PSYCHOLOGICAL FACTORS AFFECTING THE CONSUMER'S INTENTION TO USE E-COMMERCE: A THEORETICAL APPROACH

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Abstract

There is a need in the literature for an application of the well known social cognitive theory in the area of e-commerce. Hence, this paper develops and models a theoretical framework to study the impact of psychological factors based on the social cognitive theory on the intention to use e-commerce. More specifically, the paper examines the role of individuals' beliefs about their abilities towards the intention to use e-commerce technology (e-commerce self-efficacy). A conceptual model, based on Bandura's social cognitive theory, was developed to test the personnel innovation in information systems, e-commerce self-efficacy, outcome expectations, trait anxiety, e-commerce anxiety, and consumer trust on the customers' intentions to shop online. Thus, the model developed can be applied to enhance the research in the area of e-commerce and can be used in different areas of e-commerce. Future studies can be employed in testing the model via using exploratory survey analysis to provide further support for the social cognitive theory and its application in the area of e-commerce.

Keywords: Psychological factors, e-commerce self-efficacy, model, Trait Anxiety

1. Introduction

Online transactions have made the world very small. Via internet, individuals can sell their products and promote them without opening shops or employing sales men. This process can be conducted via the assistance of internet marketing i.e. Electronic Commerce. Using world-wide-web, marketers can display their products, businesses and services to very wide categories of people. The introduction of this new technology provides various means for retailers to enhance and trade their businesses. Internet facilities and other means of communications make e-commerce more accessible for different varieties of people. E-commerce started first in USA as it was used for military purposes and medical exchange experience until it was widely distributed in and the USA, and the purposes of using e-mail and internet widen also.

Online usage has decreased time and distance barriers (Sheth, Eshghi & Krishman, 2001; Chiam, 2006) and therefore it has been used as a distribution channel in e-commerce to the effect that the procedures

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and methods of commerce have been widely changed (Torjak, 2003). E-commerce started in 1990s (Padhyay, 2002) and has, by all means, effected industry all over the world. In spit of the wide distribution of e-commerce activities, the nature, dynamics and the impact of this phenomenon is known. This is a consequence of the paucity of systematic investigation reported in literature concerning this subject (Lee, 2001, p. 3).

It is worth noting here that in the case of Australia, 80% of business leaders admit that electronic commerce will revolutionize the ways of business they will carry out in the coming few years. According to Andersen Consulting Group (1999) Australian organizations are aware of the opportunities that may be associated with introducing the e-commerce, but they are not confident how much it adds value to their businesses.

MacGregor and Vrazalic (2004), have studied the e-commerce usage among Australian SMEs and tried to compare it with other countries. They showed that SMEs in Karlstad (Sweden) had progressed in e-commerce use more than their counterparts in Australia (Wollongong) two years later. E-commerce rate in Karlstad was 52.3% while in Wollongong it was 15.6% (P. 43). This shows that SMEs need to be re-educated about the values of e-commerce. According to the Australian Bureau of Statistic, the proportion of businesses that have been conducted via the internet was only 12% during 2004-2005.

Definitions of E-commerce

E-commerce is the short form of Electronic commerce. It can also be shortened to 'eCommerce'. These two shortening indicate the full electronic commerce words (Forder and Quirk, 2001). Ecommerce was defined differently by different researchers (Khosrowpour, 2005). According to Laudon, 2003, e-commerce is the use of the internet and the web to transact business. More formally, digitally enabled commercial transactions between and among organizations and individuals.

Business to Consumer E-Commerce (B2C)

This paper will concern about B2C e-commerce. For this purpose the model of e-commerce has been defined as: "The sale of goods or services electronically via internet directly to individual customers for their own use, rather than to businesses" (Chan, 2001).

However, even though the e-commerce usage worldwide is dramatically increasing, there are still many psychological factors (such as self-efficacy, trait anxiety, consumer, outcome expectations etc) that encumber the growth of e-commerce (EC) worldwide, especially people's perception towards conducting online transactions. Hence, there are many factors yet to be fully covered in the literature that dealing with these psychological factors that affect the intention to use e-commerce. Hence, one of the purposes of this paper is to review the extensive literature on the effect of self-efficacy on e-commerce. The second aim is to

develop and identify a theoretical framework to study the impact of cognitive social factors on the adoption and usage of EC. More specially, we are identifying new factors such as e-commerce self-efficacy, trait anxiety, consumer trust, which have not been used yet (in this combined format) in the area of e-commerce self-efficacy. Several new hypotheses will be developed throughout this paper.

This paper is organised as follows; Section II examines the literature in regard to the main factors that affect the intention to use e-commerce (such as general self-efficacy, e-commerce self-efficacy, trait anxiety, consumer trust etc). Section 3 reports the empirical studies in regard to the application of the social cognitive theory in other areas. The framework developed will be reported in section 4 as well as the hypothesis. A summary and future research will be reported in Section 5.

2. Literature Review

2.1 Trait Anxiety (TA)

Trait Anxiety (TA) is defined by Spielberger et al. (1970) as a common tendency to undergo a state anxiety when contended with troubles or challenges. Tellegen (1985) argues that individuals are more expected to suffer anxiety through time and across situations as TA is comparatively stable. Both anxiety and cognitive efficiency are believed to be strongly associated by researchers for a long time. Yerkes and Dodson (1908) tried to simplify this relationship by suggesting a U-shaped

relationship model to represent anxiety and cognitive performance. This model and other related research material suppose that very low anxiety levels increasing to fairly average levels will trigger off more cognitive resources to become more accessible and foster the rate of mental operations (Suri & Monroe, 2001). Anxiety is probably the best domain where the distinctiveness of trait-state is best recognized and empirically differentiated. Trait anxiety is identified as a person's general disposition to be anxious where State anxiety refers to anxious affect of situational frustration (Spielberger, 1966; Usala & Hertzog, 1991).

Trait anxiety is regarded as a major element of personality in most modern personality theories as indicated by Thatcher and Perrewe (2002), (see Digman, 1990, for a review). Spielberger, Gorusch, and Lushene (1970), offered a straightforward definition for trait anxiety describing it as "relatively stable individual differences in anxiety proneness" (p. 3). Wilson et al. (1999) stated that trait anxiety is conceptualized as fixed or stable attribute of personality whereas they demonstrated state anxiety as a momentary manner of anxiety that depends on the situation. In order to discover and forecast the association between a person's respiratory distress and trait anxiety, Wilson et al. built a model that indicated the following results:

Individuals suffering high levels of trait anxiety will be more likely exposed to significant increase in state anxiety compared to those with lower levels of trait anxiety.

Trait anxiety, according to Murata, et al. (2004) stands for the general propensity to be anxious as a personality characteristic whereas state anxiety is described as the level of anxiety at a particular moment. High trait anxiety causes individuals to organize situations while for individuals who are low in trait anxiety, personal adequacy is evaluated more as threat (Spielberger et al. 1973; 1983).

Suri and Monroe (2001) demonstrated how mental efficiency starts to deteriorate if the arousal intensity surpasses a supposed optimal point on the arousal scale. According to this theory it has been suggested that such analysis can be also valid to anxiety and its impact on both memory and responsiveness (Christianson, 1992; Eysenck, 1982). That is to say, reasonable degrees of anxiety are supposed to assist learning and memory performance; nevertheless, consecutive intensifying in these levels of anxiety beyond the optimal anxiety level will lead to lower degrees of learning and memory operating (Christianson, 1992). Anxiety experienced while using e-commerce systems is perceived as a form of a domain–specific trait anxiety. Thus we hypothesise that:

H1: There is a negative relationship between customer's Trait anxiety and E-Commerce self-efficacy. Customer's Trait anxiety will negatively influence the E-Commerce self-efficacy.

2.2 E-Commerce system Anxiety

State anxiety demonstrates personal feelings of tension, anxiety, and concern which varies in strength and over time (Spielberger et al. 1973; 1983). The following case described by Tome Keating can provide the reader with a deeper understanding of this concept[1]:

Automotive of the sales process at our company started two years ago, when we began looking for software that could alleviate many sales problems. At the time, our sales representatives did not have personal computers on their desks- and most did not want them!

Computer anxiety is defined as "the fear of impending interaction with a computer that is disproportionate to the actual threat presented by the computer" (Howard, Murphy, & Thomas, 1986, p. 630). A Similar definition for Computer anxiety is offered by Bozionelos (2001) where he explained that the concept stands for the destructive emotions and cognitions evoked either in real or imaginary dealings with computer-based technology. In a study by Anderson (1995), a positive significant relation was found between mathematics and computer anxiety. This observation was also reported in other 10 research reports as pointed by Rosen and Maguire (1990).

In a study by Thatcher and Perrewe (2002), they explained how social cognitive theory

[1] To our knowledge, no study in E-commerce systems taking into accounts the Affect of Trait anxiety into the E-commerce usage.

[1] Tome Keating is senior vice president for the Asset Management and Pension Services operation of The Travelers, Hartford, Conn.

indicated how self-efficacy and anxiety influence each other (Bandura, 1977, 1986, 1997). As implied in the SCT, Individuals who suffer higher levels of anxiety, may report lower level of efficacy; while as their efficacy rise, they report a decreased anxiety. Despite the reciprocal nature of this relation, SCT research has found that efficacy beliefs are the major influence on individuals decision making regarding their ability to perform tasks (Bandura, 1986).

Computers utilizations is expected to be negatively influenced by feelings of anxiety due to the fact that people are expected to avoid behaviors that bring up anxious feelings. Many studies have illustrated a relationship between computer anxiety and usage (Compeau & Higgins, 1995b, Igabaria, et al., 1989; Webster, et al., 1990). People who highly interact with computers are usually computerphrenics (less anxious) while those who are more anxious are less expected to use computers (Igabaria and Iivari 1995). These remarks suggest that anxiety must be taken in to consideration when studying computer usage.

Additionally, in Webster (1989) Computer anxiety has been linked to negative beliefs about computers, difficulties while playing with them, and evasion of technology. Individuals who produce desired and better consequences are those who feel more relaxed while using the machine.
Emotional experience is proved to have a major influence on individuals' decision making (Maner, 2007; Loewenstein, Weber, Hsee, & Welch, 2001), as feelings like anger,

fear and disgust can guide individuals choice for a certain course of action (Lerner & Keltner, 2001). Examining these arguments, we can assume a relationship between anxiety and the basic forms of risk-avoidance while making a decision. In two separate studies by Maurer & Simonson (1984) and Bozionelos (2001), the Behavioral expressions of computer anxiety were listed as follows:

- Avoidance of both computers and areas where computers are placed
- Extreme and unnecessary concern with computers
- Attempts to interrupt the necessary utilization of computers
- Negative remarks regarding computers

The occurrence of anxiety indicates the existence of potential threat and improves individuals resistance to threat as it promotes psychological responses in reaction and initiates actions of threat avoidance which is considered a key element in the risk-avoidance decision making (Barlow, 1988; Butler & Mathews, 1987).

In two surveys by Anderson (1995) and Morrow et al. (1986) that included 108 males and 65 females, no considerable relation was found to explain dissimilarities regarding computer anxiety and attitudes towards computers based on gender. However, in another study by Dambrot et al. (1985) that included 599 female and 342 male college students, females were found to be less comfortable towards computer, got lower marks in a computer skill test, and had less prerequisite ability and experience in

mathematics. Thus we hypothesis the following:

H2: There is a negative relationship between customer's E-commerce anxiety and E-Commerce self-efficacy. Customer's E-commerce anxiety will negatively influence the E-Commerce self-efficacy[2].

2.3 Personal Innovativeness in Information Systems (PIIS)

Individual's dissimilarities are a crucial factor in the execution of any technological innovation as stated by Agarwal and Prasad (1999). The effect that the differences have has been deeply investigated in a broad variety of areas including Information systems and marketing.

Personal innovativeness is defined by Hurt et al.(1977) as the individuals' keenness to change. Agarwal and Prrasad (1988b, p. 206) define PIIT as "the willingness of individual to try out any new information technology". Accordingly, in this study where we inspect the PIIS function as a predecessor to E-commerce self-efficacy and E-commerce anxiety, we will define PIIT as individuals' willingness to experiment with new Information systems, like E-commerce. (Uray & Ayla, 1997; Thatcher and Perrewe , 2002). PIIT as demonstrated by Thatcher and Perrewe (2002) as a situation-specific,

stable trait which is thought to have an even impact across situations including those that involve Information systems. PIIT is suggested to be high for individuals who are seeking out new, mentally, or physically "stimulating" experiences. Alternately, lower levels of PIIT are reported for individuals who have less tolerance for danger, and who are more expected to report general computer anxiety.

H3: There is a positive relationship between Personal Innovativeness in Information Systems and E-commerce Self-efficacy. Personal Innovativeness in Information Systems will positively influence the E-commerce Self-efficacy.

2.4 General Self-Efficacy (GSE)

According to Bandura (1986), people's beliefs present the basis for their level of motivation, emotional conditions, and actions rather than what is objectively the situation. Because self-efficacy theory provides clear strategies on how to develop and improve the excellence of human performance like motivation and accomplishments, it is regarded as a critical component of the social cognitive theory (Bandura, 1995; Siu, 2007). Bandura in his social learning and social cognition theories portrayed self-efficacy as a dynamic, many-sided conviction system functioning selectively across different activity fields and different circumstantial difficulties. Bandura (1989, 1997) and Litt (1988) argued that self-efficacy is essential as it influences an individual's capacity and motivation to put control into effect.

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[2] To our knowledge, no study in E-commerce systems taking into accounts the impact of E-commerce anxiety into the E-commerce self-efficacy.

Social cognitive theory as structured by Bandura (1986, 1987) and Chen, et al., (2001) states that self-efficacy beliefs diverge on three scopes:

1) Level or magnitude: The degree of task's difficulty.

2) Generality: The level to which beliefs' degree and strength generalize across tasks and circumstances.

3) Strength: certainty of successfully performing a particular level of task difficulty.

Bandura in 1977 defined self-efficacy as "the belief in one's ability to perform a task or more specifically to execute a specified behavior successfully" (p.79). As observed the self-efficacy was first presented as very task-specific which lead may researches to be conducted according to this belief. Later on, attempts to investigate the concept as a comprehensive one resulted in the construction of general self-efficacy (GSE) (Woodruff, Cashman, 1993).

General self-efficacy is described as "one's belief in one's overall competence to effect requisite performances across a wide variety of achievement situations" (Eden, 2001, p. 73) or as " individuals' perception of their ability to perform across a variety of different situations" (Judge, Erez, and Bono 1998a, p. 170). Even though GSE is derived from the idea of self efficacy generality explained in social cognitive theory (Bandura, 1997), GSE is viewed as a separate concept. Self efficacy is differentiated from GSE as it is relatively flexible, task-specific belief, while GSE is relatively constant, characteristic-

like, general belief of capability (Chen et al., 2000; Chen, Gully, & Eden, 2001). In a two studies, researchers attempted to find a reliable measurement to evaluate self-efficacy that is unrelated to particular situations (Sherer et al., 1982; Kim and Kim, 2005). They emphasized efficacy expectancies (self-efficacy) as generalized to an overall individual behaviour rather than particular behaviour. Sherer et al. (1982) brought a measure for the General Self-Efficacy Scale (GSES) into being and acquired a factor-based model of three sub-dimensions:

- Initiative: willingness to initiating behaviour

- Effort: willingness to pay out power in carrying out the mission

- Persistence: perseverance facing difficulty

Previous measurement is coherent to Bandura's statement that self-efficacy expectations controls individual's early decision to start a behaviour, pay out power, and persist to carry on regardless difficulties (Bandura, 1986). Individual's differences in motivation, attitudes, learning, and task execution can be explained significantly through GSE (e.g., Chen, Gully, Whiteman, & Kilcullen, 2000; Judge, Locke, & Durham, 1997).

Gibbons and Weingart (2001) and Siu et al. (2007) also discriminated task related and general self efficacy since self-efficacy varies collectively across tasks and performance areas and in constancy over time and circumstances. Highest level of aggregation entails general self-efficacy explained as

"one's belief in one's overall competence to effect requisite performances across a wide variety of achievement situations" (Eden, 2001, p. 73). While at the lowest level, one's capability to successfully finish a certain task in particular circumstances is referred to as self-efficacy. In short, the level of aggregation positively influences the stability of self-efficacy.

Individuals differ in motivation and affect according to trait and state differences. Kanfer and Heggestad (1997) and Chen et al. (2000) distinguished these variations and clearly outlined associations between different kinds of personality's differences and performance.
State-individual differences are flexible and restricted to particular tasks; on the other hand, Trait-individual differences are not limited to a particular task or circumstances and are relatively steady over time as personality and cognitive ability.

Specific-task self-efficacy (SSE) is a motivational state and general self-efficacy (GSE) is a motivational trait (Eden, 1988, in press; Gardener & Pierce, 1998; Chen et al., 2001). Same past experiences (actual experience, vicarious, verbal persuasion, psychological states) affect both GSE and SSE. Nevertheless, Eden (1988) points up the fact that GSE is much more resilient to short-lived experiences than is SSE.
Accumulative successes and failures through individual's life time are most responsible for shaping his/her GSE (Shelton 1990).

Individual's differences in motivation, attitudes, learning, and task performance can be explained significantly through GSE. For instance, it was found through Judge and Bono's (2001) meta-analysis that GSE and self-esteem are positively related to task performance. Generally, GSE summarizes individuals' over all lasting tendencies to consider oneself as capable or incapable of successfully accomplishing task demands in various situations. As stated by Eden (1988); Chen et al. (2001); Shelton (1990); and Sherer et al.(1982) GSE positively impacts SSE across tasks and situations (i.e., GSE) "Spill over" into particular situations as observed through the relationship between and SSE in a variety of tasks. Consequently, individuals with higher GSE perform better through varying tasks and situations.

In e-commerce as a context, individuals with higher GSE are those who: Express higher motivation to accomplish new tasks; Hard working and seek achievement; and Expected to encounter less risk in e-commerce. Based on these factors, individuals capable of purchasing exactly the item that they want from Web vendors, are more likely to trust a web vendor and make purchases in the future (Kim& Kim, 2005;Chen et al., 2000). Consequently, it can be hypothesized that:

H4: There is a positive relationship between General Self-efficacy and the E-Commerce Self-efficacy. GSE will positively influence the E-commerce Self-efficacy.

2.5 E-commerce Self-efficacy (ESE)

Self-efficacy is described as individual's belief that he/she has the needed abilities and skills to successfully perform a particular task. In 1986 Bandura presented the term Specific Self-Efficacy (SSE) which refers to "one's belief in capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands". SSE relates to one's confidence in being able to accomplish specific performance levels (Wood & Bandura, 1989, p. 408).

Stajkovic and Luthans (1998) distinguished between GSE and SSE by explaining how SSE is characterized as "a dynamic, multifaceted belief system that operates selectively across different activity domains and under different situational demands, rather than being a decontextualized conglomerate". Conversely, and according to Bandura (1997b, P.42) GSE is "not tied to specific situations or behaviour" but takes a broader view to a "variety of situations" (Sherer et al., 1982, p. 664).

Consistent with SSE definition we will describe e-commerce self-efficacy as a one's judgment of being capable to successfully use and perform transactions through Electronic-commerce system. Experimental researches through the past 10 years revealed the effect of self-efficacy on individuals' decision to use information systems. Hill, Smith, and Mann (1987), for example have confirmed the relation between self-efficacy and some work-performance measures (e.g. adaptability to use computer and information systems).

Durndell and Haag (2002) used statistics from UK which revealed the fact that only 17% of registered computing students at University are females. Moreover, this observation was also noticed in the US were more males than females tend to study computing with increased indications that the proportion of females is actually decreasing (Durndell & Haag, 2002; Balka & Smith, 2000; Holdstock, 1998). Therefore, the truth that gender influences one's choice to study computing is also found in school choices both in the UK (Roger & Duffield, 2000) and in the US (Farenga & Joyce, 1999). The phenomenon is now quite clear and it needs to be investigated especially with the extensive spreading of the internet which added a new dimension to the issue (Gackenbach, 1998).General researches in computer domain has also indicated higher levels of self-efficacy and confidence for males.

Bandura (1986) has demonstrated how special self-efficacy can be used to predict task performance outcomes mainly because the outcomes to be measured have been clearly identified. So in conclusion, we need to obtain specificity that is applied to specific performance situation in order to use SSE in predicting outcomes (Bandura, 1986, 1997; Marakas et al., 1998; Yi and Hwang, 2003). Self-efficacy judgments are perceived to shape outcome expectations since the outcome one presumes are obtained mainly from the belief of how well one can perform

the specified task (Bandura, 1997,Compeau & Higgins, 1995b). Compeau & Higgins (1995) found that computer self-efficacy also influenced expectations about the future outcomes of computer use such as job performance and personal accomplishment.

In terms of e-commerce particularly, research has generally supported positive relations between efficacy, a range of performance measures and outcome expectations (Gist & Mitchell, 1992; Stajkovic & Luthans, 1998, Schwoerer et al., 2005). Outcome expectations are estimates that a behaviour will produce particular outcomes (Oliver & Shapiro, 1993; Eastin & LaRose, 2000) but it highly depends on how well the individual believes he/she can perform the task; therefore, Self-efficacy judgments are consecutively related to outcome expectations (Bandura, 1977). Oliver and Shapiro (1993) observed that the stronger a person's self-efficacy beliefs, the more likely he/she will aim to successfully accomplish the desired outcome.

Nowadays and in the context of e-commerce these observations mean that there should be a positive connection between self-efficacy and the expectation of positive outcomes of E-commerce use. These outcomes [3] as mentioned before can be reduced costs, more saved time, better quality, and the ability to consult and discuss products with consumers around the world. All these expectations will

increase positively with consumer's belief of being capable of using this system to purchase items. Thus, it can be hypothesized that:

H5-a: There is a positive relationship between E-commerce self-efficacy and end-user's outcome expectancy. E-commerce self-efficacy will positively influence the end-user's outcome expectancy.

Differences that individuals have in tendencies to experience different emotions can be an important factor in shaping cognitive processes linked with decision-making (Lerner & Keltner, 2000). Emotions operate as the most important type of information, indicating the existence of specific intimidations to be avoided or rewards to be acquired (Schwarz & Clore, 1983; Shackelford, LeBlanc, & Drass, 2000). Cognitive responses, in turn, are promoted by emotions which facilitates the evasion of danger and the acquirement of rewards (Maner et al., 2005). Relating to decision making, some emotions - like anger - encourage decision-making biases that increase one's acceptance for risk, whereas other emotions - like disgust - encourage the decision-making processes associated with risk-avoidance (Fessler, Pillsworth, & Flamson, 2004).

People described as low self-efficacious are less certain of their ability to perform the transactions of buying, selling or returning items online impeccably. So, if any of their online merchandises did not turn out satisfactorily, they will be most probably

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[3] To our knowledge, there are no studies in e-commerce systems that have incorporated the affect of consumer's-commerce self-efficacy into the consumer's outcome expectation

unable to take care of this problem by returning the purchased item and they will refrain from contacting web vendors to buy products. On the other hand, highly-efficacious people are willing to perform transactions with almost any web vendor without hesitation and be able to take care of any defected items themselves by directly returning them (Kim & Kim, 2004). The higher customers' self-efficacy have while dealing with an e-commerce portal, the more positive outcome expectation they are will probably have and the better they will trust the vendor. This study expands the term of e-commerce self-efficacy to a situation-specific self-efficacy.

The extent to which one believes in his overall proficiency to accomplish a successful task across a wide variety of achievement situations influences his special self-efficacy in the domain on e-commerce[6].

Therefore, it can be hypothesized that:

H5-b: There is a negative relationship between E-commerce self-efficacy and customer's risk aversion. E-commerce self-efficacy will negatively influence the customer's risk aversion.

H5-c: There is a positive relationship between E-commerce self-efficacy and customer's trust. E-commerce self-efficacy will positively influence the customer's trust.

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[6] To our knowledge, there are no study in e-commerce systems that incorporated the affect of consumer's e-commerce self-efficacy into the consumer's Risk Aversion.

As said by Bandura (1997), self-efficacy refers to one's belief in his/her ability to perform a task successfully and here in e-commerce it is suggested that self-efficacy plays a significant role in determining behavioural intention (Taylor and Todd, 1995).

Self-efficacy perceptions were characterized by Hsu & Chiu (2003) as a significant predictor and precursor to computer technology use; this hypothesis is maintained by researching the utilization of computers. The relationship between technology self-efficacy, the choice to use technology and adoption was confirmed by numerous studies. A new variable was presented by (Compeau & Higgins, 1995; 1999; Davis et al., 1989; Hill et al., 1987; Igbaria & Iivari, 1995, Burkhardt & Brass, 1990, and Maish, 1979) which is the user's feeling of "being prepared". This variable is considered similar to the concept "self-efficacy" and also found to be related to the degree of use. Internet self-efficacy was positively related to Internet usage in the context of Digital Divide (Eastin and LaRose, 2000).

Special self-efficacy was suggested to being considered a new variable in the adoption process. "consumers with high self-efficacy are more active, attempt to proactively manage situations, and more likely to initiate innovative decisions, as opposed to those with low self-efficacy who avoid difficult tasks and are passive" (Tabak and Barr 1999, P.252). In 1987, Hill et al observed that the decision to use technology is considerably related to self-efficacy.

Compeau and Higgins (1995b; 1999) as well revealed a direct positive connection between computer self-efficacy and computer usage. This positive relationship between web-specific self-efficacy and electronic services utilization was also noted by (Hsu and Chiu, 2003; Burkhart & Brass, 1990; Compeau & Higgins, 1995; Compeau & Higgins, 1999; Oliver & Shapiro, 1993). In the context of e-commerce self-efficacy is also supposed to be directly related to the usage of e-commerce since customers are more likely to attempt and continue this behaviour as long as they feel capable of successfully performing needed tasks. Therefore, the following hypothesis is proposed:

H5-d: There is a positive relationship between E-commerce self-efficacy and usage of E-commerce system. E-commerce self-efficacy will positively influence the usage of E-commerce system.

2.6 Outcome Expectation

Bandura, (1986) in his social cognitive theory stated that "Individuals are more likely to engage in behaviours that they expect will be rewarded." It is important to understand that Self-efficacy and outcome judgments are two separate concepts according to Bandura as he states in a research published in 1982 : "In any given instance, behavior would be best predicted by considering both self-efficacy and outcome beliefs" (Bandura, 1982, P. 140). Studies directly concerned with measuring outcome expectancy in the IT literature are limited in number. In 1989 researchers Davis, Bagozzi, and Warshaw conducted a study on MBA

students where they detected a development of behavioural intentions about using a word processing program derived from expectations that it would enhance their performance in the program. Previously, Hill, Smith and Mann (1987) demonstrated that individual's choice to gain knowledge of a programming language was highly influenced by outcome expectations.

In the area of computing technology specifically, individual's intentions are significantly shaped by outcome expectations (Compeau and Higgins 1995b) since outcome expectations are a key originator to usage behaviour. Both Bandura's research on aggressive behaviour in children (1971) and IS researches by Davis et al. 1989, Hill et al. 1987, Pavri, 1988, and Thompson, et al. (1991) provide a positive support for the debate on outcome expectations. This study will be the first to offer a comprehensive exploration to the relationship between e-commerce utilization and outcome expectations.

Outcome expectations are demonstrated in the E-commerce context[7] clearly through the increased utilization of this technology by consumers who expect a higher quality, lower prices, extended availability (24/7), and a wider variety of products while shopping online. The extra value individuals expect out of simple tasks they are capable of performing will create a major motivating

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[7] To our knowledge, there are no studies in e-commerce systems that have incorporated the affect of consumer's outcome expectation into the e-commerce usage.

factor for them to use the system. Therefore, we hypothesis that:

H6: There is a positive relationship between customer's outcome expectations and usage of E-commerce system. Customer's outcome expectations will positively influence the usage of E-commerce system.

However, Self-efficacy is often confused with outcome expectations when, in fact, they are two different constructs. An outcome expectation is thus a belief about the consequences of behavior. On the other hand an efficacy belief is a belief concerning to performance of a behavior (Bandura, 1977, 1997; Hackett & Betz, 1981; Caprara & Cervone, 2000).

Figure 1: Distinction between Outcome Expectations and Self-Efficacy Perception
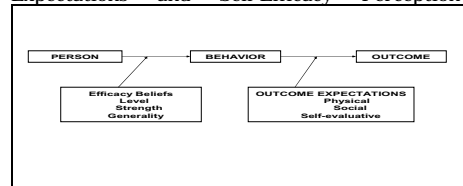
Source: Bandura (1997)

Efficacy belief and outcome expectation are two different things because many people happen to believe that a certain action will lead to well known outcomes yet not have enough confidence in their ability of carrying out the required activity. The stronger one's belief in his effectiveness the higher it is possible that a coping attempt will take place. People's tendency to avoid situations believing that they go beyond their coping skills gets higher while they can easily handle threatening situations if they

perform confidently and consider themselves capable of being involved in such activities (Bandura, 1988).

2.7 Risk Aversion

Risk is defined as "a situation where the future outcome is unknown but a probability can be placed on each possible outcome" (Byrne 2005, P. 22). This definition of risk is one out of several explanations provided by researchers to precisely identify the concept of risk. In 1960, the community of marketing encountered the concept of risk for the first time when Raymond Bauer argued that consumer behaviour is risk-taking behaviour since a consumer's actions can create some unanticipated results, some of which may be unpleasant (Moore, 2004). Perceived risk is based on two elements: a cognitive and an affective component as maintained by Dowling and Staelin (1994) constructed the most common definition of risk in marketing literature as "the consumers' perception of uncertainty and adverse consequences of buying a product or service" (p. 119).

Miyazaki and Fernandez (2001) suggested that perceived risk is related negatively with the degree to which individuals contact web vendors to purchase items. The definition of Risk aversion is cited by Bao et al. (2003) as "the extent to which people feel threatened by ambiguous, and have created beliefs and institutions that try to avoid these" (Hofsted & Bond, 1984, p.419). People who feel more threatened by risky and confusing situations are those with higher risk aversion (Hofstede, 1991); therefore, researchers conceived the effect risk aversion can

strongly have on consumer's decisions and behaviour (Shimp & Bearden, 1982). As clearly observed in consumption habits, individuals with low risk aversion feel more enthusiastic about obtaining new products or advanced technologies while in contrast, those with high risk aversion feel more reluctant to buy such items as the performance of these products is more unclear and ambiguous than the one of products and labels they already recognize (Steenkamp, et al., 1999). Thus, we can hypothesis that:

H7: There is a negative relationship between customer's risk aversion and usage of E-commerce system. Customer's risk aversion will negatively influence the usage of E-commerce system.

2.8 Customer Trust

O'Donnell defines consumer's trust as the consumer's belief that the vendor, i.e., a firm or Website, will accomplish the transaction as the consumer expects (2002). The 21st century has witnessed a huge growth in the number of electronic transactions due to the increased trust in Technology which promotes its utilization, acceptance, and adoption by users (Sukar, 2005). The concept of customer trust is becoming more important equally to both experts and academics (Lippert, 2001b; 2001c; 2001d). The concept of technology trust attempts to measure the user's trust in the inanimate IS technologies: hardware and software, operating on daily basis (Lippert, 2001a; 2002).

Surprisingly, Heijden et al. (2001) did not observe any explicit relation between consumer's trust in store and their behaviour towards online purchasing. These explanations provided by Heijden contradicts a previous study conducted by Jwenpaa et al. in 1999. However, Heijden et al. (2001) warn that their study excluded substandard web sites and they suggest that a deeper analysis and understanding to the matter can be accomplished by diverging the levels of quality covered through the study (O'Donnell, 2002). In two separate studies both Gefen (2000); Kim and Kim (2005) demonstrated how purchase intentions are being significantly shaped by consumer's trust in web-vendors. As an example, they showed how consumers' low trust in web-vendors makes them less willing to get engaged in e-commerce transactions. Panichpathom (2000) has also confirmed the existence of an association between risk and trust, therefore, we hypothesis that:

H8: There is a positive relationship between customer's system trust and usage of E-commerce system. Customer's system trust will positively influence the usage of E-commerce system.

3. Empirical Studies: Self-Efficacy and Advanced Technology

Compeau and Higgins (1995) described computer self-efficacy as "a judgment of one's capability to use a computer" (p.192). Generally, the study highlights the significant influence self-efficacy has on individual's self-perceptions when using computers. Supporting data and

observations were presented in the study as the researchers noted that individuals with high self-efficacy suffered less computer-anxiety, used computers more and took pleasure in using them more. Gist et al. (1989) carried out earlier studies on computer self-efficacy which gave evidence that business managers enjoying higher computer self-efficacy beliefs performed considerably better than those with low computer self-efficacy results. Additionally, these findings were supported in a wide range of other contexts including computers. Self-efficacy comes into view as a major factor that distinguished adopters and non-adopters of complex technologies (Faseyitan et al., 1996) which id directly connected to the utilization of advanced technologies. (Hill et al., 1987; Kinzie et al., 1994; Landino & Owens, 1988; Zhang & Espinoza, 1998). In a research that involved employees of a federal agency an explicit connection was recognized between self-efficacy and technological innovations (Burkhardt and Brass 1990). Nevertheless, computer self-efficacy is not absolute since it differs within the computer framework as each individual attempts to achieve specific tasks. It is influenced by factors like: The software and hardware configurations users must cope with; the nature of the task required (Compeau & Higgins, 1995).

Another important issue is shopping online which is highlighted as one of the most rapidly rising types of purchasing (Limayem et al., 2000; Levy and Weitz, 2001; Shim et al., 2001; Grunert and Ramus, 2005). Mainly, purchases transactions can be facilitated among all involved groups: consumers, businesses, and between businesses and consumers. Yet undoubtedly the largest most profitable domain of application has been in the business-to-business sector. In the business-to-consumer domain, business growth has been more directed to specific narrow areas (Butler and Peppard, 1998). Many of the business-to-consumer now run with a shortfall and many had to go out of business. There have been very few considerable achievements regarding the sale of food and other daily use products on the internet. Despite the great number of users in both US and Europe frequently using the internet for shopping purposes, the reasons that encourage these people to shop online are still ambiguous (Monsuwe et al., 2004). However, self-efficacy was taken into account by many researchers to be a critical influence on individual's decisions especially those concerning technological innovations (Davis et al., 1989).

In studies performed by Hill et al (1985 a & b) to evaluate consumers' responses to word processors and personal computers, self-efficacy was found to be enormously associated with liking and choosing to use such products.
Self-efficacy has been proven to be a strong predictor of behavior (Maddux et al., 1986), besides attitudes (Maddux and Rogers, 1983; Seltzer, 1983) in many different situations where one's own performance capability in specific settings can be forecasted through judgments of self-efficacy. Individuals with low self-efficacy tend to choose alternatives that can be handled or managed easier

rather than best ones (Seltzer, 1983). These feelings of incompetence or discomfort which may arise from the expected change that individual feel less capable of managing leads to refusal of this change. Perceived efficacy influences the extent of effort, the perseverance and the level of learning taking place if the individual is willing to make an effort (Bandura, 1977).

4. The Theoretical Framework Model of E-Commerce and Self-Efficacy

The framework developed in this study based on the social cognitive theory which was developed and founded by Bandura (1986) and it combines the work of models such as Compeau (1999) who focused mainly on the self-efficacy and outcome expectation issues. Part of the model was based as well on Kim & Kim (2005) (Self-Efficacy Model), they focused mainly on the impact of self efficacy via trust on e-commerce. However, the novel of this study is that, we develop the existing model by incorporating other important factors such as personnel innovation in information systems, e-commerce trait anxiety, Risk aversion and others which may affect intention to use computer via e-commerce self-efficacy and risk aversion. Researches have applied the Social Cognitive Theory, the self-efficacy construct particularly, in many empirical research fields like health, education, science, and for the first time on computers in 1989; however, no study has verified an existing relation between Social Cognitive Theory and the utilization of e-commerce up till now. Only one study by Kim and Kim (2005) has partially discussed the effect

Social Cognitive Theory has on online shopping by examining self-efficacy's impact but that research suffered many limitations which this study attempts to cover. Earlier before, self-efficacy was also presented as a construct inside the online shopping adoption model built by Chan (2001) which examines the connection between cultures of the United States and Korea on the utilization of online vendors.

Hence, this study attempts to present a first comprehensive research explaining the Influence of cognitive factors (Social Cognitive Theory) on the adoption and the usage of e-commerce systems as there is no definite model for Social Cognitive theory built previously. Additionally, this study will introduce new terms (such as E-commerce Self-Efficacy, E-commerce Anxiety and Personal Innovation in Information systems) that weren't used before. These terms were built in view of the literature resulting of studies in related fields like Information Technology, Information Systems and another specific software researches. Constructs belonging to Social Cognitive Theory were also used in our model (such as General Self-Efficacy, E-commerce Self-Efficacy, Trait Anxiety, E-commerce Anxiety) in addition to extra two constructs that are originally used in IS (System ease of use and system experience). In this model we also empower the research in the Marketing Information Systems area from where two constructs were taken (Risk aversion and consumer Trust). The model is presented in Figure 2.

Figure 2: E-Commerce Self-Efficacy Theoretical Model
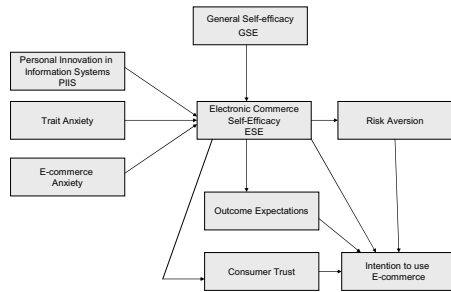
4.1 Construct Definitions

The research model has ten construct, the definitions for these construct has been summarized in Table 1.

Table 1 Construct Definitions

Construct	Definition
GeneraSelf-efficacy (GSE)	Individual's acuity of their ability to achieve across a variety of different situations.
E-commerce Self-efficacy (ESE)	A judgment of one's capability to use and buy through Electronic commerce system.
Outcome Expectation	The expected consequences of behavior when using the E-commerce system
Risk aversion	In decision making risk aversion is the tendency to avoid options associated with uncertain outcomes that differ in their desirability (Baron, 1994)
Customer Trust	A user's confident belief in the company's E-commerce system (Macintosh and Lockshin, 1997; Tax, et al., 1998).
Trait Anxiety	The general feeling of fear when confronted with problems or challenges (Thatcher & Perrewe, 2002)
E-Commerce system Anxiety	Fear of E-commerce system use or learning to use this technology, reasons for fear (e.g. press the wrong key or fear of other possible mistakes).
Personal Innovativeness in Information Systems (PIIS)	The willingness of an individual to try out any new information system.

5. Summary and Future Studies

This paper developed a theoretical framework based on the combinations of Bandura (1977); Compeau et al. model (1999) and Kim and Kim model (2005) to investigate the impact of cognitive social factors on the intention to use e-commerce. We tried to identify new factors such as personnel innovation in information systems (PIIS), trait anxiety, e-commerce anxiety, e-commerce self-efficacy which have not been used yet (in this combined format) in the area of e-commerce. Earlier studies have covered some of the issues and have mainly applied them in the area of computer technology. Therefore, we have identified as well several new hypotheses throughout this paper. A complete research model derived from social cognitive theory which contains constructs such as general self-efficacy, e-commerce self-efficacy, outcome expectation, consumer trust and other constructs that were taken from information and computer systems were included into the developed model. The model includes as well the concept of risk aversion which is originated from the marketing research area as we believe it is very important to consider individuals' Anxiety of new Technology and its affect on customer risk aversion. Thus, the model developed can further enhance the research in the area of e-commerce and can be applied in different areas of e-commerce. Future studies will be employed in testing the model via using exploratory survey analysis to fill the gap in the literature on the application of social cognitive theory in the area of e-commerce.

References

Agarwal, R. and J. Prasad (1999). "Are individual differences germane to the acceptance of new information techn..." Decision Sciences 30(2).

Anderson, A. A. (1995). "Predictors of Computer Anxiety and Performance in Information Systems." Computers in Human Behavior 12(1).

Balka, E. and R. Smith (2000). Women work and computerization. Boston:Kluwer

Bandura, A. (1971). Social Learning Theory. . New York: General Learning Press.

Bandura, A. (1977). "Self-efficacy: toward a unifying theory of behaviour change." Psychological Review 84(2).

Bandura, A. (1986). Social foundations of thought and action : a social cognitive theory. Englewood Cliffs, N.J., Prentice-Hall.

Bandura, A. (1987). Perceived self-efficacy: Exercise of control through self belief. Controversial issues in behavior modification. J. P. Dauwalder, M. Perrez and V. Hobi, Berwyn, PA: Swets & Zeitlinger.: 27-60.

Bandura, A. (1989). "Perceived self-efficacy in the exercise of personal agency." The Psychologist: Bulletin of the British Psychological Society 2: 411–424.

Bandura, A., Ed. (1995). Self-efficacy in changing societies New York: Cambridge University Press.

Bandura, A. (1997b). Self-efficacy : the exercise of control. New York, W.H. Freeman.

Bao, Y., K. Z. Zhou, et al. (2003). "Face Consciousness and Risk Aversion: Do They Affect Consumer Decision-Making?" Psychology & Marketing 20(8).

Barlow, D. H. (1988). Anxiety and its disorders: The nature and treatment of anxiety and panic. NY: Guilford Press.

Bozionelos, N. (2001). "Computer anxiety: relationship with computer experience and prevalence." Computers in Human Behavior 17: 213-224.

Burkhardt, M. E., and Brass, D. J. (1990). "Changing Patterns or Patterns of Change: The Effects of Change in Technology on Social Network Structure and Power." Administrative Science Quarterly 35: 104-127.

Butler, G. and A. Mathews (1987). "Anticipatory anxiety and risk perception." Cognitive Therapy and Research 11: 551–565.

Butler, P. and J. Peppard (1998). "Consumer purchasing on the internet: processes and prospects." European Management Journal 16(5).

Byrne, K. (2005). "How do consumers evaluate risk in financial products?" Journal of Financial Services Marketing; 10 (1).

Caprara, G. V. and D. Cervone (2000). Personality: Determinants, Dynamics, and Potentials Cambridge University Press.

Chan, H. (2001). E-commerce : fundamentals and applications. New York ; Chichester, Wiley.

Chen, G., S. M. Gully, et al. (2001). "Validation of a New General Self-Efficacy Scale " Organizational Research Methods 4(1).

Chen, G., S. M. Gully, et al. (2000). "Examination of relationships among trait-like individual differences, state-like individual differences, and learning performances." Journal of Applied Psychology 85.

Chiam, M. (2006). Willingness to buy from internet web sites – A suggested Model University of Western Australia Doctor of Philosophy

Christianson, S. (1992). "Emotional stress and eyewitness memory: A critical review." Psychological Bulletin 112: 284-309.

Compeau, D. R. and C. A. Higgins (1995). "Application of social Cognitive Theory to training for computer Skills." Information Systems Research 6(2).

Compeau, D. R. and C. A. Higgins (1995b). " Computer Self-Efficacy: Development of a Measure and Initial Test." MIS Quarterly 19: 189-211.

Dambrot, F. H., M. A. Watkins-Malek, et al. (1985). "Correlates of sex differences in attitudes toward and involvement with computers." Journal of Vocational Behaviour 27: 71–86.

Davis, F. D., R. P. Bagozzi, et al. (1989). "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models." Management Science 35: 982-1003.

Dowling, G. S., R. (1994). "A Model of Perceived Risk and Intended Risk-Handling Activity." Journal of Consumer Research 21: 119-134.

Durndell, A. and Z.Haag (2002). "Computer self efficacy, computer anxiety, attitudes towards the Internet and reported experience with the Internet, by gender, in an East European sample " Computers in Human Behavior 18(5).

Eastin, M. A. and R. L. LaRose (2000). "Internet self-efficacy and the psychology of the digital divide." Journal of Computer Mediated Communication 6(1).

Eden, D. (1988). "Pygmalion, Goal Setting, and Expectancy: Compatible Ways to Raise Productivity." Academy of Management Review 13(4).

Eden, D. (2001). Means efficacy: External sources of general and specific efficacy. Work motivation in the context of a globalizing economy. M. Erez and U. Kleinbeck, Mahwah, NJ: Lawrence Erlbaum: 73-85.

Eysenck, M. W. (1982). Attention and arousal: Cognition and Performance. , Springer-Verlag, Berlin.

Farenga, S. and J. B (1999). " Intentions of young students to enroll in science courses in the future: an examination of gender differences. ." Science Education 83(1).

Fessler, D., M, E. J. Pillsworth, et al. (2004). "Angry men and disgusted women: An evolutionary approach to

the influence of emotion on risk-taking." Organizational Behavior and Human Decision Processes 95: 107-123.

Gackenbach, J. (1998). Psychology and the Internet: intrapersonal and transpersonal implications. , New York: Academic Press.

Gardner, D. G. and J. L. Pierce (1998). "Self-esteem and self-efficacy within the organizational context." Group and Organizational Management 23: 48-70.

Gefen, D. (2000). "E-commerce: the role of familiarity and trust." International Journal of Management Science 28: 725-37.

Gibsons, D. E. and L. R. Weingart (2001). "Can I do it? Will I try? Personal efficacy, assigned goals, and performance norms as motivators of individual performance." Journal of Applied Social Psychology 31: 624–648.

Gist, M. E. and T. R. Mitchell (1992). "Self-Efficacy: A Theoretical Analysis of Its Determinants and Malleability." Academy of Management. The Academy of Management Review 17(2): 183.

Gist, M. E., C. E. Schwoerer, et al. (1989). "Effects of alternative training methods on self-efficacy and performance in computer software training." Journal of Applied Psychology 74: 884-891.

Grunert, K. G. and K. Ramus (2005). "Consumers' willingness to buy food through the internet." British Food Journal 107(6).

Hackett, G. and N. Betz (1981). "A self-efficacy approach to the career development of women" Journal of Vocational Behavior 18: 326-339.

Heijden, v. d., V. H., et al. (2001). Predicting online purchase behavior: replications and tests of competing models 34th Hawaii International Conference on System Sciences, IEEE, Hawaii.

Hill, T., N. D. Smith, et al. (1987). "Role of efficacy expectations in predicting the decision to use advanced technologies: the case of computers." Journal of Applied Psychology 72(2).

Hofstede, G. (1991). Cultures and Organisations: Software of the Mind, McGraw-Hill, London.

Hofstede, G. and M. Bond (1984). "Hofstede's culture dimensions: an independent validation using Rokeach's value survey " Journal of Cross-cultural Psychology 15(4).

Holdstock, L. (1998). The ratio of male to female undergraduates. Gender and Choice in Education and Occupation. J. Radford. London : Routledge.

Howard, G. S., C. M. Murphy, et al. (1986). Computer anxiety considerations for the design of introductory computer courses. Proceedings' of the 1986 Annual Meeting of the Decision Sciences Institute, Atlanta, GA: Decision Sciences Institute.

Hurt, T. H., K. Joseph, et al. (1977). "Scales for the measurement of innovativeness." Human Communication Research 4(1).

Igbaria M, P. F, et al. (1989). "Microcomputer application: An empirical look at usage 16, 187-196." Inform. Mgmt 16: 187-196.

Igbaria, M. and J. Iivari (1995). "The Effects of Self-Efficacy on Computer Usage" Omega 23(6).

Judge, A. T., A. E. Locke, et al. (1997). "The dispositional causes of job satisfaction: a core evaluations approach." Research in Organizational Behavior 19: 151-188.

Judge, T. A., A. Erez, et al. (1998a). "The power of being positive: The relation between positive self-concept and job performance." Human Performance 11: 167-187.

Kanfer, R. and E.D. Heggestad (1997). "Motivational traits and skills: A person centered approach to work motivation." Research in Organizational Behavior 19: 1-56.

Kim, Y. H. and D. J. Kim (2005). A Study of Online Transaction Self-Efficacy, Consumer Trust, and Uncertainty Reduction in Electronic Commerce Transaction. Proceedings of the 38th Hawaii International Conference on System Sciences, IEEE.

Kinzie, M. B., M. A. B. Delcourt, et al. (1994). " Computer technologies: attitudes and self-efficacy across undergraduate disciplines." Research in Higher Education 35(6).

Landino, R. A. (1988). "Self-efficacy in university faculty." Journal of Vocational Behavior 33: 1-14.
Lee, C.-S. (2001). "An analytical framework for evaluating e-commerce business models and strategies. Internet research." Electronic Networking Applications and Policy 11(4).

Lerner, J. S., & Keltner, D. (2001). " Fear, anger, and risk." Journal of Personality and Social Psychology 81: 146–159.

Lerner, J. S. and D. Keltner (2000). "Beyond valence: Toward a model of emotion specific influences on judgment and choice." Cognition and Emotion 14: 473–493.

Levy, M. and B. Weitz (2001). Retailing Management. New York, NY, McGraw-Hill.

Limayem, M., M. Khalifa, et al. (2000). "What makes consumers buy from the internet? A longitudinal study of online shopping." Systems and Humans 30(4).

Lippert, S. K. (2001b). Trust in Information Systems Technology: Implications for Academia. Proceedings of the Seventeenth Annual Research Forum. Washington Consortium of Business Schools. Washington, DC.

Lippert, S. K. (2001c). Trust in Information Systems Technology: A Fundamental Metric In Systems Development and Usage, . Washington Metropolitan Best Practices Forum. April 26, 2001,Washington, DC.

Lippert, S. K. (2001d). Why Trust in Information Systems Technology? Does it Matter For IT Professionals? Invited Guest Lecturer,Management and Organization Seminar. April 23, 2001,Washington, DC., George Washington University.

Lippert, S. K. (2002). Contributing to a Unified Model of Technology Trust: Understanding Trust in Information Systems Technology. " , May 2-4, 2002, . Forthcoming at the 2002 Academy of Business and Information Technology Meeting. Pittsburgh, PA.

Loewenstein, G. F., E. U. Weber, et al. (2001). "Risk as feelings. ." Psychological Bulletin 127: 267-286.

MacGregor, R. and L. Vrazalic (2004). Electronic Commerce Adoption in Small to Medium Enterprises (SMEs)

Maddux, J. E. and R. W. Rogers (1983). "Protection Motivation and Self-Efficacy: A Revised Theory of Fear Appeals and Attitude Change." Journal of Experimental Social Psychology 19: 469-479.

Maner, J. K., D. T. Kenrick, et al. (2005). "Functional projection: How fundamental social motives can bias interpersonal perception." Journal of Personality and Social Psychology 88: 63-78.

Maner, J. K., J. A. Richey, et al. (2007). "Dispositional anxiety and risk-avoidant decision-making." Personality and Individual Differences 42: 665-675.

Marakas, G. M., M. Y. Yi, et al. (1998). " The Multilevel and Multifaceted Character of Computer Self-Efficacy: Toward Clarification of the Construct and an Integrative Framework for research   " Information Systems Research 9(2).

Maurer, M., & Simonson, M. (1984). Development and validation of a measure of computer anxiety. Association for Educational Communication and Technology. Iowa State University, Ames, Iowa: 318–330.

Monsuwe, T., B. Dellaert, et al. (2004). "What drives consumers to shop online? A literature review." International Journal of Service Industry Management 15(1).

Moore, S. S. (2004). Perceived Performance Risk and its Influence on Abandoned Cart Syndrome (ACS) An Exploratory Study, Queensland University of Technology. Master.

Murata, T., T. Takahashia, et al. (2004). "Individual Trait Anxiety Levels Characterizing the Properties of Zen Meditation." Neuropsychobiology 50: 189-194.

O'Donnell, J. B. (2002). Assessment of the impact of web site design on consumer trust and purchase decision, University of New York. phd.

Oliver, T. A. and F. Shapiro (1993). "Self-efficacy and computers. ." Journal of Computer-Based Interactions 20: 81-85.

Panichpathom, S. (2000). An Examination of the Willingness to Engage in Web-Based Purchase: The Impact of an Individual Buyer's Trust of Sensitive Information Exchange, University of Texas at Arlington. Doctoral dissertation.

Pavri, F. (1988). An empirical investigation of the factors contributing to micro-computer usage, University of Western Ontario. Dissertation.

Roger, A. and J. Duffield (2000). " Factors underlying persistent gendered option choices in school science and technology in Scotland. ." Gender and Education 12(3).

Rosen, L. D. and P. Maguire (1990). "Myths and realities of computer phobia: A meta-analysis." Anxiety Research 3: 175-191.

Schwarz, N. and G. L. Clore (1983). "Mood, misattribution, and judgments of well-being, Informative and directive functions of affective states." Journal of Personality and Social Psychology 45: 513-523.

Schwoerer, C. E., Douglas R. May, et al. (2005). "General and Specific Self-Efficacy in the Context of a Training Intervention to Enhance Performance Expectancy." Human Resource Development Quarterly 16(1).

Seltzer, L. F. (1983). "Influencing the 'Shape' of Resistance: An Experi- mental Exploration of Paradoxical Directives and Psychological Reactance." Basic and Applied Social Psychology 4(1).

Shackelford, T. K., G. L. LeBlanc, et al. (2000). "Emotional reactions to infidelity." Cognition and Emotion 14: 643-659.

Shelton, S. H. (1990). "Developing the construct of general self-efficacy." Psychological Reports 66: 987-994. Sherer, M., J. E. Maddux, et al. (1982). "The Self-Efficacy Scale: Construction and Validation." Psychological Reports 5(1).

Sheth, J. N., A. Eshghi, et al. (2001). Internet Marketing Harcourt College.

Shim, S., M. A. Eastlick, et al. (2001). "An online pre-purchase intention model: the role of intention to search." Journal of Retailing 77(3).

Shimp, T. A. and W. O. Bearden (1982). "Warranty and other extrinsic effects on consumers' risk perceptions." Journal of Consumer Research 9: 38-46.

Siu, O.-l., C.-q. Lu, et al. (2007). "Employees' Well-being in Greater China: The Direct and Moderating Effects of General Self-efficacy." Applied Psychology An International Review 56(2).

Spielberger, C. D. (1966). Anxiety and behavior Theory and research on anxiety. In C. D. Spielberger (Ed.).

Spielberger, C. D., C. D. Edwards, et al. (1973). Preliminary test manual for The State-Trait Anxiety Inventory for Children. . Palo Alto: Consulting Psychologists Press

Spielberger, C. D., R. L. Gorsuch, et al. (1983). "Manual for the state-Trait AnxietyInventory " Palo Alto: Consulting Psychologist Press.

Spielberger, C. D., R. L. Gorsuch, et al. (1970). Manual for the State-Trait Anxiety Inventory. Palo Alto: Consulting Psychologists Press.

Stajkovic, A. D. and F. Luthans (1998). " Self-efficacy and work-related performance: A metaanalysis." Psychological Bulletin 124: 240-261.

Steenkamp, J. B. E. M., F. t. Hofstede, et al. (1999). "A cross-national investigation into the individual and national–cultural antecedents of consumer innovativeness." Journal of Marketing 63(2).

Suri, R. and K. B. Monroe (2001). "The effects of need for cognition and trait anxiety on price acceptability." Psychology & Marketing 18(1).

Tellegen, O. A. (1985). Structures of mood and personality and their relevance to assessing anxiety with an emphasis on self-report. Anxiety and the anxiety disorders. A. H. Tuma and J. D. Maser, Lawrence Erlbaum Associates Inc, Hillsdale, NJ.

Thatcher, J. and P. Perrewe (2002). "An empirical examination of individual traits as antecendents to computer self-efficacy." MIS Quarterly 26(4).

Thatcher, J. and P. Perrewe (2002). "An empirical examination of individual traits as antecendents to computer self-efficacy." MIS Quarterly 26(4).

Thompson, R. L., C. A. Higgins, et al. (1991). " Personal computing: Toward a Conceptual Model of Utilization " MIS Quarterly 15(1).

Torjak, S. (2003). A Uses and Gratifications Analysis of Consumer Satisfaction Correlated Expectations in E-commerce Retail Shopping. M. o. Science and i. Journalism.

Uray, N. and D. Ayla (1997). "Identifying Fashion Clothing Innovators by Self-Report Method." Journal of Euro-Marketing 6(3).

Usala, P. D. and C. Hertzog (1991). "Evidence of Differential Stability of State and Trait Anxiety in Adults." Journal of Personality and Social Psychology 60(3).

Webster, J. (1989). Playfulness and computers at work, New York University.

Webster, J., J. B. Heian, et al. (1990). Mitigating the Effects of computer Anxiety Through Training Proceedings of the Eleventh International Conference on Information systems.

Wilson, J. R., P. B. Raven, et al. (1999). "Prediction of respiratory distress during maximal physical exercise: The role of trait anxiety." American Industrial Hygiene Association Journal 60(4).

Wood, R. E. and A. Bandura (1989). "Impact of conceptions of ability on self-regulatory mechanisms and complex decision-making." Journal of Personality and Social Psychology 56: 407-415.

Woodruff, S. L. and J. F. Cashman (1993). "Task, domain, and general self-efficacy: A re-examination of the self-efficacy scale." Psychological Reports 72: 423–432.

Yerkes, R. M. and J. D. Dodson (1908). "The Relation of Strength of Stimulus to Rapidity of Habit Formation " Journal of Comparative and Neurological Psychology 18: 459-482.

Yi, M. Y. and Y. Hwang (2003). "Predicting the use of web-bases information systems: self-efficacy, enjoyment, learning goal orientation, and technology acceptance model Studies." International Journal of Human-Computer 59: 431-449.

Zhang, Y. and S. Espinoza (1998). "Relationships among computer self-efficacy, attitudes toward computers, and desirability of learning computer skills." Journal of Research on Computing in Education 30(4).