers are confident that they are able to take care of the problems on their own, in case their orders do not come through in a satisfactory manner, they are more likely not to be reluctant to make a purchase from a web vendor. Consumers who are highly self-efficacious tend to make a transaction with any web vendor while customers who have low self-efficacy are more likely not to transact with any web vendor.

SSE is one important outcome of GSE. As pointed out by Chen et al. (2000), GSE positively influence SSE across tasks and situations. The individual's tendency to feel

efficacious across situations could be applied to specific situation. General self-efficacy is defined as an individual judgment of efficacy across various situations in everyday life, and online transaction, while self-efficacy is defined as an individual perception of efficacy in engaging in a certain situation and task.

The more self-efficacious consumers are with a web vendor, the more favorable expectations they are likely to have, and the more they are likely to trust a web vendor. This study develops online transaction self-efficacy as a situation-specific self-efficacy. This finding indicates that the online transaction self-efficacy as a specific self-efficacy is influenced by the degree to which one believes in one's overall competence to effect performances across a wide variety of achievement situations. Consequently, it can be hypothesized that:

***H2-a:** Online transaction self-efficacy is negatively associated with perceived risk.*

***H2-b:** Online transaction self-efficacy is positively associated with consumer trust.*

3.3. Disposition to Trust

Disposition to trust was defined as a general willingness based on the formation of human relationship to depend on others (McKnight et al., 1998; Ridings et al., 2002). It is a general personality trait that displays a general expectation of how trusting other people should be. Ridings et al. (2002) applied disposition to trust in investigating the antecedents and effects of trust in virtual communities. They posited that, if someone is willing to trust others in general, then s/he should apply this general willingness to other in the virtual community. Mayer et al. (1995) suggested that disposition to trust can be effective when the parties unfamiliar with one another. Ridings et al. considered disposition to trust play a role in explaining trust in a virtual community where anyone is

not familiar with one another. Therefore, they hypothesized that user's disposition to trust will be positively related to their trust in other members' ability (benevolence and integrity) in the virtual community.

McKnight et al. (2002) defined that disposition to trust was the extent to which an individual showed a tendency to be willing to depend on others across various situations and persons. The more consumers are disposed to trust the other party (i.e., the vendor), the less amount of risk they are likely to perceive. The present study proposes those relationships in online transaction contexts with the following hypotheses:

H3-a: Disposition to trust is negatively associated with perceived risk.

H3-b: Disposition to trust is positively associated with consumer's trust.

3.4. Consumer Trust

Trust can be defined as the consumer's belief that the seller, i.e., a firm or Website, will fulfill its transaction as expected by the consumer. Gefen (2000) showed that consumer trust influenced purchase intentions, and Reichheld and Schefter (2000) also showed that consumers who lack trust in a specific online vendor were not likely to engage in e-commerce. Gefen (2000) adopted the idea that not only a general belief that the specific other party could be trusted but also the specific beliefs in ability, integrity, and benevolence with other party serve as antecedents of this general belief in trust. Jarvenpaa and Tractinsky (2000) suggested that trust was a critical antecedent to engaging in online transaction because it reduced the idea of risks associated with purchasing goods and services over the Internet.

In previous research, trust in others' ability in the virtual community was positively related to willingness to give information to others ($\beta = .15$, $p < .01$) and desire to get

information from others ($\beta = .28, p < .01$). Trust in others' benevolence and integrity in the virtual community was positively related to willingness to give information to others ($\beta = .29, p < .01$) and desire to get information from other ($\beta = .22, p < .01$) (Ridings et al., 2002). Trust was significant predictor of online banking user's willingness to transact ($\beta = .36, p < .001$) (Bhattacharjee, 2002). Attitudes and behavior of buyer in an Internet store were shown to be affected by the level of trust by buyer. Trust in an Internet store affects attitude of buyers positively ($\beta = .59, p < .05$) and affect risk perception negatively ($\beta = -.91, p < .05$)

H4: Consumer trust is positively associated with purchase intention.

3.5. Perceived Risk

Some early research suggested that risk perception may play a small role in the adoption of online shopping (Jarvenparr and Todd, 1996-96), however, consumer's risk perception has been deemed to be a substantial barrier to the growth of e-commerce. Risk affects the attitude and behavior of an individual in dealing with another party. The level of risk is an important factor in forming the customer's attitude and behavior in all kinds of business transactions. Clearly a high level of risk will make it difficult for customers to utilize e-commerce. Perceived risk was thought of as the degree to which a consumer perceives a potentially negative outcome from the online transactions (Featherman & Pavlou, 2002).

Kathryn and Mary (2002) suggested that perceived risk represented an individual's assessment of the relative probability of positive and negative outcomes of a given transaction or situation. It was suggested that perceived risk correlated negatively with

the degree of purchasing products online (Miyazaki and Fernandez, 2001). They hypothesized that perceived risk and concerns toward online shopping are negatively related to the degree of online purchase. As expected, perceived risk toward online shopping was shown to be negatively associated with online purchase ($r = .48, p < .01$). They also suggested four general categories of risk perception: The first category, Privacy, contains “unauthorized sharing of personal information, unsolicited contacts from the online retailer (e.g. junk e-mail), and undisclosed tracking of shopping behavior.” The second category, system security, includes “concerns about potentially malicious individuals who breach technological data protection devices to acquire consumers’ personal, financial, or transaction-oriented information.” The third category, online retailer fraud, refers to concerns regarding “fraudulent behavior by the online retailer, such as purposeful misrepresentation or nondelivery of goods.” The fourth category, inconveniences of online shopping, is about other reasons for limiting online shopping behavior.

Meanwhile, two types of risk were categorized in the context of Internet shopping; product category risk and financial risk (Bhatnagar, Misra, and Rao, 2000). Product category risk is about the product itself. This type of risk refers to the consumers’ belief as to whether the product they have purchased would function according to their expectations. Financial risk is associated with a unwanted situation like the possibility of losing money via credit card fraud, putting the consumer at risk. Perceived risk was shown to be negatively associated with willingness to buy in e-commerce ($\beta = -.29, p < .05$) (Jarvenparr et al., 2000).

H5: Perceived risk is negatively associated with purchase intention.

Based on above arguments on several internal/subjective factors, the research model is developed as follows (Figure 1.) Testing this model is to address two research questions: whether self-efficacy plays a role in affecting trust-building and reinforcement of purchase intention, and what kind of the structural relationship among relevant factors. Ovals indicate each internal factors, which is latent variables and arrows denote the association between two constructs.

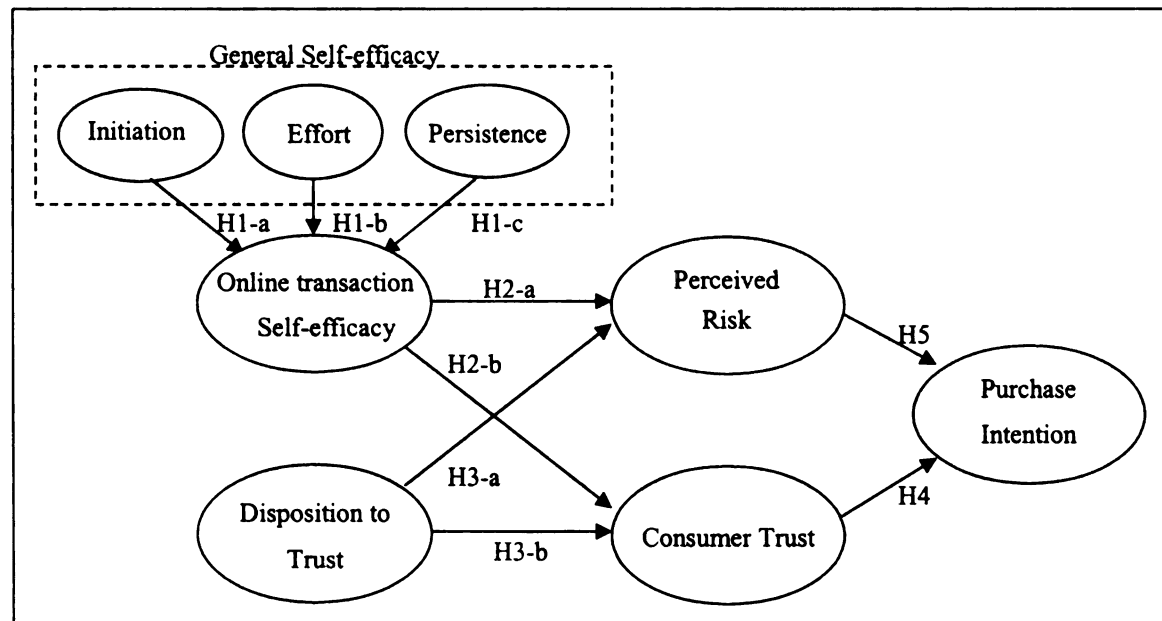


Figure 2. Research Model

4. RESEARCH METHODOLOGY

4.1. Data collection

All data were collected through a survey constructed to measure the following variables: self-efficacy, disposition to trust, perceived risk, consumer trust, purchasing intentions, and key demographic characteristics. Much of the research in the domain of computer-mediated communication and information system has conducted experiments

in a laboratory setting, however, external validity in these research also has been called into question (Ridings et al., 2002). A cross-sectional survey was used to test the research model of the consumer experiencing a B2C retail transaction. The reason was because the survey is an appropriate method to test an actual consumer's perception as to a B2C online transaction, and it is expected to maximize external validity.

An online survey was used to collect data because of its expediency in data collection, ease of data transformation to another statistical tool. The questionnaire was made on 'Angel system', which is a Web-based class management system accessible via the Internet. Responses were submitted by the end of the 15th day after the survey request were used for this study.

The population of interest in this research is consumers involved in an actual B2C online transaction. In order to elicit each respondent's experience and perception, all the respondents were asked to answer each survey question based on their previous on-line purchasing experiences in the past six months. 218 complete inquiries were collected from 220 students. Among the students surveyed 48 were women, and 172 were men. Most respondents were in the group of ages 20-25 ($n = 218$).

All subjects used the Internet frequently in their everyday life and quite familiar with using the computer and the Internet. For the questions about to extent to which respondents have their experiences with computer and web technology (including searching, browsing, finding information, etc), the mean is 5.57 and 5.86 respectively. (e.g. "how would you rate your experience with computer?" (1-Novice/ 7-Expert), and "how would you rate your experience with web technology?" (1-Novice/ 7-Expert)).

They have been shown to spend about 295 minutes on the Web per week and spend about 352 minutes on a computer (including spending on the Web) during a typical week.

All the respondents had previously bought items at the specific websites, and most of them were familiar with making purchases items from the specific websites. It has been averagely 2.96 years since they began making purchases on websites. The frequency that they make purchases from e-commerce web site is 5.82 per month.

Table 4. Degree of Internet and Computer Experience among Participants

Construct	Mean	Median	Mode
Experience with computer*	5.57	6.00	6
Experience with Web technology*	5.86	6.00	6
Average time of spending on the Web	295.52 (min.)	210.00 (min.)	180 (min.)
Average time of spending on a computer	352.39 (min.)	300.00 (min.)	300 (min.)
Duration of previous e-commerce**	2.96	3.00	3
Frequency of e-commerce	5.82 (times)	1.00	1

* : 1 – Novice / 7 – Expert

** : 1- less than one year/ 2- two years/ 3-three years/ 4-four years/
5- more than five years.

4.2. Measurement

To construct the survey instrument, existing scales from the literature were reviewed, and items were carefully adapted or developed for each construct. All of the items were measured with seven-point Likert-type scales ranging from *strongly disagree* to *strongly agree*. General self-efficacy can be defined as “an individual’s perception of their ability to perform across a variety of different situations” (Judge et al., 1998, p.170).

The general self-efficacy scale (Bosscher and Smit, 1998) was used to measure this variable (e.g., “When I have something unpleasant to do, I stick to it until I finish it”). For online transaction self-efficacy, no existing scale could be found to measure the online transaction self-efficacy in a Business-to-Consumer e-commerce environment. Thus, a six-item scale was developed specifically for this study (e.g., “I am confident that, in case my order does not come through in a satisfactory manner, I am able to take care of the problems on my own”). Disposition to trust can be defined as a customer’s personality trait that leads to generalized expectation about the trustworthiness. The scale to measure disposition to trust was assessed by using items adapted from prior studies of trust in online transaction contexts (Gefen, 2000) (e.g., “I generally trust other people”). Perceived risk can be defined as a consumer’s belief about the potential uncertain negative outcomes from the online transaction. A scale measuring the perceived risk of B2C retail Websites was created to utilize Jarvenpaa and Tractinsky (2000)’s definition of perceived risk in the context of online transactions (e.g., “How much risk would you tolerate when deciding to make a purchase from the web sites?”). The scale to measure consumer trust was assessed by using items adapted from previous studies on online transactions (Gefen, 2000; Jarvenpaa et al., 2000) (e.g., “I believe that the web site vendor has my best interest in mind”). As a dependent variable, purchase intention refers to the degree to which a consumer intends to buy from a certain Web site. The scale to measure purchase intention was assessed by using items adapted from previous studies (Gefen, 2000) (e.g., “I am likely to purchase the product(s) from this web site.”)

Table 5. Measurements Items for Constructs

Constructs	Measurement Items		Mean	S.D.	Loading
Purchase Intention (INT)	INT1	I am likely to purchase the product(s) from this web site.	5.39	1.364	0.918
	INT2	I am likely to recommend this web site to my friends.	5.40	1.341	0.862
	INT3	I am likely to make another purchase from this web site if I need the product(s) that I am going to buy.	5.50	1.317	0.858
Eigenvalue					4.001
Percent of explained variance					75.298
Perceived Risk (RIS)	RIS1	Purchasing from this web site would involve more product risk (i.e. not working, defective product) when compared with more traditional ways of shopping.	4.41	1.622	0.839
	RIS2	Purchasing from this web site would involve more financial risk (i.e. fraud, hard to return) compared with more traditional ways of shopping.	4.72	1.593	0.786
	RIS3	How would you rate your overall perception of risk from this web site?	3.42	1.523	0.813
Eigenvalue					3.000
Percent of explained variance					66.471
Consumer Trust (TRU)	TRU1	The web site vendor gives the impression that it keeps promises and commitments.	5.55	1.078	0.747
	TRU2	The web site understands the market it works in.	5.62	1.089	0.745
	TRU3	The web site knows how to provide excellent service.	5.11	1.140	0.801
Eigenvalue					3.999
Percent of explained variance					57.280
Online Transaction Self-efficacy (OSE)	OSE1	I am confident that I can obtain relevant information through online sources (e.g., online discussion groups, reputation sites, etc) on the Web vendors from whom I am planning to make online purchases.	5.75	1.201	0.791
	OSE2	I am confident that I am usually able to purchase exactly the item that I want from Web vendors.	5.66	1.350	0.822
	OSE3	I am confident that, in case my order does not come through in a satisfactory manner, I am able to take care of the problem(s) on my own.	5.55	1.347	0.790
	OSE4	I am confident that I am able to find a trustworthy web vendor based on ratings (e.g., the number of the stars or the smiley faces) provided by other consumers.	5.35	1.350	0.752
Eigenvalue					4.999
Percent of explained variance					59.804
Disposition to Trust (DIS)	DIS1	I generally trust other people.	4.89	1.379	0.893
	DIS2	I feel that people are generally reliable.	4.46	1.188	0.757
	DIS3	I generally trust other people unless they give me reasons not to.	5.33	1.310	0.811
Eigenvalue					3.000

Table 5 (cont'n)

Percent of explained variance					67.841
Persistence (PER)	PER1	When I set important goals for myself, I rarely achieve them.	2.54	1.459	0.768
	PER2	I do not seem capable of dealing with most problems that come up in my life.	2.16	1.547	0.769
	PER3	When unexpected problems occur, I don't handle them very well.	2.43	1.397	0.767
Eigenvalue					4.000
Percent of explained variance					57.264
Effort (EFF)	EFF1	When I make plan, I am certain I can make them work.	5.42	1.239	0.728
	EFF2	If I can't do a job the first time, I keep trying until I can.	5.48	1.223	0.847
	EFF3	Failure just makes me try harder.	4.89	1.482	0.719
Eigenvalue					5.001
Percent of explained variance					51.111
Initiation (INI)	INI1	If something looks too complicated I will not even bother to try it.	2.78	1.479	0.895
	INI2	I avoid trying to learn new things when they look too difficult.	2.50	1.392	0.849
	INI3	When trying to learn something new, I soon give up if I am not initially successful.	2.67	1.409	0.842
Eigenvalue					3.000
Percent of explained variance					75.198

4.3. Data Analysis and Results

The SEM (Structural Equation Modeling) was used to examine the proposed model of purchasing intention-behavior reinforcement. Based on the data gathered, this multivariate analysis that includes relevant latent variables was conducted to test whether the proposed model showed the significant structural relationships among these variables. The proposed model and hypothesis was tested using AMOS 4.0 Version with the maximum likelihood estimation method. This technique enables researchers to simultaneously assess measurement model parameters and structural path coefficients.

Exploratory, principal component factor analysis was conducted to determine the extent to which the latent variables were discriminant. The principal component factor

analysis was conducted using a Varimax rotation (refer to table 6). The objective with the explanatory factor analysis was to cull out measurement items that did not load on the appropriate latent variable. This was accompanied with checking of the internal consistency reliabilities (ICR) of the scales. Results suggested that several items be dropped from the scales in order to achieve a high level of reliability and validity. Specifically, an item was dropped if (a) it did not meet the threshold loading of 0.40 on any factor, (b) its highest loading on an expected factor was not above 0.60, or (c) it showed a significant variance across multiple factors (Hair et al., 1998).

Table 6. Factor Structure Matrix of the Latent Variables (Result of Explanatory Factor Analysis)

	Components							
	1	2	3	4	5	6	7	8
Initiation								
INI1	-0.007	-0.002	0.837	-0.102	-0.000	0.166	0.006	0.003
INI2	-0.001	-0.006	0.773	-0.303	0.003	0.289	-0.010	0.007
INI3	-0.005	-0.154	0.758	-0.124	-0.183	0.139	0.006	0.121
Effort								
EFF1	0.002	0.003	0.139	0.778	0.005	-0.183	-0.000	-0.181
EFF2	-0.006	-0.001	-0.264	0.704	0.171	-0.005	0.004	0.007
EFF3	0.193	0.186	-0.387	0.607	0.005	-0.242	0.134	0.002
Persistence								
PER1	-0.141	-0.119	0.103	-0.007	-0.007	0.780	-0.004	-0.007
PER2	-0.009	-0.006	0.007	-0.199	0.000	0.697	-0.001	0.256
PER3	-0.002	-0.005	0.348	-0.216	-0.126	0.643	-0.006	-0.005
Online Transaction Self-Efficacy								
OSE1	0.158	0.780	-0.125	0.000	0.006	-0.007	0.133	-0.005
OSE2	0.002	0.707	-0.002	0.227	0.178	-0.003	-0.004	-0.245
OSE3	0.341	0.675	-0.004	-0.001	0.190	-0.009	0.122	-0.006
OSE4	0.247	0.650	-0.127	0.007	0.293	-0.006	0.101	0.002

Table 6 (cont'n)

Disposition to Trust								
DIS1	0.118	0.008	-0.000	0.003	0.149	-0.007	0.838	-0.002
DIS2	-0.003	0.009	0.001	0.006	0.002	-0.003	0.798	-0.004
DIS3	0.002	0.009	0.000	0.003	0.149	-0.000	0.765	0.003
Perceived Risk								
RIS1	-0.104	-0.003	0.138	-0.003	-0.114	-0.000	0.003	0.824
RIS2	-0.209	-0.148	0.002	-0.000	-0.004	-0.000	-0.001	0.808
RIS3	-0.336	-0.007	0.001	-0.005	-0.006	0.186	-0.007	0.613
Consumer Trust								
TRU1	0.114	0.008	-0.003	0.006	0.736	-0.183	0.122	-0.000
TRU2	0.003	0.198	-0.115	-0.001	0.707	-0.007	0.130	-0.009
TRU3	0.240	0.178	-0.001	0.169	0.675	0.001	0.006	-0.214
Purchase Intention								
INT1	0.867	0.215	-0.005	0.002	0.135	-0.105	0.006	-0.163
INT2	0.819	0.223	0.000	0.009	0.005	-0.009	0.000	-0.161
INT3	0.806	0.140	-0.126	0.006	0.201	-0.006	0.004	-0.148

CFA (Confirmatory Factor Analysis) was conducted to examine the convergent validity of each latent variable. Convergent validity means the extent to which the measures for each variable are measuring the theoretical construct (latent variable) (McKnight et al., 2002). This process was done by specifying a single factor model for each of the latent variables. The correspondence between theoretical concept and empirical data in a CFA model was assessed using goodness-of-fit metrics such as χ^2 . However, the Chi-square statistic is sensitive to the number of samples and the probability of model rejection increases as sample size increases and hence the ration of chi-square to degree of freedom and other model fit indices should be taken into consideration (Bentler and Bonnet, 1980).

Table 7 shows the overall model fit indices for each CFA model. The CFA model for three constructs (disposition to trust, perceived risk, and purchase intention) was not

significant (p-value = .684, .350, and .114 respectively), hence it suggested that these models fit well. Unlike general hypothesis significance tests, it should not be significant to assess that the theoretical model fits actual data well (It should be noted that the null hypothesis is that the conceptual covariance (Σ) from the theoretical relationship among constructs equals to the actual covariance (S) from the actual data).

Even though chi-square statistics for three constructs (general self-efficacy, online transaction self-efficacy, and consumer trust) are significant, these does not well exceed the ration of chi-square to degree of freedom (3:1). For the CFA model for general self-efficacy, χ^2/df was 2.037, suggesting acceptable model fit. Likewise, the ratio of chi-square to degree of freedom was estimated as 3.462 and 2.082 for the online transaction self-efficacy and consumer trust, suggesting acceptable model fit. AMOS provides additional goodness-of-fit measures such as Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), and Root Mean Squared Error of Approximation (RMSEA). CFI, based on a comparison between the model and a model that assume independence of all variables, should exceed .90 for good model fit. GFI is a measure of the relative amount of variance and covariance in the sample that is jointly explained by the model. If GFI equals 1, the model fits very well. To fit closely, RMSEA should be .50 or less than .50. All other model fit indices exceed the recommended level (Byrne, 2001; Bhattacharjee, 2002), indicating that the measurement items of each construct are uni-dimensional.

Table 7. Overall Model Fit Indices of CFA for Convergent Validity

Construct	Chi-square	p-value	d.f	Chi-square/d.f.	GFI	CFI	RMSEA
Disposition to trust	2.281	.684	4	.570	.982	.981	.066
General self-efficacy	103.882	.000	51	2.037	.948	.973	.048
Online transaction self-efficacy	31.158	.000	9	3.462	.992	.997	.043
Consumer trust	49.968	.001	24	2.082	.966	.981	.059
Perceived risk	2.098	.350	2	1.049	.995	.999	.015
Purchase intention	4.348	.114	2	2.174	.990	.995	.073

Table 8 shows the means, standard deviations, composite reliabilities and AVEs (average variance extracted) of each construct in this study.

Table 8. Means, Standard Deviations, and Composite Reliabilities

	Construct	Number of Items	Mean	S.D.	Composite Reliability	AVE	Adapted from:
Generalized Self-efficacy	Initiation	3	2.650	1.427	0.897	0.743	Bosscher and Smit (1998)
	Effort	3	5.079	1.408	0.832	0.502	
	Persistency	3	2.427	1.483	0.842	0.572	
	Online transaction self-efficacy (OSE)	4	5.479	1.349	0.881	0.579	New items.
	Disposition to trust (DIS)	3	4.897	1.295	0.862	0.676	(Gefen 2000)
	Perceived risk (RISK)	3	4.182	1.580	0.854	0.661	(Jarvenpaa and Tractinsky, 2000)
	Consumer trust (TRUST)	3	5.451	1.124	0.842	0.571	(Gefen 2000; Jarvenpaa et al. 2000)
	Purchase intention (INTENTION)	4	4.897	1.295	0.924	0.752	(Gefen 2002; Jarvenpaa et al. 2000)

Convergent validity can be evaluated for the constructs using three criteria recommended by Fornell and Larcker (1981). They recommended that, first, all measurement factor loading should exceed .70, second, composite reliabilities are all higher than .80 and average variance extracted, lastly, (AVE) must exceed the variance due to measurement error for that construct, that is, AVE should exceed .50. Consistent

with criteria recommended by Fornell and Larcker, all measurement factor loadings exceed .70 (refer to Table 5.) Composite reliabilities ranged from .832 (for effort) to .924 (purchase intention). All composite reliabilities exceed the recommended level of .80. Variance extracted measures ranged from .502 (for effort) to .752 (for purchase intention), which exceeds the recommended level of .50. Hence, all scales met the criteria for convergent validity.

Discriminant validity means to extent to which measures of two constructs are empirically distinct (Bagozzi et al., 1991). Discriminant validity was tested by using a chi-square difference test. To do so, the chi-square statistic of the constrained model where the correlation between the two latent variables was fixed at 1.00 was compared with that of unconstrained model where the correlation between the two constructs was freely estimated. Significant differences of chi-square statistic between two models indicate that the pair of constructs is distinct (Bagozzi et al., 1991). If a chi-square difference is greater than 3.84, it suggests that the two constructs are significantly distinct (Suh and Han, 2002). The discriminant validity among the four latent variables was assessed: online transaction self-efficacy, initiation, effort, persistency, and disposition to trust. The results of discriminant validity testing are shown in Table 9.

Table 9. Chi-Square Difference Test for Discriminant Validity

	Model with fixed correlation		Model with Correlation to be estimated			Chi- square difference
	Chi- square	d.f.	Correlation coefficient	Chi-square	d.f.	
OSE-Initiation	47.864	19	-.274	59.799	20	11.935
OSE-Effort	34.019	19	.504	72.710	20	38.691
OSE-Persistency	27.788	19	-.405	50.657	20	22.869
OSE-Disposition to trust	36.129	19	.408	62.714	20	26.585

The chi-square differences range from 11.935 (between online transaction self-efficacy and initiation) to 38.691 (between online transaction self-efficacy and effort). The differences are much larger than the 3.84 threshold, indicating that each pair of constructs is distinct.

To reconfirm discriminant validity, it was evaluated by comparing the squared correlation between the two constructs with their respective variance and extracted measure. Discriminant validity can be demonstrated if the variance extracted measures of both constructs are greater than the squared correlation. As the table 10 shows, for instance, the variance extracted measures for the two constructs (.743, .676) are greater than the squared correlation between initiation and disposition to trust (.009).

Table 10. Comparison of Squared Correlation and Variance Extracted

	Squared correlation between two constructs	Their respective variance extracted.
Initiation – Disposition to trust	.009	.743 (initiation), .676 (disposition)
Effort – Disposition to trust	.068	.502 (effort), .676 (disposition)
Persistency – Disposition to trust	.072	.572 (persistency), .676 (disposition)
Initiation – Effort	.633	.743(initiation), .502 (effort)
Initiation – Persistency	.462	.743(initiation), .572 (persistency)

In table 11, diagonal elements are the square root of Average Variance Extracted. These values should exceed the inter-construct correlations for adequate discriminant validity.

Table 11. Correlations of Latent Variable

	Inten- tion	Risk	Trust	OSE	DIS	Per- sistence	Effort	Initia- tion
Intention	0.867							
Risk	-0.493	0.813						
Trust	0.457	-0.280	0.756					
OSE	0.572	-0.332	0.570	0.773				
DIS	0.142	-0.070	0.321	0.305	0.822			
Persistence	-0.355	0.220	-0.325	-0.295	-0.145	0.756		
Effort	0.267	-0.177	0.375	0.388	0.192	-0.519	0.709	
Initiation	-0.221	0.185	-0.229	-0.268	-0.043	0.506	-0.554	0.862

Overall, the model provides a good fit to the data. The Chi-square statistic was 446.388 with 320 degree of freedom ($p < .000$). Fit indices of the model are reported in figure 3.

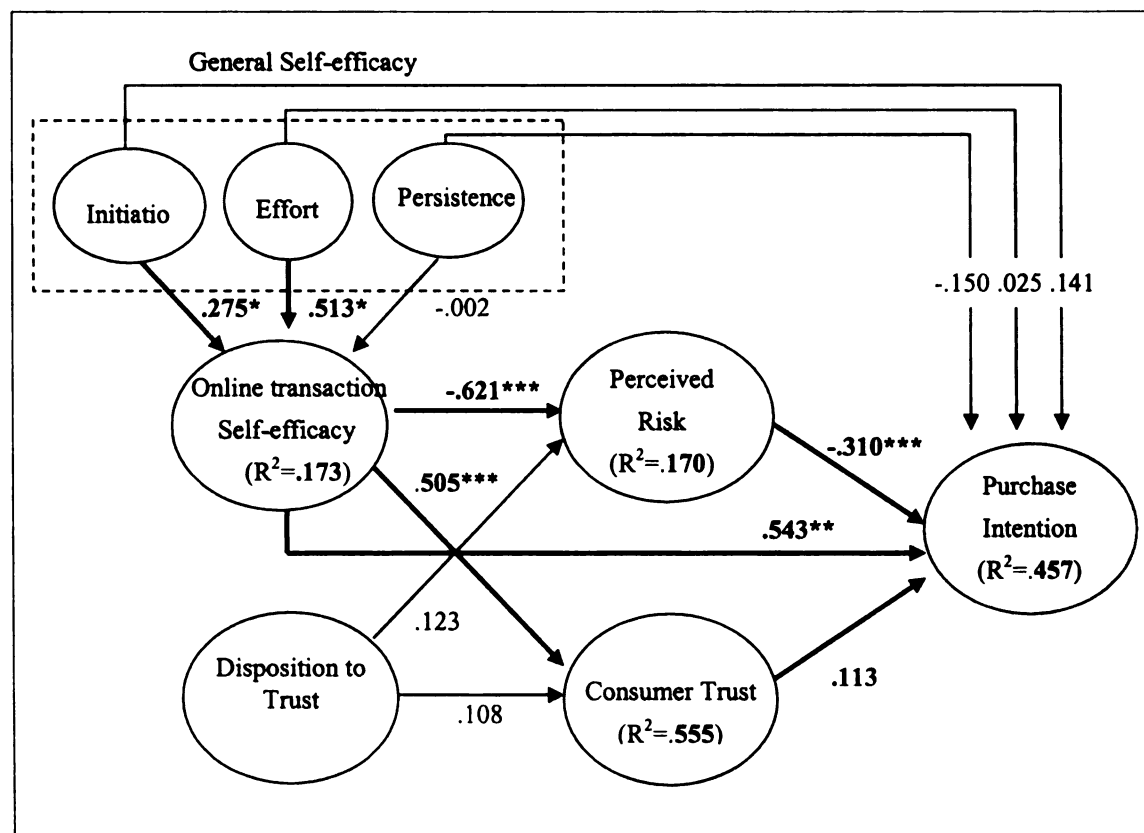


Figure3. SEM Result of the Final Model.

The fit indices are, in general, within the recommended guideline, indicating that the model fits the data (Chi-square= 446.388, d.f. =320 (p-val: .000). GFI = .873, AGFI = .839, CFI = .949, RMSEA = .043). The chi-square test of model fit is significant but the ratio of chi-square to degree of freedom is less than 2 (chi-square/degree of freedom = 1.395), so it is not necessary to conclude that the proposed model doesn't fit the data well. Other model fit indices surpassed the recommended threshold by several previous studies except GFI (Bentler and Bonnett, 1980). The RMSEA value is well below the value of .06 recommended by the previous research as an upper boundary (Hayduk, 1987; Etezadi-Amoli and Farhoomand, 1996), so it can be concluded that the proposed model fits the data well.

To investigate the validity of the hypothesized model (Model 1), an alternative model was proposed and compared with the original model. The alternative model (Model 2) encompasses the direct effect of GSE and OSE on purchase intention. Results show that GSE has no significant direct impact on purchase intention while OSE has significant direct impact on purchase intention.

Table 12. Model Comparison

Model	Chi-square (n=214)	d.f.	Sig.	GFI	AGFI	CFI	RESEA	Chi-square differences
Model 1	458.991	324	.000	.870	.837	.946	.044	$\chi^2(4)=12.603$,
Model 2	446.388	320	.000	.873	.839	.949	.043	p < .05

Note: Model 1: no direct effect of general self-efficacy and online transaction self-efficacy on purchase intention.

Model 2: direct effect of general self-efficacy and online transaction self-efficacy on purchase intention.

Chi-square differences between an original model and an alternative model ($\chi^2(4) = 12.603$) are significant at significant level .05. Results show that the alternative model including the direct effect of general self-efficacy and online transaction self-efficacy on purchase intention does fit the data well.

The structural model and hypotheses are tested by examining the significance of the path coefficients, and the variance accounted for the antecedent constructs. Figure 2 provides the results of hypothesis testing. Supporting H1-a and H1-b, general self-efficacy (initiation) and general self-efficacy (persistence) had significant effects on online transaction self-efficacy ($\beta = .275, p < .05$, $\beta = .513, p < .01$), but, inconsistent with H1-c, general self-efficacy (persistence) had no significant effect on online transaction self-efficacy ($\beta = -.002, ns$). In the alternative model, general self-efficacy (initiation, effort, and persistence) had no significant effect on purchase intention ($\beta = .141, ns$, $\beta = .025, ns$, and $\beta = -.150, ns$, respectively)

Supporting H2-a, online transaction self-efficacy had a significant effect on perceived risk ($\beta = -.621, p < .001$). Supporting H2-b, online transaction self-efficacy had a significant effect on consumer trust ($\beta = .505, p < .001$). In the alternative model, online transaction self-efficacy had a significant effect on purchase intention ($\beta = .543, p < .01$). Inconsistent with H3-a and H3-b, disposition to trust had no significant effect on perceived risk ($\beta = .123, ns$), and this factor had no significant effect on consumer trust ($\beta = .108, ns$). Supporting H5, perceived risk had a significant effect on purchase intention ($\beta = -.310, p < .001$). The model accounted for substantial variance in online transaction self-efficacy ($R^2 = .348$), modest variance in perceived risk ($R^2 = .292$) and substantial variance in consumer trust ($R^2 = .625$).

Consumer trust had a significant effect on purchase intention ($\beta = .808, p < .001$) while it had no significant effect on purchase intention ($\beta = .113, ns$) in the alternative model. The model accounted for substantial variance in purchase intention ($R^2 = .488$). In conclusion, the majority of the model tests supported all of the hypotheses except H1-c, H3-a and H3-b.

5. CONCLUSION

5.1. Discussion

The results of this study provide support for the model presented in figure 1 and for the hypotheses regarding the association among the model variables. This study illuminates the applicability of self-efficacy in online transactions, which requires decision-making within uncertain contexts of online transactions. The results of this study point out the important role of online transaction self-efficacy by negatively influencing perceived risk and positively influencing consumer trust and even purchase intention. As demonstrated, self-efficacy reduces uncertainty. This model presents an insight as to how uncertainty reduction and purchase intention can be affected by incorporating a motivational factor such as self-efficacy into the consumer trust-building. These findings extend the scope of previous research on uncertainty reduction and purchase intention in e-commerce. Consistent with previous research that examined the direct effect of trust on purchase intention or behavior (Gefen, 2000), the direct impact of trust on purchase intention also has been proved in this study. Consistent with the findings that Jarvenpaa et al. (2000) revealed, it has been proved that an indirect effect of trust on purchase

intention through risk perception and attitude (trust → perceived risk → purchase intention).

Overall, general self-efficacy has a positive impact on online transaction self-efficacy ($\beta = .275$, $p < .05$ and $\beta = .513$, $p < .05$, respectively) even though persistence construct does not have a significant impact on online transaction self-efficacy. It should be noted that two general self-efficacy constructs can account for about 35% of variances of online transaction self-efficacy. Therefore, it follows that this result supports the statement that GSE is one important causal antecedent of SSE and GSE positively influences SSE (online transaction self-efficacy here) across tasks and situations.

Online transaction self-efficacy has been shown to influence on consumer trust significantly. It is noted that online transaction self-efficacy is more powerful than disposition to trust in influencing consumer trust ($\beta = .505$ for online transaction self-efficacy, not significant for disposition to trust). There are theoretical arguments (McKnight et al., 2002) and an empirical test (Gefen, 2002) that disposition to trust affects trust. Gefen (2000) showed that disposition to trust was a significant antecedent of trust ($\beta = .53$, $p < .01$). But, in the presence of online transaction self-efficacy, disposition to trust no longer had a significant effect on perceived risk, indicating that online transaction self-efficacy is a stronger predictor of risk perception than disposition to trust is. Disposition to trust was defined as a general personality trait that encompasses a general expectation of how trusting one should be (McKnight and Chervany, 1998). This kind of general trait-related antecedent seems to have a limitation in explaining trust formation. In the future study, there should be many discussions of whether this construct should be included as an antecedent of trust.

Online transaction self-efficacy has a negative impact on perceived risk ($\beta = -.621$, $p < .001$), that is, online transaction self-efficacy reduce risk perception significantly. This result shows that situation and task-specific self-efficacy can play a significant role in uncertainty reduction mechanism while an individual would have to make a choice and behave. The degree of perceived risk is negatively associated with purchase intention. The higher degree of perceived risk is, the lower purchase intention will be. The low perception of risk in turn influences the attitude of the consumer toward the web vendor. It is noted that perceived risk and consumer trust account for about 49 percent of the variance of purchase intention ($R^2 = .488$).

5.2. Implications

These findings have theoretical implications. First, this study has shown that it is applicable to introduce self-efficacy into the research of trust in online transactions. This attempt has been presented in the domain of e-commerce for the first time. While self-efficacy has been introduced and utilized in a considerable amount of research in IS and behavioral sciences, little is known of self-efficacy in online transactions. Understanding the nature and antecedents of trust has been a major issue for researchers and practitioners. This study also has explored possible antecedents and examined existing one of trust building in e-commerce.

Second, this study presents a new perspective in e-commerce research by showing that self-efficacy can be utilized in elaborating the uncertainty reduction mechanism as a previous perspective. Trust plays an important role in making it less risky, uncertain and insecure transaction and, as this study suggests, self-efficacy can play a significant role in reducing uncertainty as well. As shown in Figure 3, without other factor's intervention,

online transaction self-efficacy accounts for as much as 63 percent of the variance of consumer trust and a modest 29 percent of the variance of perceived risk.

Third, this study has shown that there is a need to explore possible antecedents and examine existing ones regarding trust building in e-commerce. Disposition to trust was viewed as a general propensity to trust others, which influences an individual's beliefs and intentions about a Web vendor (McKnight et al, 2002). Contrary to received wisdom, at least, as to perceived risk, disposition to trust which has been considered a significant variable has turned out to be an insignificant factor in the presence of self-efficacy. As has mentioned earlier, disposition to trust was included as a significant antecedent in examining trust building in online transaction; however, it has turned out that this factor does not play a role as an antecedent in the presence of more situation-specific factor like online transaction self-efficacy. In the study of trust in virtual community, Ridings et al. (2002) posited that people's disposition to trust in the virtual community will affect their trust of other members and also showed that this hypothesis was statistically significant: disposition to trust affects trust in other's ability positively ($\beta = .15, p < .01$) and trust in other's benevolence and integrity ($\beta = .18, p < .01$). It should be noted that, as another antecedent of trust, perceived responsiveness and other's confiding personal information was included in their research. These factors are all more general-type constructs. Therefore it can be suggested that disposition to trust can play a role in affecting trust, however, it cannot under the existence of more specific-situations and task antecedents. Also, this finding reflects how extensively self-efficacy influences trust building.

Lastly, in practical respects, a web-vendor and e-business should take into account the fact that self-efficacy of their customer can be enhanced by the extent to which they

have cumulated previous purchase experiences. Although a web-vendor cannot directly engage in improving the degree of consumer's self-efficacy, it is obvious that the individual self-efficacy judgment can be positively influenced by cumulated experiences and transactions.

5.3. Limitations & Suggestions

This study has several limitations. First, it has attempted to address the applicability of self-efficacy in predicting trust building in e-commerce. As early studies may confront many problems, this research also faced the obstacles that are common in exploratory studies in terms of measures of constructs and constructions of hypothesis between self-efficacy and other factors. Although this study built on measures of new task-and-situation self-efficacy in e-commerce context, more modifications will be needed to improve the reliability and validity of this new SSE. The composite reliability of the construct is .881. Although future studies need to refine their measures, this reliability is considered acceptable for exploratory studies.

Second, this study asked the respondents to give their responses based on their previous transaction experiences. It is acknowledged that, although this measuring method has the advantage of reflecting an overall tendency of the respondents' online transactions, their answers which are based on long-term (6-months) retrospection runs may discount the reliability of this study. To overcome this limitation, future studies will have to focus on a shorter time frame (e.g., a week).

Third, because the web retailer was not given to the respondents, all the web vendors with whom the respondents have had business transactions were not unfamiliar to them. If the subjects were given an unfamiliar e-commerce vendor, the effect of online

transaction self-efficacy on other constructs could be more firmly assessed. Therefore, there needs to be further research to measure the constructs with the web site established and managed by an unfamiliar web vendor.

Lastly, to enhance external validity of this study, the research findings should be tested with samples having different demographic backgrounds. In this study, many of the participants were frequent user of the Internet and e-commerce, and seemed to have had somewhat positive experience with the Internet. If older consumers were asked to show their answers, they might show different responses.

The suggestions for future research are as follows. First, based on the findings that internal/subjective factors of trust-building play an important role, external/objective factors (e.g. the presence of a third party seal, privacy protection and security protection, etc.) should also be taken into consideration in constructing a research model. Recently, Web vendors have tried to promote trust in the Internet as well as beliefs about the specific vendor through seals from agencies such as TRUSTe. This agency assures consumers secure transactions by getting web vendors to adhere to its privacy policy. Presence of a third party seal leads to the assurance of Internet vendors. There is a clear effect of external/objective factors on trust building and, thereby, this kind of factor should be examined together. That will make for a more comprehensive approach to trust building in e-commerce.

Second, to enhance the validity of the research, the respondents should be given two or three unfamiliar web vendors and self-retrospective questions should be avoided. This study allowed the participants to recall any transaction with their web vendor with which they had have already transacted. As a result, unlike other research which

conducted an experiment regarding web vendors having certain retail domains such as books and travel, this study came to get data across various retail domains. This procedure, however, likely biased the responses of the participants in a positive direction. This is related to the nature of the survey methods, which do not limit the extent of treatment. Future studies are clearly needed to set up an experimental setting to obtain more reliable data.

Lastly, there is a need to examine the effect of self-efficacy (both general self-efficacy and online transaction self-efficacy) on other constructs, e.g. purchase intention. To be more parsimonious research, this effects were not considered, however it would be necessary to figure out this association between self-efficacy and purchase intention. This will contribute to the examination of the direct effect of self-efficacy on purchase intention and represent fruitful ways of advancing trust research in e-commerce.

APPENDIX: Survey Questionnaire

We are conducting a study on factors related to transactions in B2C retail e-commerce. We are requesting your voluntary participation in our study. This study will give you the opportunity to become aware of key factors in e-commerce transaction or experience transactions. This study asks for your reaction to electronic commerce Web vendors and your experience with conducting transactions on the Internet.

It will take 30 minutes to complete this questionnaire. Please note that you may withdraw from participation at any time without adverse consequences. **All information you provide will be held in strictest confidence and only aggregate information will be used for research purpose.** Please be absolutely candid about all your answers. There are no known risks to participating in this research. Your individual privacy will be maintained in all published and written results from the study.

Please fill out the questionnaire if you agree to participate in this research study. By submitting your responses, you are agreeing to participate in this research. If you are filling out this questionnaire in connection with a course you are currently enrolled in, **enter your person ID number and answer ALL of question items** so that you can receive full credit for your participation

If you have any questions regarding this project, please do not hesitate to contact Young Hoon Kim at Ph: 517) 355-3088; or email at kimyou49@msu.edu or Dr. Kim at ph: 517) 353-6712; Fax: 517)355-1292 or email at dankim@msu.edu. Thank you for your participation.

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GENERAL INSTRUCTIONS

Most of the scales used in this survey use a rating system with descriptions at either end. The end points of the scales take the form of statements such as: "strongly disagree" to "strongly agree", "extremely unlikely" to "extremely likely", "completely disagree" to "completely agree", and "not at all confident" to "completely confident". You are asked to answer by checking one of the choices provided. See example below.

	Strongly Disagree	Mostly Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Mostly Agree	Strongly Agree
Today is a good day.	1	2	3	4	5	6	7

By selecting the fifth choice, you would be saying you agree somewhat with the statement that today is a good day.

GENERAL DESCRIPTION

Please recall your actual B2C (Business-to-Consumer) transactions that have happened in the past three months. If you have never experienced B2C ecommerce, please take time to go to one of competitive B2C retailer websites e.g., amazon.com, barnesandnoble.com)

Note: Most of the questions in this survey are about **the website that you make transaction**. Even if you do **NOT** buy from the site, please answer all questions.

Section 1: We would like to know your opinions about other people in general.	strongly disagree		Neutral		strongly agree	
DT1: I generally trust other people.	1	2	3	4	5	6 7
DT2: I tend to rely on other people.	1	2	3	4	5	6 7
DT3: I generally have faith in humanity.	1	2	3	4	5	6 7
DT4: I feel that people are generally reliable.	1	2	3	4	5	6 7
DT5: I generally trust other people unless they give me reasons not to.	1	2	3	4	5	6 7
Section 2: We would like to know your confidence with your ability to handle the problems of every day life.	strongly disagree		Neutral		strongly agree	
GSE1: If something looks too complicated I will not even bother to try it.	1	2	3	4	5	6 7
GSE2: I avoid trying to learn new things when they look too difficult.	1	2	3	4	5	6 7
GSE3: When trying to learn something new, I soon give up if I am not initially successful.	1	2	3	4	5	6 7

GSE4: When I make plan, I am certain I can make them work.	1	2	3	4	5	6	7
GSE5: If I can't do a job the first time, I keep trying until I can.	1	2	3	4	5	6	7
GSE6: When I have something unpleasant to do, I stick to it until I finish it.	1	2	3	4	5	6	7
GSE7: When I decide to do something, I go right to work on it.	1	2	3	4	5	6	7
GSE8: Failure just makes me try harder.	1	2	3	4	5	6	7
GSE9: When I set important goals for myself, I rarely achieve them.	1	2	3	4	5	6	7
GSE10: I do not seem capable of dealing with most problems that come up in my life.	1	2	3	4	5	6	7
GSE11: When unexpected problems occur, I don't handle them very well.	1	2	3	4	5	6	7
GSE12: I feel insecure about my ability to do things.	1	2	3	4	5	6	7
Section 3: We would like to know your confidence when you make a purchase from e-commerce Web vendors.	strongly disagree			Neutral			strongly agree
OSE1: I am confident that I can obtain relevant information through online sources (e.g., online discussion groups, reputation sites, etc) on the Web vendors from whom I am planning to make online purchases.	1	2	3	4	5	6	7
OSE2: I am confident that I am usually able to purchase exactly the item that I want from Web vendors.	1	2	3	4	5	6	7
OSE3: I am confident that, in case my order does not come through in a satisfactory manner, I am able to take care of the problem(s) on my own.	1	2	3	4	5	6	7
OSE4: I am confident that I am able to find a trustworthy Web vendor based on ratings (e.g., the number of the stars or the smiley faces) provided by other consumers.	1	2	3	4	5	6	7
OSE5: I am confident that, in case the merchandise I have purchased online turns out to be defective, I am able to return it without any problems.	1	2	3	4	5	6	7
OSE6: I am confident that, if the Web vendor I made an online purchase from would not take back a defective product, I am able to solve the problem through the assistance of a third party (e.g., friends, better business bureaus, or relevant governmental agencies.)	1	2	3	4	5	6	7
Section 4: We would like to know your perception (expectation) of trustworthiness regarding the web site(s) that you have made a purchase.	strongly disagree			Neutral			strongly agree
PT1: The web site is trustworthy.	1	2	3	4	5	6	7

PT2: The web site vendor gives the impression that it keeps promises and commitments.	1	2	3	4	5	6	7
PT3: I believe that the web site vendor has my best interests in mind.	1	2	3	4	5	6	7
PT4: The web site vendor has little concern for its customers.	1	2	3	4	5	6	7
PT5: In general, I DO NOT trust the purchasing process in the web site as much as I trust traditional purchasing processes (i.e. thru local stores).	1	2	3	4	5	6	7
PT6: Promises made by the web site is likely to be reliable.	1	2	3	4	5	6	7
PT7: I do not doubt the honesty of the web site.	1	2	3	4	5	6	7
PT8: I expect that the web site will keep promises it makes.	1	2	3	4	5	6	7
PT9: I expect that the web site have good intentions toward me.	1	2	3	4	5	6	7
PT10: I expect that the web site intentions are benevolent.	1	2	3	4	5	6	7
PT11: I expect that the web site is well meaning.	1	2	3	4	5	6	7
PT12: The web site understands the market it works in.	1	2	3	4	5	6	7
PT13: The web site knows about the items that it deals with.	1	2	3	4	5	6	7
PT14: The web site knows how to provide excellent service.	1	2	3	4	5	6	7
Section 5: We would like to know your perception of risk regarding the web site(s) that you have made a purchase.	strongly disagree		Neutral			strongly agree	
PR1: How much risk would you tolerate when deciding to make a purchase from the web sites? (1- absolutely no risk / 7- significant risk)	1	2	3	4	5	6	7
PR2: How would you characterize your experience with the web site as it relates to making a purchase decision? (1- very negative situation / 7- very positive situation)	1	2	3	4	5	6	7
PR3: What is the likelihood of your getting a good bargain by buying from this web site? (1- very unlikely / 7- very likely)	1	2	3	4	5	6	7
PR4: Purchasing from this web site would involve more product risk (i.e. not working, defective product) when compared with more traditional ways of shopping. (1- strongly disagree / 7- strongly agree)	1	2	3	4	5	6	7
PR5: Purchasing from this web site would involve more financial risk (i.e. fraud, hard to return) compared with more traditional ways of shopping. (1- strongly disagree / 7- strongly agree)	1	2	3	4	5	6	7
PR6: How would you rate your overall perception of risk from this web site? (1- absolutely no risk / 7- significant risk)	1	2	3	4	5	6	7

Section 6: We would like to know about your shopping decision and your willingness to buy, in the future from the web site(s).		strongly disagree		Neutral		strongly agree
WT1: I am likely to purchase the product(s) from this web site.		1	2	3	4	5 6 7
WT2: I am likely to recommend this web site to my friends.		1	2	3	4	5 6 7
WT3: I am likely to make another purchase from this web site if I need the product(s) that I am going to buy.		1	2	3	4	5 6 7
WT4: I would be reluctant to purchase any product(s) from this web site.		1	2	3	4	5 6 7
Section 13. (Respondent Demographics)						
D1. Your age (in years):		D2. Your gender:				
D5. In general, how would you rate your experience with computers? (1-Novice / 7-Expert)		1	2	3	4	5 6 7
D6. How would you rate your experience with Web technology (i.e. searching, browsing, finding information, etc) ? (1-Novice / 7-Expert)		1	2	3	4	5 6 7
D7. Approximately, how many times per week do you use the Internet (including, e-mail checking, searching, browsing, etc)?		() / week				
D8. Approximately, how many hours per day do you spend on the Web?		() hours) / day				
D9. Approximately, how many hours per day do you spend overall on a computer (include spending on the Web)?		() hours) / day				
D10. How long have you been making a purchase from e-commerce Web sites? (pick one)		() years)				
D11. Approximately, how many times per month do you make a purchase from e-commerce web sites?		() / month				

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