

## An empirical investigation on the Role of Self-efficacy, Outcome Expectations, Anxiety, and Trust in B2C e-commerce from the Aspects of Social Cognitive Theory

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**Abstract:** There is a stressing need in the literature for the application of the well-known social cognitive theory in the area of electronic commerce (e-commerce), but more specifically, in the developing countries such as Jordan. To better understand how individual differences influence the use of e-commerce (B2C e-commerce) a conceptual framework was developed and modeled based on Bandura's social cognitive theory to test the importance of dynamic and stable traits (i.e., e-commerce self-efficacy, outcome expectations, trait anxiety, e-commerce anxiety, and consumer trust) on the intention of an individual to shop online. A self-administered questionnaire was used to capture the data from individual users in Jordan, from whom only 3% are e-commerce users (Arab Advisors Group Survey, 2011). In order to test the hypotheses introduced in the research model of this study, a method that engages individuals in a free simulation of real-life e-commerce situations was adopted. The findings indicate that e-commerce self-efficacy, outcome expectation, technology anxiety, and consumer trust are all significant predictors of the Jordanian intention to use e-commerce. E-commerce self-efficacy was the second powerful factor after consumer trust in determining consumer intention to shop online. In addition, this study surprisingly shows that general self-efficacy and trait anxiety do not influence the specific e-commerce self-efficacy. From a theoretical perspective, the study attempts to further our understanding of the nomological network of individual differences that lead to e-commerce usage. From a practical perspective, the findings can help in designing more effective strategies aiming to increase the use of e-commerce for individuals with different dispositional characteristics by providing some valuable insights into the performance and adoption of e-commerce by individual customers. These insights can help designers/developers, implementers, and managers of organizations of e-commerce systems to improve the effectiveness of their electronic services and increase the usage rates of e-commerce in the developing world in general.

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### 1. Introduction

Business to Consumer electronic commerce (B2C e-commerce) has been generally 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). But, even though the e-commerce usage worldwide is dramatically increasing, there are two facts that need to be addressed. The first: little is known about e-commerce adoption in developing countries since most of the published studies were conducted about developed countries. The second: there are still many factors, such as self-efficacy, anxiety, or outcome expectations, that can impact on the growth of e-commerce worldwide but have not been given the right amount of attention or examination.

While cognitive social factors and self-efficacy have been introduced and utilized in a considerable amount of research in information

technology (IT) and behavioral sciences, not much research has been conducted about their role in online commerce transactions. Indeed, Al-Ziadat (2013) stated that "prior studies conducted in Jordan failed to determine the success factors of e-commerce adoption". Hence, there are many factors yet to be fully understood in the literature dealing with the issues that affect the usage of e-commerce. Thus, one of the purposes of this paper is to extend our understanding of e-commerce adoption through social cognitive factors. A better understanding of these factors is rather critical for policy making in designing training programs that effectively increase the e-commerce usage. Still, it could be argued that while this paper focuses only on Jordan, but it should be clear that the key findings presented in this research may also have important implications for all developing countries around the world which truly have many similarities with Jordan.

We are identifying new factors such as e-commerce self-efficacy, e-commerce anxiety, consumer trust, which have not been used yet, in this particular combined format, in the area of e-commerce before.

The remainder of this study is organized as follows: Section 2 examines the situation of e-commerce in Jordan and reports the theoretical background for this study. The framework developed will be reported in section 3 as well as the hypothesis. Section 4 describes the empirical research methods used and reports the results with a discussion of the findings. Section 5 concludes by presenting the implications and suggestions for future research.

## 2. Literature Review

### 2.1 Jordan: A general overview

Bounded by Syria to the north, Iraq to the northeast, Saudi Arabia to the east and south, the Red Sea to the south, and Israel and the Palestinian National Authority to the west, the Hashemite Kingdom of Jordan (or simply Jordan) is strategically located in the heart of Middle East region. Jordan currently has a population of around 6.5 million people, nearly 3 million of which make their home in the capital Amman. Jordan also has a high young population as more than 70% of the population is less than 30 years of age, which suggests that an investment in youth can be a strategic instrument for the future of electronic commerce (UNDP, 2014).

In the context of Jordan the trend is that IT (information technology) has only been started to be used as a marketing tool. In this way the Jordanian consumer, have some reservations of shopping

through the internet, excluding people who use it for entertainment, communication, and information purposes. Due to the rapid growth of e-commerce, consumer purchase choices are being processed in environments defined as computer-mediated (Nuseir & Al-Masri, 2010). Even though Internet penetration in Jordan was stated at 30% depending on the Internet World Stats (2011), just 3% of the entire users are actually e-commerce users with those who pay bills online and shop products (Arab Advisors Group Survey, 2011).

### 2.2 Theoretical Background

This study develops a model that helps to explain the human behavior in the area of e-commerce, based on the Social Cognitive Theory. The founder of the Social Cognitive Theory was Albert Bandura, in 1977. He has written many articles and four books to explain how this theory can explain human behavior (Bandura, 1977, 1979, 1982, 1986, 1987, 1989, 1995, 1997, 2002, 2006).

Three previous models have provided the theoretical foundation for the model constructs presented in this research. The first model, by Compeau et al. (1999) (Figure.1), put social cognitive theory into practice for the computer area. The second model, by Thatcher and Perrew (2002), applied trait anxiety, and computer anxiety to computer self-efficacy. The final model was constructed by Kim and Kim (2005) and used specific self-efficacy (online trading self-efficacy) on customer trust and buying intention. Therefore, it can be positively confirmed that this research model is a solid model, as it unites these three models into one to generate a clarification of users' behavior in the framework of e-commerce utilization.

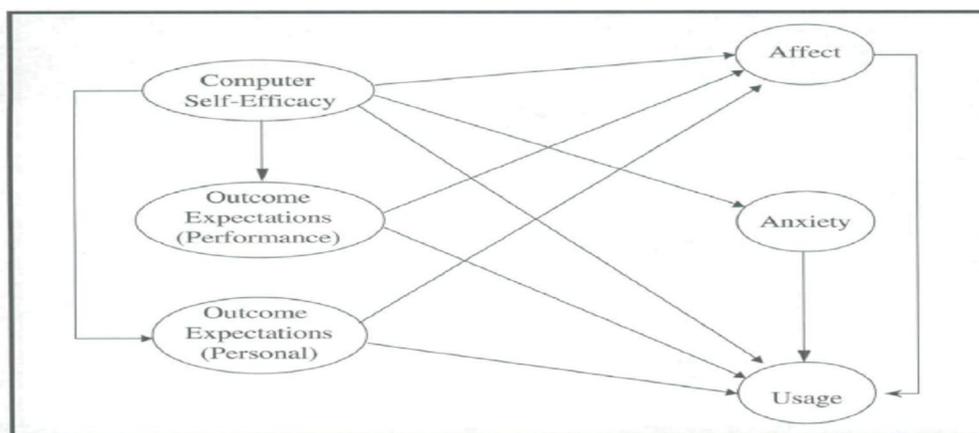


Figure 1. Social Cognitive Theory and Computer Usage. Adopted from Compeau et al. (1999). Source: MIS Quarterly Vol. 23 No. 2/June 1999

## 3. Development of the Research Model and Hypothesis

Bandura's work on the Social Cognitive Theory (SCT) over more than 20 years has produced a widely

accepted and confirmed theory of individual behavior. This theory is mainly based on self-efficacy and outcome expectation (Bandura, 1986, 1982; Meier, 1985; Seligman, 1990). Bandura's observations specified that "nothing is more influential in people's everyday lives than conceptions of their personal efficacy. People often do not behave optimally even though they know full well what to do. This is because self-referent thought mediates the relationship between knowledge and action" (1986, p. 390). Self-efficacy is "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" Bandura (1986, p. 391).

According to this theory, the positive outcomes that individuals expect out of any technology will encourage them to utilize it. However, the theory does not establish a direct relationship between individuals' expectations of their capabilities (self-efficacy) and their behavior. Conversely, beliefs about outcomes are not considered sufficient to shape behavior as indicated by this theory, particularly if individuals suspect their abilities to successfully accomplish the task. The above argument suggests that self-efficacy, besides outcome expectations, must be taken into consideration (Bandura, 1977, 1982, 1986; Igbaria and Iivaria, 1995). The SCT was exemplified as a construct of two main expectations:

1. Expectations related to self-efficacy (Igbari and Iivari, 1995).
2. Outcome expectations, a concept presented also in a research study by Davis (1989) as the perceived usefulness for individuals.

Bandura (1977, 1986), through research related to cognitive theory, has conceived joint relations between behavior, key cognitive elements, and environment. It is very important to obtain deep insights into these existing relations, yet it is difficult to draw a linear recursive model to entirely understand this conceptualization, due to the richness of its contents (Compeau and Higgins, 1995).

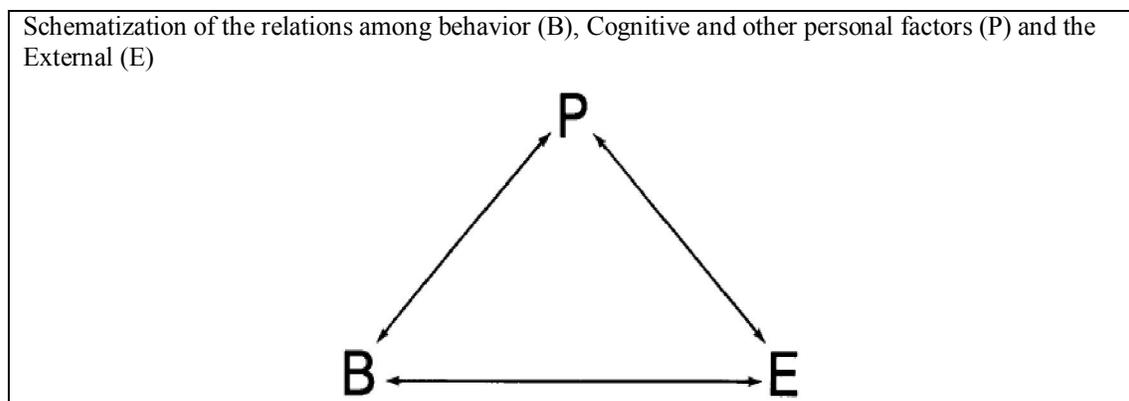


Figure 2: Triadic Reciprocal Causation Model, 1979. Source: Bandura 1986

In this study, these three elements were incorporated into the developed research model and the question of what factors to include was answered from previous IS research through investigating constructs within the structure of SCT. Therefore, the discoveries resulting from previous IS research will be incorporated into the model by relating key constructs within those of the SCT as follows.

### 3.1 The Research Model

Researchers have applied SCT and the self-efficacy construct, particularly, in many empirical research fields such as health, education, science, and, for the first time, in IT in 1989. However, no study has verified an existing relation between Social Cognitive Theory and the utilization of e-commerce until now. Only one study by Kim and Kim (2005) has partially discussed the effect Social Cognitive Theory has on online shopping by only examining self-efficacy. However their research suffered many limitations, which this study attempts to cover.

This study is presented with confidence that it is the first research (up to our knowledge) that attempts to explain the influence of a comprehensive set of cognitive social factors on the adoption and the usage of e-commerce systems as no definite model for SCT has been built to date. Additionally, this study will introduce new terms (such as e-commerce self-efficacy, and technology anxiety) that have not been previously used combined. These terms were developed in view of the literature resulting from studies in related fields, such as information technology, information systems, and other specific software research. Constructs belonging to Social Cognitive Theory were also used in this model (such as general self-efficacy, e-commerce self-efficacy, trait anxiety, technology anxiety). This study claims that this model will empower the research in e-commerce and marketing

area, from which one construct was utilized (i.e., user trust).

### 3.2 Hypothesis Development

#### 3.2.1 Construct Definition

The research model has seven constructs. The definition of each construct is summarized in Table 1.

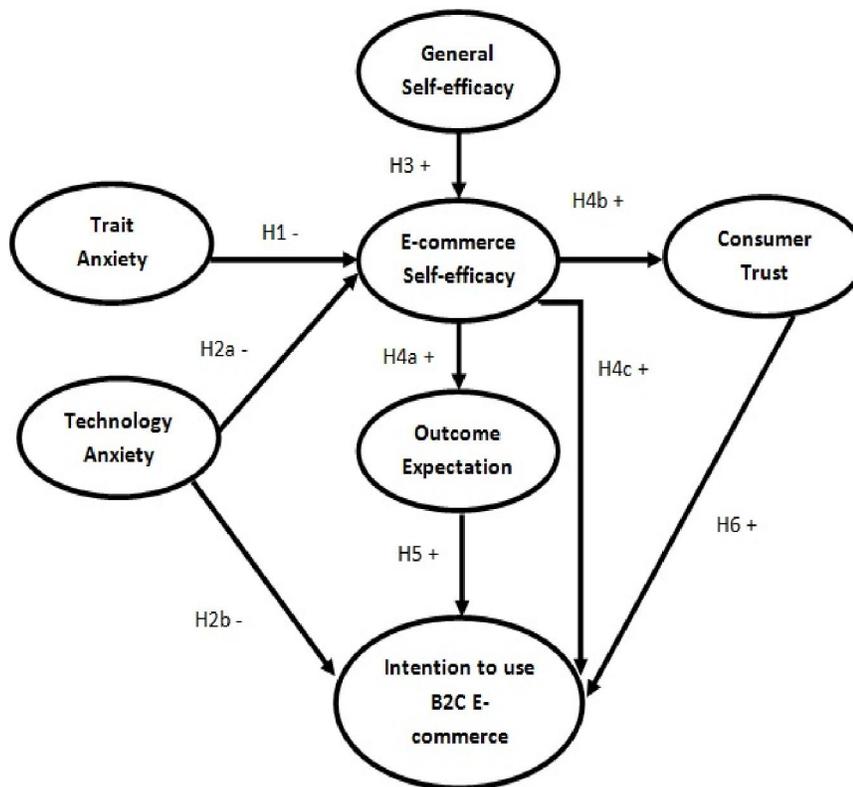


Figure 3. The research Model

Table 1. Definitions of Research Constructs

Construct	Definition
B2C E-commerce system	The procedure of buying, selling, transferring or exchanging product, services, and/or information via computer software networks, including the Internet (Turban et al., 2004).
Trait anxiety (TA)	The general feeling of fear when confronted with problems or challenges (Thatcher and Perrewe, 2002).
Technology Anxiety (TE-A)	Fear of e-commerce system use or learning to use this technology, reasons for fear (e.g., pressing the wrong key or fear of other possible mistakes), (Thatcher and Perrewe, 2002).
General self-efficacy (GSE)	Individuals' acuity of their ability to achieve across a variety of different situations. (Kim and Kim, 2005)
E-commerce self-efficacy (E-C SE)	A judgment of one's capability to use and buy through an electronic commerce system. (Kim and Kim, 2005)
Outcome expectation (OUT-E)	The expected consequences of behaviour when using the ecommerce system (Compeau et al, 1999)
Consumer trust (Con-T)	A user's confident belief in the company's e-commerce system (Macintosh and Lockshin, 1997; Tax et al., 1998).
Intention to shop online (INT)	Refers to the degree to which a consumer intends to use e-commerce technology for buying her/his products (Gefen, 2000)

#### 3.2.1.1 Trait Anxiety

Eisenberg et al., (1996) identified anxiety as an emotional state, associated by negative prospects of outcomes or concerns about how serious these outcomes can turn out to be. Trait anxiety (TA) was

defined by Spielberger et al., (1970) as a common tendency to undergo a state of anxiety when contending with troubles or challenges. Tellegen (1985) argued that individuals are more expected to suffer anxiety through time and across situations, as

TA is comparatively stable.

Both anxiety and cognitive efficiency have been believed by researchers for a long time to be strongly associated. Yerkes and Dodson (1980) 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 more cognitive resources to become more accessible and foster the rate of mental operations (Suri and Monroe, 2001). Trait anxiety is identified as a person's general disposition to be anxious, whereas state anxiety refers to the anxious effect of situational frustration (Spielberger, 1966; Usala and Hertzog, 1991).

Trait anxiety is regarded as a major element of personality in most modern personality theories, as indicated by Thatcher and Pamela (2002) (see Digman, 1990, for a review). Wilson et al., (1999) built a model which indicated that 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), represents the general propensity to be anxious as a personality characteristic, whereas state anxiety is described as the level of anxiety at a particular moment. 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 domain-specific trait anxiety. Thus it is hypothesized that:

**H1:** There is a negative relationship between an individual trait anxiety and e-commerce self-efficacy.

### 3.2.1.2 Technology Anxiety

State anxiety demonstrates personal feelings of tension, anxiety, and concern which vary in strength and over time (Spielberger et al., 1983). 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 et al., 1986, p. 630). A similar definition for computer anxiety was offered by Bozionelos (2001), who 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 out by Rosen and Maguire (1990).

In a study by Thatcher and Perrew (2002), they explained how SCT indicated how self-efficacy and anxiety influence each other. As implied in the SCT, individuals who suffer higher levels of anxiety may report lower levels of efficacy; while as their efficacy rises, they report 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), and thus, the following hypothesis is presented:

**H2a:** There is a negative relationship between individual's technology anxiety and e-commerce self-efficacy.

Computer utilization is expected to be negatively influenced by feelings of anxiety, due to the fact that people are expected to avoid behaviors that give rise to anxious feelings. Many studies have illustrated a relationship between computer anxiety and usage (Compeau and Higgins, 1995b; Igabaria et al., 1989; Webster et al., 1990). 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.

People who interact intensively and or/frequently with computers are usually computer phrenics are 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 into consideration when studying technology usage (i.e., e-commerce system), and based on this line of argument, the following hypothesis is defined:

**H2b:** There is a negative relationship between individual's technology anxiety and his or her intention to use e-commerce system.

### 3.2.1.3 General Self-efficacy (GSE)

In 1977, Bandura, in relation to the Social Cognitive Theory, 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 caused research to be conducted according to this belief. Later on, attempts to investigate the concept as a comprehensive rather than specific resulted in the construction of general self-efficacy (GSE) (Woodruff and 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 et al., 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 a relatively flexible, task-specific belief, while GSE is relatively constant, characteristic-like, general belief of capability (Chen et al., 2000; Chen et al., 2001).

Gibbons and Weingart (2001) and Siu et al., (2007) also discriminated between task-related and general self-efficacy, since self-efficacy varies collectively across tasks and performance areas and in constancy over time and circumstances. The 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). At the lowest level, one’s capability of successfully finishing 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 Heggstad (1997) and Chen et al. (2000) distinguished between these variations and clearly outlined associations between different kinds of personality 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 circumstance 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 and Pierce, 1998; Chen et al., 2001). Some past experiences (actual experience, vicarious, verbal persuasion, psychological states) affect both GSE and SSE. Nevertheless, Eden (1988) points to the fact that GSE is much more resilient to short-lived experiences than is SSE. In other words, accumulative successes and failures through an individual’s life-time are most responsible for shaping her/his GSE (Shelton, 1990).

As stated by Eden (1988), Chen et al., (2001), Shelton (1990) and Sherer et al., (1982), GSE positively impacts on SSE across tasks and situations (that is, GSE) “spills over” into particular situations, as observed through the relationship between it and

SSE in a variety of tasks. Therefore, individuals with higher GSE perform better through varying tasks and situations. Consequently, it can be hypothesized that:

**H3:** There is a positive relationship between general self-efficacy and e-commerce self-efficacy.

#### **3.2.1.4 E-commerce Self-efficacy (E-C SE):**

Self-efficacy is described as an individual’s belief that he or 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 abilities to mobilize the motivation, cognitive resources, and courses of action needed to meet specified situational demands. SSE relates to one’s confidence of being able to accomplish specific performance levels (Wood and Bandura, 1989).

Stajkovic and Luthans (1998, P. 244) 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 behavior” but takes a broader view to a “variety of situations” (Sherer et al., 1982, p. 664).

Consistent with the definition of SSE, this study will describe e-commerce self-efficacy as one’s judgment of being capable to successfully use and perform transactions through an electronic-commerce system.

Experimental research during the past 10 years has 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 (for example, adaptability to using computer and information systems). 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. Compeau and Higgins (1995) found that computer self-efficacy also influenced expectations about the future outcomes of computer use, such as job performance and personal accomplishment.

Outcome expectations (i.e., perceived usefulness) are estimates that a behavior will produce particular outcomes (Oliver and Shapiro, 1993; Eastin and LaRose, 2000) but it depends greatly on how well the individual believes he or 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 that s/he will aim to successfully accomplish the desired outcome.

In terms of e-commerce particularly, research has generally supported positive relations between self-efficacy and outcome expectations (Gist and Mitchell, 1992; Stajkovic and Luthans, 1998, Schworer et al., 2005). 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, as mentioned earlier, 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 individuals' beliefs of being capable of using e-commerce systems to purchase items. Thus, it can be hypothesized that:

**H4a:** There is a positive relationship between e-commerce self-efficacy and end-users' outcome expectation.

People described as low in self-efficacy are less certain of their ability to impeccably perform the transactions of buying, selling or returning items online. So, if any of their online merchandises do not turn out satisfactorily, they will be most probably 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 and Kim, 2004).

The higher the customers' self-efficacy while dealing with an e-commerce portal, the more positive outcome expectation they will probably have and the more 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 or her proficiency to accomplish a successful specific task (e-commerce self-efficacy) influences his or her trust in the domain of e-commerce. Therefore, it can be hypothesized that:

**H4b:** There is a positive relationship between e-commerce self-efficacy and user trust.

As stated by Bandura (1997), self-efficacy refers to one's belief in his or her ability to perform a task successfully and here in e-commerce it is suggested that self-efficacy plays a significant role in

determining behavioral intention (Taylor and Todd, 1995).

Self-efficacy perceptions were characterized by Hsu and 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 has been confirmed by numerous studies. A new variable was presented by Compeau and Higgins (1995, 1999), Davis et al. (1989), Hill et al. (1987), Igbaria and Iivari (1995), which is the user's feeling of "being prepared". This variable is considered similar to the concept of "self-efficacy" and has also been found to be related to the degree of use. Internet self-efficacy was positively related to Internet usage in the context of the Digital Divide (Eastin and LaRose, 2000).

Special self-efficacy was suggested for consideration as 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) also 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 and Brass (1990), Compeau and Higgins (1995, 1999) and Oliver and 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 behavior as long as they feel capable of successfully performing needed tasks. Therefore, the following hypothesis is proposed:

**H4c:** There is a positive relationship between e-commerce self-efficacy and the intention to use e-commerce.

### 3.2.1.5 Outcome Expectation

Bandura (1986), in his social cognitive theory, stated that people are more likely to take on behaviors that they suppose 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 paper 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 expectation in the IT literature are limited in number. In 1989, researchers Davis et al., conducted a study on MBA students in which they detected a development of behavioral intentions about using a word-processing program, derived from expectations that it would enhance their performance in the MBA program (Davis et al., 1989). Previously, Smith and Mann (1987) demonstrated that individuals' choice to gain knowledge of a programming language was highly influenced by outcome expectations.

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

Outcome expectations are demonstrated in the e-commerce context clearly through the increased utilization of this technology by consumers who expect 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 factor for them to use the system. Therefore, we hypothesize that:

**H5:** There is a positive relationship between customers' outcome expectations and intention to use e-commerce systems.

### 3.2.1.6 User Trust

O'Donnell (2002) defines consumer trust as the consumers' belief that the vendor, that is, a firm or website, will accomplish the transaction as the consumer expects. The twenty-first 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 user trust is becoming more important equally to both experts and academics (Lippert, 2001a, 2001b, 2001c). The concept of technology trust attempts to measure the user's trust in the inanimate IS technologies: hardware and software, operating on a daily basis (Lippert, 2001a,

2002).

Surprisingly, Heijden et al. (2001) did not observe any explicit relation between user's trust in online stores and their behavior toward purchasing. The explanations provided by Heijden contradict a previous study conducted by Jarvenpaa et al. in 1999. However, Heijden et al. (2001) warned that their study excluded substandard websites and they suggested that a deeper analysis and understanding of 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) and Kim and Kim (2005) demonstrated how purchase intentions are being significantly shaped by users' trust in web-vendors. As an example, they showed how consumers' low trust in web-vendors makes them less willing to engage in e-commerce transactions. Therefore, we hypothesize that:

**H6:** There is a positive relationship between users' system trust and intention to use e-commerce systems.

## 4. Methodology

### 4.1 Data Collection Method and Measurements

A self-administered structured questionnaire, constructed based on other related previous studies, was used to examine the adoption of B2C e-commerce in Jordan. This questionnaire was pre-tested, modified, and used to capture data of e-commerce users in Jordan.

Multiple items were used for measuring the research variables using a five-point Likert scale, ranging from 5= "strongly agree" to 1= "strongly disagree". To ensure content validity, the selected items in the instrument were operationalized using validated items from prior research to ensure the validity of the content. The general self-efficacy scale was measured using items adopted from Bosscher and Smit (1998). The Electronic-commerce Self-efficacy scale was adapted from Compeau and Higgins (1995), and Kim and Kim (2005). Outcome Expectation items were adopted from Compeau and Higgins' (1995). Trait Anxiety Scale was adopted from Thatcher and Perrewe (2002). Technology Anxiety items were adopted from Thatcher and Perrewe's (2002). User Trust Scale was operationalized based on previous studies on online transactions (Gefen, 2000). The items of intention to use e-commerce were adapted from Kim and Kim (2005).

For content and preface validity, the instrument was pre-tested with three academics in the field of IS. The three academics were consulted regarding where they commented on the

questionnaire and made comments concerning its ease of use, expected effectiveness, unambiguousness, expressiveness, content validity (that is, that the scale items appeared to measure what they were intended to measure) and the general appropriateness. Afterwards, five academic excellent postgraduate students were asked to fill the survey. When they finished it, they were asked to point out any problems in the survey questions. Based on their feedback, the wording of some questions was modified to improve the clarity. Feedback was very helpful in determining what changes to apply (for example, changes to individual questions/statements and to the instructions for respondents, such as replacing the word “uncertain” in the five-point Likert scale to “neutral” with the intention of reducing participants’ tendency to frequently make that choice).

To ensure the items are measuring the same construct, Cronbach’s alpha was used to evaluate the reliability of the instrument items (Cronbach, 1970). Although researchers suggest 0.7 as the accepted reliability cut-off, a value of more than 0.6 is regarded as a satisfactory level (Hair et al., 2006). The reliability function in the SPSS 17 was used to test the internal consistency (i.e. reliability) for the items in each scale. The results are presented in Table 2. The outcomes of the statistical analysis demonstrate satisfactory, ranging from 0.71 to 0.94

Table2. Internal Consistencies of Constructs

Scale	No. of items	Cronbach’s alpha
Trait anxiety	4	0.710
Technology anxiety	5	0.932
General self-efficacy	12	0.813
E-commerce self-efficacy	6	0.841
Outcome expectation	11	0.883
User trust	6	0.833
Intention to use e-commerce	4	0.939

#### 4.2 Sampling Strategy and Study Population

Specific to the current research, the population includes everyone who is over 18 years of age, with adequate experience in using the Internet, in addition to Internet-connected computers (Al Shibly, 2006). However, the researchers lacked the right to access reliable e-commerce client lists due to privacy policies, confidentiality laws, and ethical concerns which complicated the process of recognizing a good evocative sample. The alternative solution investigated by the researchers involved

using a buying online simulation environment, in which the respondents can participate in.

Another decision that was made by the researchers and two academic experts from information systems and marketing upon evaluating all available data-gathering techniques and sources is to obtain the sample from university student population. Further reasons supporting the validity of selecting the sample of university students were that university students are the more expected future users of e-commerce systems. In addition, many academics, in response to the continuous argument about using university students as a sample, have confirmed the validity of students as subjects (for example, Calder and Tybout, 1999; Chow, 1999). As well as researchers targeting Internet users have discovered that the online population is young, more educated, and wealthier than the general public (Bellman, Lohse and Johnson, 1999; Jupiter Communications, 1998 and 1999; Kehoe et al., 1999), which are truly some of the characteristics of the students of universities.

The questionnaire was administered to 350 students in the University of Jordan, A total of 238 questionnaires were returned. 19 questionnaires were excluded due to the significant number of unanswered questions. Finally, 209 questionnaires were judged as eligible and suitable for analysis. The buying simulation, in which the respondents participated, produced a comparatively high total response rate (68%).

The demographic characteristics of the participants are presented in Table 3. One hundred and five males participated in this survey, which represents 50.2% of the total respondents, while females (104) comprised the remaining 49.8%. As for age groups, the 18–22 year group comes first as a modal group, with 63.6% (133 respondents). Subsequently, the 22–29 group is represented by 20.1% of the total sample, with 42 respondents. The 30–38 group is represented by 9.6 % of the total sample, with 20 respondents. Whereas the 39–44 group is represented by 5.7 % of the total sample, with 12 respondents. Above 45 years is the final group in the set, scoring 1% (2 respondents). Examining the level of education results revealed that 133 respondents (63.6 %) were undergraduate students, whereas 76 of them (36.4 %) were postgraduate students.

Examining the Internet usage, around 61% of the respondents are using the Internet on daily bases. These results indicate that young people in Jordan have considerable experience in using computers and Internet.

Table 3. Demographic characteristics of the participants

Ptc.	Frequency	Category	Characteristic
49.8	104	Female	Gender
50.2	105	male	
63.6	133	18-22	Age
20.1	42	22-29	
9.6	20	30-38	
5.7	12	39-44	
1.0	2	over45	
63.6	133	Under-graduate	Education
36.4	76	Post- graduate	
25.8	54	Less than 100	Level of income
33.0	69	101-200	
13.9	29	201-300	
27.3	57	More than 300	
7.0	15	Several times monthly	Internet usage Frequency
32.0	67	Several times weekly	
61.0	127	Several times daily	

#### 4.3 Development of the Survey's Scenario

In order to test the hypotheses introduced in this research, a method that engages individuals in a free simulation of real-life situations has been adopted. This approach can be of great assistance in the research, as it facilitates the observation of individuals' performance in very "reality-like" situations (Al-Shibly, 2006; Starub et al., 2005).

As this study sample consists mainly of university students who use Amazon.com for their common online purchases like university books, the popular site was identified by the researchers and their advisers as the best site on which to operate the test. One scenario was given to students, whereby they were provided with the home URL of the website (www.amazon.com) and asked to act as if they wanted to purchase a book. As seen in Table 4, a scenario was developed regarding a purchase of a book, whereby participants accessed the site through their home PCs or laptops and experienced the procedures of buying, but without essentially fulfilling the final transaction of paying. Later, they were asked to answer the survey questions.

Table. 4 The study scenario (free simulation)

Website	The Scenario
Amazon	Imagine that you are planning to purchase a book for your personal use. The book is not available at your local library. Use the electronic commerce website www.amazon.com to research the book you would consider buying. Please DO NOT actually buy anything from the online store. You are only required to research the information available and see if you can find a book that you like. Once you have found the book that you are satisfied with, please fill out the following information.

#### 4.4 Findings and Results of Hypotheses Testing

Regression analysis is a statistical tool for the investigation of influence of one or more variables (independent) on another variable (dependent variable) as defined by Field (2008). A set of linear and multiple regressions were used to test the hypotheses associated with the research model. Although the path coefficient can be estimated in many ways, multiple regression analysis is used by most empirical studies to explore the relationship between a single dependent variable and several predictors (independent variables) (Hair et al., 2006). The multiple regression assumptions of normality, linearity, homoscedasticity, and independence of residuals were tested and the integrity of the assumptions was not questioned. Figure 4 is a graphical representation of the analysis results. Table 5 shows the results of the regression analysis based on the relationships proposed in the research model. To investigate the research hypotheses, multiple regression analyses were performed using SPSS 17.0 package for Windows. To investigate hypotheses H1, H2a, and H3 (Trait anxiety, technology anxiety, and General self-efficacy) were simultaneously regressed on e-commerce self-efficacy. Multiple regression analyses were performed to investigate hypotheses H2b, H4c, H5 and H6 (Technology anxiety, E-commerce self-efficacy, Outcome expectation, and Consumer's trust) were simultaneously regressed on behavioral intention to shop online (BI). To investigate the research hypothesis H4a, H4b, single regressions were performed. All the research

hypotheses ( H2a, H2b, H4a, H4b, H4c, H5, and H6) have been supported by the empirical test. Whereas unpredictably H1 and H3 were rejected. In addition, the results indicate that the research model explained around 70.9 % of the variance in consumer’s intention to adopt and use e-commerce ( $R^2 = 0.709$ ).

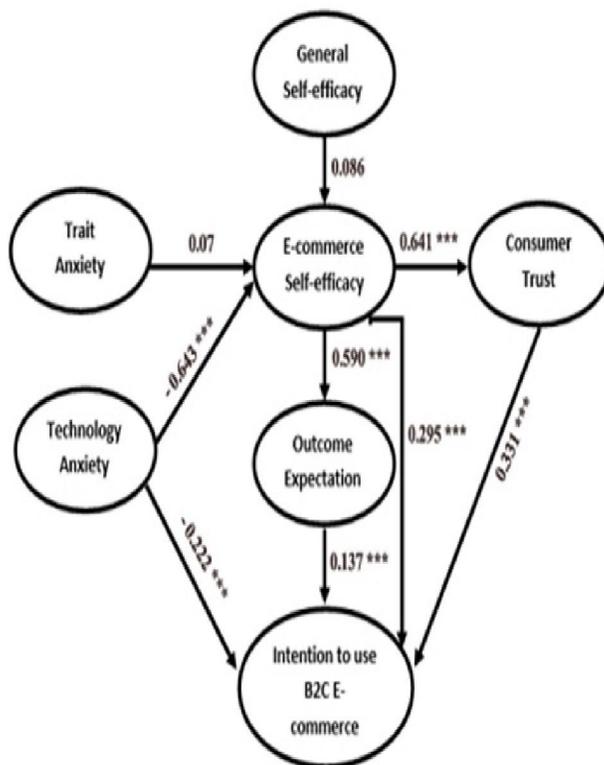


Figure 4. Significant relationships in the research mode

Table 5. Path coefficients and hypotheses testing

Analysis Type	Hyp.	Independent Variable	Dependent Variable	Std. Error	Beta	T	Sig.	Result
Multiple regression	H1	TA	E-C SE	.036	.070	1.350	.179	Rejected
	H2a	TE-A		.044	*** -.643	-11.646	.000	Accepted
	H3	GSE		.080	.086	1.546	.124	Rejected
	H2b	TE-A	INT to shop	.053	*** -.222	-4.024	.000	Accepted
	H4c	E-C SE		.068	*** .295	5.236	.000	Accepted
	H5	OUTCOME		.074	** .137	2.645	.009	Accepted
	H6	CON-T		.075	*** .331	5.762	.000	Accepted
Single regression	H4a	E-C SE	OUTCOME	.047	*** .590	10.525	.000	Accepted
	H4b	E-C SE	CON-TRUST	.049	*** .641	12.016	.000	Accepted

Statistical Significance

\*\*\* Correlation is significant at <0.001

\*\* Correlation is significant at <0.01

\* Correlation is significant at <0.05

#### 4.5 Discussion

The findings indicate that there are factors which can influence the individual adoption of B2C e-commerce in Jordan. As hypothesized, technology anxiety, e-commerce self-efficacy, outcome expectation, and consumer trust are significant predictors of usage intention, and together, accounted for 70.9 % of the variance in the consumer intention to use e-commerce ( $R^2 = 0.709$ ). Table 6 shows the Model summary.

This study hypothesized that there would be a negative relationship between the trait anxiety and e-commerce self-efficacy (H1). The findings of this study unexpectedly did not support this hypothesis. Trait anxiety has no impact on the e-commerce self-efficacy. As shown in Table 5, the standardized coefficient (Beta value) for the Trait anxiety is not significant ( $\beta = 0.070$ ,  $p < 0.05$ ). As hypothesized, technology anxiety had a negative impact on the e-commerce self-efficacy (H2a). Table 5 shows that Beta value for the technology anxiety is negative and significant ( $\beta = -0.643$ ,  $p < 0.001$ ). As well as technology anxiety has negative impact on the consumer's intention to use e-commerce (H2b). Table 5 shows also that Beta value for the technology anxiety is negative and significant ( $\beta = -0.222$ ,  $p < 0.001$ ). Inconsistent with previous research (Thatcher and Perrewe, 2002), trait anxiety does not have a directly negative effect on e-commerce self-efficacy.

The implication from this result is that technology anxiety is not constant. The technology anxiety can be reduced by teaching these systems in schools, and training people in how to use specific systems (here e-commerce systems) and using the media (newspapers, radio, television, and special reports) to increase information about these systems. That will reduce the technology anxiety and increase the e-commerce self-efficacy, which will result in greater intention to use e-commerce.

Table 6. Multiple Regression Model: Dependent variable: Intension to Shop on-Line

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.876	.381		2.296	.023
E-Commerce Self Efficacy	.354	.068	.295	5.236	.000
Outcome Expectation	.194	.074	.137	2.645	.009
E-Commerce Anxiety	-.212	.053	-.222	-4.024	.000
Consumer Trust	.432	.075	.331	5.762	.000
R	0.842				
R <sup>2</sup>	0.709				
Adjusted R <sup>2</sup>	0.703				
Regression F-value	124.139				
Sig. For F-Value	.000				

One more Hypothesis (H3) was not supported by the results of the study, as shown in table 5. Contrary to expectations, general self-efficacy did not have a significant relationship with e-commerce self-efficacy and this indicates that general self-efficacy will not improve e-commerce self-efficacy. Table 5 shows that Beta value for the General Self-efficacy is not significant ( $\beta = 0.086$ ,  $p < 0.05$ ). There are two explanations for this result. The first is that the general users' expectation about their capability is different when they face specific cases (for example, using e-commerce), so they might assume a high level of capability about themselves generally, but when they face a specific case they find themselves incapable of performing this task.

Hypothesis H4a was supported by the results of the study, as e-commerce self-efficacy has positive impact on the users' outcome expectation. As shown

in table 5, Beta value for the e-commerce self-efficacy is positive and significant ( $\beta = 0.590$ ,  $p < 0.001$ ). Not surprisingly, e-commerce self-efficacy has a significant relationship with users' outcome expectations. This indicates that e-commerce self-efficacy improves in general the outcome expectations. Individuals who have confidence in their ability to use e-commerce have higher expectations of the outcomes of using these systems than those who lacked this confidence. This has implications for increasing the motivation for using these systems.

Hypothesis H4b was supported by the results of the study, as shown in table 5. Not surprisingly, e-commerce self-efficacy has a significant positive relationship with user trust. The Beta value for the e-commerce self-efficacy is positive and significant ( $\beta = 0.641$ ,  $p < 0.001$ ). This indicates that e-commerce self-

efficacy will increase users' trust in e-commerce systems. E-commerce self-efficacy has a direct positive effect on users' trust. This result shows the importance of self-efficacy in increasing users' trust in e-commerce technology.

In addition to Hypotheses H4a, H4b, Hypothesis H4c was supported by the results of the study, as shown in table 5. As expected, Customer's e-commerce self-efficacy has a significant positive relationship with their intention to use e-commerce, that Beta value for the e-commerce self-efficacy is positive and significant ( $\beta = 0.295$ ,  $p < 0.001$ ). This indicates that increasing e-commerce self-efficacy will increase customers' intention to use e-commerce.

Hypothesis H5 was supported by the results of the study. Not surprisingly, user's outcome expectation has a significant positive relationship with users' intention to use e-commerce; that Beta value for the outcome expectation is positive and significant ( $\beta = 0.137$ ,  $p < 0.05$ ); thus, indicating that an increase in users' motivation will increase their intention to use e-commerce. As table 5 shows, the direct effect of users' outcome expectation of using e-commerce on their intention to use these systems.

Hypothesis H6 was supported by the results of the study, as shown in table 5. As expected, user trust has a significant positive relationship with intention to use e-commerce; that Beta value for the user trust is positive and significant ( $\beta = 0.331$ ,  $p < 0.001$ ). This indicates that increasing users' trust will increase their intention to use e-commerce. Table 3 shows that users' trust in e-commerce has a direct positive relationship with users' intention to use e-commerce. Accordingly there is considerable cause to increase users' trust by increasing their self-efficacy, in order to increase their intention to use e-commerce.

## 5. Conclusion and Implications

This study is a step forward in developing a more robust understanding of individual differences that may inform decisions makers, enhance trainings' effectiveness, and extend our understanding of factors linked to individual intention to use e-commerce. This study articulated and tested a conceptual model to test relationships among stable (i.e., independent) and dynamic (i.e., dependent) traits (i.e., e-commerce self-efficacy, outcome expectations, trait anxiety, e-commerce anxiety, and consumer trust) in online shopping environments.

Based on the study-discussed findings, three considerable conclusions can be made. First, the self-efficacy (e-commerce self-efficacy), outcome expectations, consumer trust, and technology anxiety are significant predictors of an individual's intention to use e-commerce. It should be noted that e-commerce self-efficacy was the second powerful

factor (after the consumer trust) in determining consumer intention to shop online ( $\beta = 0.295$  for e-commerce self-efficacy,  $\beta = 0.331$  for consumer trust).

Second, technology anxiety has a negative significant effect on e-commerce self-efficacy. Third and surprisingly, there were no effects for general self-efficacy and trait anxiety on individual's intention to use e-commerce.

Much of the existing empirical research focused on e-commerce in developed countries. In consequence, very little is known about e-commerce adoption and usage in the developing countries, including Jordan (Al-Ziadat et al, 2013). Therefore, it could be argued that this study has made significant contribution to the body of knowledge at academic and practical levels as an important exploratory study in the context of Jordan as one of the developing countries where there is a real need for much research to be conducted on e-commerce issues.

The implications of this study are both practical and theoretical. At the practical level this study has many implications. First, the study shows that adoption of e-commerce systems is directly, significantly, and positively affected by e-commerce self-efficacy, outcome expectations (perceived usefulness), and trust, but negatively by technology anxiety. It is proposed that individuals with higher levels of e-commerce self-efficacy, outcome expectations, trust, and with lower technology anxiety are more likely to perform an online transaction than those experiencing lower levels of these concepts. Second, e-commerce system designers/developers, implementers, and managers of organizations can derive benefits from the important implications derived from this study. In real practice, those responsible for creating and managing e-commerce operations are highly advised to bear in mind the significant impact of social factors that shape individuals' intention to exploit e-commerce. Third, the media are a very important tool that can be used to boost self-efficacy, as they provide information that increases awareness of the environment (Bandura, 1988). The media in all their forms: newspapers, TV, and radio, can be utilized through broadcasting extra knowledge and awareness regarding e-commerce in the developing countries. Offering such information will produce higher e-commerce utilization, as customers' anxiety decreases and self-efficacy increases.

At the theoretical level, this study has many implications. First, this study applied the well-known social cognitive theory in the e-commerce area by developing a model based on the combinations of Compeau et al. model (1999); Thatcher and Perrew (2002); and Kim and Kim model (2005) to investigate the impact of cognitive social factors on the intention

to use e-commerce. Earlier studies have covered some of the issues and have mainly applied them (i.e., cognitive social factors) in the area of computer technology. Therefore, this study is considered innovative, and it can be positively confirmed that the study model is a solid model uniting these three renowned and robust models into one to generate a clarification of individuals' behavior in the framework of e-commerce utilization. The developed model in this study can further enhance the research in the area of e-commerce and can be applied in different areas of e-commerce. In addition, the method used to collect the research data; the free simulation method, can be correctly used in other contexts and research as well. This method is described as "free" since the researchers attempted not to control any variables in the investigated environment; thus guaranteeing its free of bias. The model used in the free simulation questionnaire represents only users' behavior in a bounded duration of time and does not explain how this behavior can change later on. Users' attitudes can be measured over a longer duration in further studies, using a longitudinal model that can help in identifying any changes in behavior.

Future studies will be employed to fill the gap in the literature on the application of social cognitive theory in e-commerce and to provide further support for the social cognitive constructs in different area of e-commerce. Indeed, more research is required on the techniques used to boost e-commerce self-efficacy, outcome expectations, and reduce technology anxiety.

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#### \*Appendix (construct coding) Available upon request

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