

ROLE OF DIFFERENT ELECTRONIC-COMMERCE (EC) QUALITY FACTORS ON PURCHASE DECISION: A DEVELOPING COUNTRY PERSPECTIVE

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ABSTRACT

While Electronic-Commerce (EC) has become an important issue with the unprecedented proliferation of the Internet, there has been insufficient empirical research concerning the relationship of EC quality factors and purchase decision for consumers, especially of developing countries. EC purchase decision is greatly dependent on many perceived quality factors of EC. This article presents an exploratory study of a general conceptual model of perceived quality factors required for consumers purchase decisions in EC. It was observed from the investigation that the requirement for E-quality factors related to purchase decision is not the same for developing countries as found from research conducted in developed countries. Therefore, this research article attempts to find the link between personal trust disposition attitude and local environmental security concern, which are derived from country/cultural differences with perceived trustworthiness, a major quality factor for EC purchase decision. The findings have important managerial implications for the globalization of EC.

Keywords: purchase decision, EC quality factor, market segmentation, cultural difference, and developing country

1. Introduction

EC service quality plays a central role in customers' purchase decisions through the web [Loiacono *et al.*, 2000; Parasuraman, 2000; Rust, 2001]. Low price and web presence were initially thought to be the drivers of success for Electronic-Commerce (EC); service quality issues soon became pivotal. Quality factors of any business pattern obviously set a base for prospective customers to make decisions. However, in on-line purchases managed by self-service with little human interaction, many traditional service quality factors are less relevant [Zeithmal *et al.*, 2000].

The explosive proliferation of Internet users has led to dramatic shifts in the methodology of operating business. EC presents enormous opportunities for business, consumers, and employees. Therefore, exploring quality factors of EC and its possible impact on customers' purchase decision is a wide area to investigate and understand. Some scholarly research has explored, identified, examined, and evaluated many quality factors of EC [Lee *et al.*, 1999; Gefen *et al.*, 2000; George, 2000; Lee *et al.*, 2001; May *et al.*, 2002; Tsikriktsis, 2002; Balasubramanian *et al.*, 2003; Zhan *et al.*, 2003; Chiu *et al.*, 2005; Schaupp *et al.*, 2005] which vigorously influence the most fragile and complex behavior of consumers to make purchase decisions. Under this identification and evaluation, different models related to quality factors of EC which lead to customers' purchase decision are presented in the aforementioned research papers. Consumers' purchase decisions are a very complex and robust subject. So, it is not surprising that a large and expanding field of research has been conducted focusing on consumer behavior. Consumers' purchase decisions can be defined as those activities directly associated with obtaining, consuming, and disposing of products and services [Engel *et al.*, 1993]. Consumers' purchase decisions are greatly affected and diversified by their attitudes, behavioral intent, and local environmental security perception. Therefore, understanding and estimating the effect of customers' intrinsic characteristics and pre-perceived security concern on website quality expectations that lead to customers' purchase decisions would have important managerial implications [Tsikriktsis, 2002]. If the relative importance of EC quality factors to customers is likely to vary depending on their attitude and perceived security concern disposed from different societies, resource allocations on different quality factors of EC should be contingent on the importance attached to them by customers [Furrer *et al.*, 2000].

Actually, EC customers are versatile and come from different origins. Globalization is one of the major aspects of EC. Customers of different origins greatly differ on some quality factors of EC depending on their perceived social values, security concern, personal trust disposition attitude, and overall culture. There is empirical evidence

on how behavioral and attitudinal differences limit the ability of service providers to expand their operations globally [Kogut *et al.*, 1988; Li *et al.*, 1991, 1992; Li, 1994; Straub *et al.*, 2001; Schaupp *et al.*, 2005]. Understanding the behavioral differences of customers developed from national/social values has fierce implications for the globalization of EC, international market segmentation, and launching strategies. The objective of this research is to:

- 1) Explore the underpinnings of quality factors of business-to-consumers (B2C) EC shopping sites, which lead to customers' purchase decisions.
- 2) Identify the underlying factors of customers' behavior that comprehensively capture the differences of attitudes and feelings of an international segmented market.
- 3) Develop a relation between these factors of customers' behavior of different cultures and purchase decision model of EC quality expectations.

Consumers now have diversified attitudes, versatile bargaining power, extensive alternatives of available choices, and lower switching costs. As a result, they are very critical and sensitive to take purchase decisions from a website. Therefore, understanding on-line customers' purchase decisions has become an even more important topic meriting research attention [Webster, 1998; Korgaonkar *et al.*, 1999; Barsh *et al.*, 2000].

Globalization of EC continuously demands the understanding of customers' versatile and profound characteristics, and also the fundamental attributes which make these characteristics significantly different for different nations/states or cultures. Though a major percentage of on-line purchase is contributed by developed countries like the USA, Japan, UK, France, Germany, Canada, and Italy, and advanced developing countries like China, India, Brazil, Malaysia, South Korea, Taiwan, Singapore, and Thailand, other developing countries are gradually entering into Internet based markets with significant reflection [UNCTAD, 2004,]. With the on-going efforts to build global information infrastructure as well as nation-wide information infrastructure, developing countries are at the introductory pace of turbulent shifts to the information age [Lee *et al.*, 1999]. Although the percentage of EC purchases from developing countries is still very low, it is growing. In this context, the point should be noted that most EC organizations originated in developed countries that are still unaware of the quality requirements of customers of developing countries. But to expand their business arena and to gain advance competitiveness globally, these EC organizations should capture, identify, and incorporate the perceived quality requirements of the customers of developing countries. Therefore, this research work will open the expected window for EC to sustain globally.

There are some valid factors to explain the differences between the acceptance of EC in developed countries and developing countries [Lee *et al.*, 1999]. So this research study exclusively focuses not only on how contextual differences of EC quality factors influence customers' purchase decisions, but also on what contextual constructs make these EC quality factor expectations different for different regions of the international market. So, to achieve the objective of this study, we attempt:

- 1) To develop a structural framework explaining the relationships among key antecedents and mediators of constructs of purchase decision behavior in a B2C EC context,
- 2) To posit propositions regarding these relationships, and
- 3) To classify and explain the key antecedent and mediator factors based on customers' attitudes and perception of environmental security derived from different societies.

To explain, validate, and understand the aforementioned objectives, this study was conducted in Bangladesh, a developing country. Although much scholarly research has been conducted in recent years in developed countries exploring the effect of EC quality factors on customers' purchase decision, this current study found no fundamental research papers which attempted to examine the same effect in developing countries. Therefore, this study is a completely new and advanced window in this research field, because,

- 1) It was conducted in a developing country, Bangladesh.
- 2) It aims to correlate the underlying issues that can explain the differences of EC quality expectations depending on attitudes, behavioral intent, and local perceived environmental security concern.
- 3) It opens a new opportunity for researchers to integrate behavioral intention with the quality expectations of the customers of developing countries.

In the following section, based on the literature review, we explained and categorized EC quality factors that lead to customers' purchase decisions. The significant effect of market segmentation derived from personal trust disposition attitude/behavior and social values from perceived local/national environmental security on purchase decision is captured in this section. In the next section, the research framework and conceptual models are derived to anticipate conjoint relationships of EC quality factors, purchase decisions, and market segmentation characteristics. The following section discusses in detail the research design of the study. The next section analyzes, explains, and

illustrates the results and discussions of the models with refinement. Then finally, conclusions, limitations, and future research guidelines in this context are presented.

2. EC Operation

EC can be viewed as the sharing of business information, maintaining business relationships, and conducting business transactions through the Internet [Zwass, 1996; Barness *et al.*, 2003]. EC presents a virtual environment for all transactions, either products or services, and customers are paying for their shopping on trust depending on the information displayed by a company [Kumar *et al.*, 2006]. An operation of EC consists of a three-layer architectural framework. The three layers are physical infrastructure, business infrastructure, and business applications. These layers are the areas that differ from the traditional commerce [Zwass, 1996]. Since this study focuses on EC purchase decision, we define B2C EC operations as transactions conducted and globalized through the Internet for providing products and services. Based on the literature review [Gefen *et al.*, 2000; May *et al.*, 2002; Tsiriktsis, 2002; Zhan *et al.*, 2003; Ribbink *et al.*, 2004; Chiu *et al.*, 2005; Schaupp *et al.*, 2005; Kumar *et al.*, 2006], the major distinctive features of EC can be classified as:

1. EC transactions are based on offerings of products or services, i.e., a virtual environment.
2. Robust globalization of transactions is captured through EC operations. As a result, international market segmentation and different perceived social values are important to be considered to categorize quality factors of operations.
3. Virtual attributes like security concern, trust, and privacy might play a key role in a deterministic model of purchase decision.

EC Quality Factors

Depending on disciplines, quality has been defined in so many ways. For EC, it can be viewed as the overall requirements of products, services, and processes to satisfy a given need at a suited price. Defining quality factors of EC expands the concept of perceived customer value of EC and describes it as a source of competitive advantage. Based on a synthesis of scholarly literature reviews [Liang *et al.*, 1998; Szymanski *et al.*, 2000; Cox, 2002; Gaudin, 2003; Gefen *et al.*, 2003], perceived quality factors of EC can be viewed as a consumer's perception of the net benefits gained in exchange for the costs incurred in obtaining the desired benefits. So, evaluating perceived quality factors from the perspective of the consumption experience is important [MacMillian *et al.*, 1997; Anderson *et al.*, 1998]. All factors, both qualitative and quantitative, subjective and objective, that compile the complete purchase experience, should be considered in order to visualize how quality expectations are formed and what value means to the customer [Schechter, 1984; Zeithmal, 1988]. This study focused on quality factors of B2C EC, which affect human behavior and ultimately the purchase decision: Web quality and shopping experience, product perceptions, and customer service. Several scholarly researchers [Parasuraman *et al.*, 1988; Jarvenpaa *et al.*, 1997; Loiacono *et al.*, 2000; Szymanski *et al.*, 2000; Voss, 2000; Ranganathan *et al.*, 2002] have identified several antecedents of EC purchase decisions and revealed major quality factors involved in the pre-purchase stage that have significant influence on consumers' value perception and purchase intention in a B2C EC setting. This current study summarized and categorized these customer-focusing quality factors that have anticipated the potential effect on customers' purchase behavior as follows:

1. Customer Care: It includes responsiveness and customer service captured from the shopping experience.
2. Customer Value: It is focused on product quality expectation and price trade off from a customer's perception.
3. Privacy: It includes control on exposed information and site policy.
4. Site Security: It mainly explains customers' perceived security concern in the context of web site management and guarantee.
5. Operational Security: It is related to transactional security concern.
6. Trust: It is a virtual or psychological phenomenon. It is comprised of how the customer perceives trustworthiness on the EC operations.
7. Organizational profile: It mainly looks after the EC organization's background profile.

Purchase Decision

Purchase behavior has recently gained much attention from marketers and researchers because of the significant role it plays in anticipating operational success and achieving sustainable competitive advantage [Parasuraman *et al.*, 1985; Zeithmal, 1988; Bolton *et al.*, 1991; Dodds *et al.*, 1991; Holbrook, 1994; Cronin *et al.*, 2000]. Purchase decision can be defined as a continuous process, which refers to thoughtful, consistent action undertaken to bring about need satisfaction. Generally, customers are quite rational and make systemic use of the information available to them [Azjen *et al.*, 1980]. Purchase decision can be viewed symbolically in terms of emotional responses, sensory pleasures, daydreams, or aesthetic considerations [Engel *et al.*, 1993]. From the perspective of marketing strategy,

creating purchase decision in the consumer means meeting target customers' needs and increasing perceived satisfaction [Porter, 1985]. Previous research has explained the multidimensional and context-dependent nature of perceived value for purchase decision [Parasuraman *et al.*, 1985; Zeithmal, 1988; Bolton *et al.*, 1991; Dodds *et al.*, 1991; Holbrook, 1994; Cronin *et al.*, 2000]. A purchase decision can be changed or modified with the circumstances of the person and/or consumption situation derived from the quality attributes of vendors. Literature reviews on consumer behavior [Engel *et al.*, 1993] concluded portraying purchase decision as a personal phenomenon, a situational phenomenon, a social phenomenon, and a perceived contextual phenomenon.

Market Segmentation

Market researchers defined international market segmentation as the methodical aspect of dividing the global market into several homogeneous groups with similar interests in a particular product or service category [Beckmen *et al.*, 1982]. Market segmentation derives from a determination of potential indicators that differentiate a certain group of consumers from the overall market. These indicators can be summarized into four major groups, Demographic segmentation, Geographic segmentation, Psychographic segmentation, and Benefit segmentation [Smith *et al.*, 1982; Keegan *et al.*, 1996]. Global market segmentation, that is, groups of consumers who share a small set of key characteristics or attributes and, consequently, an expectation for a product exists. There are innumerable ways of dividing the countries of the world into different regional markets. In effect, defining regional markets is a practice in clustering countries where, it is anticipated, both within cluster similarities and between cluster differences will be maximized [Keegan *et al.*, 1996].

Trust Disposition Attitude/ Personal Behavior

For nation or state wise segmentation, psychographic and geographic characteristics play a very important role. Investigation of clustered variation in purchasing behavior across nations has potential implications, since, on this basis, EC can allocate resources in different parts of the global economy [Anderson *et al.*, 1994]. So, in terms of market segmentation across nations, it is very important to look at the relationship between behavioral intent/trust disposition attitudes and quality expectations [Winsted, 1997; Donthu *et al.*, 1998; Mattila, 1999; Furrer *et al.*, 2000]. Attitude is one's enduring favorable or unfavorable evaluations, emotional feelings, or pro or con action tendencies [Beckman *et al.*, 1982]. Attitude is comprised of cognitive component, affective component, and conative component. Trust disposition attitude is dependent on experience, personality, and social values [Engel *et al.*, 1993]. Perceived Local Environmental Security/ Social-Institutional regulations, values

A society produces values, ideas, intentions, and speculations on human personality. This perceived psychological phenomenon depends on rules, regulations, relationships, culture, and tradition. Depending on quality factors and expectations, purchase decisions can be affected vividly by pressures from the social environment [Engel *et al.*, 1993]. Social value is a consistent response to environmental stimuli. Based on the literature reviews [Chase *et al.*, 1978; Kale *et al.*, 1987; Kogut *et al.*, 1988; Li, 1994; Kettinger *et al.*, 1995; Donthu *et al.*, 1998; Furrer *et al.*, 2000; Liu *et al.*, 2001], it is evident that those social values, which generate pre-trust disposition and security concern on customers' purchase behavior, are very important for determining quality factors of EC. In this perspective, this study focuses mainly on the impact of perceived local environmental security on customers' perceived trustworthiness toward purchase decisions.

3. Research Framework and Conceptual Models

Much of the cognitive and physical effort of the purchase occurs prior to actual purchase decision [Wilkie, 1994]. Several researches [Hofstede, 1980, 1991; Hall, 1984; Winsted 1997; Mattila, 1999; Furrer *et al.*, 2000] explained how country culture influences customers evaluation of complex services. Donthu and Yoo [1998] studied the effect of customers' cultural orientation on their service quality expectations. Therefore, Electronic-marketers should know how to influence customers favorably in the pre-purchase decision stage.

Based on both a literature review related to EC, marketing behavior, and cultural effect on customer's purchase decisions [Hofstede, 1980, 1991, 2001; Nakata *et al.*, 1996; Lee *et al.*, 1999; Mattila, 1999; Gefen *et al.*, 2000; George, 2000; Lee *et al.*, 2001; May *et al.*, 2002; Tsikriktsis, 2002; Balasubramanian *et al.*, 2003; Zhan *et al.*, 2003; Ribbink *et al.*, 2004; Chiu *et al.*, 2005; Schaupp *et al.*, 2005] and a survey conducted in a developing country, Bangladesh, this study proposes a general Quality-Purchase Interaction Model (QPI Model) and a perceived Trust Derivation Model (TD Model) for EC .

3.1. Research Question

Drawing from the previous sections, the research focuses on the following issues:

1. What perceived quality factors encourage or discourage consumers from taking an EC purchase decision?
2. How does perceived trustworthiness influence customers purchase decision?
3. What are the potential factors, derived from personal trust disposition attitudes and perceived from local environmental security of developing countries, that impact perceived trustworthiness?

3.2. Research Hypotheses

Perceived Customer Care (CC)

If consumers feel that they are being treated unfairly and feel uneasy about the web appearance, web information, web policy, exchange policy, and customer oriented service policy, they will more likely not take a purchase decision for the products or services from that website. Many researchers [Oliver *et al.*, 1989; Segars *et al.*, 1993] suggest that there is significant correlation between purchase decision and perceived customer care. Consumers often expend much effort on pre-purchase evaluation [Zhan *et al.*, 2003]. If a customer gets pre-purchase ideas or perceptions from the web information, web orientation, transaction, exchange and return policies, and customer service appearance and policy that his transaction from ordering to after sales service might not get proper care, his purchase decision might be influenced negatively [Bellizzi *et al.*, 1992; Baker *et al.*, 1994; Donovan *et al.*, 1994; Aberg *et al.*, 2000].

This current study views customer care as trustful and reliable offering, information handling, delivery, compensation, return policy, problem solving, and customer service policy. It expresses the customers' perceived feelings of how the website will take care of his physical transaction from pre-purchase to post-purchase and emotional belief and involvement [Cronbach *et al.*, 1955; Davis, 1989; Adams *et al.*, 1992; Barki *et al.*, 1994; McKeen *et al.*, 1994]. Consumer decision-making research suggests that perceived customer care feelings of the consumer positively affect the E-purchase decision [Szybillo *et al.*, 1974; Olshavsky *et al.*, 1979; Horton, 1984; Havlena *et al.*, 1986; Zeithaml, 1988; Bolton *et al.*, 1991; Swinyard, 1993; Wood *et al.*, 1996; Bansal *et al.*, 2000]. In this context, we propose a hypothesis as follows:

H₁: Perceived customer care has an effect on customers' purchase decision in EC.

Perceived Customer Value (CV)

The concept of perceived customer value is multidimensional and very complex. The understanding of values varies depending on the situation [Kahle *et al.*, 1996]. The most generally recognized definition of customer value appears to be the ratio of trade-off between quality and price perceived by customers [Monroe *et al.*, 1987]. An additional dimension related to product or service could be achieved by introducing the customer's perception of value as a mix of quality and price [Ho *et al.*, 1999]. Sweeney and Soutar [2001] suggested four dimensions of consumers' perceived value. These are:

1. Emotional Value: It comes from the feelings or affective states that a product creates.
2. Social Value: It is an enhancement of social self-concept developed from utility and from the product's ability.
3. Function Value (price/value for money): It is explained as price/value for money derived from the product due to the reduction of its perceived short-term and long-term costs.
4. Function Value (performance/quality): It is defined as the performance of quality derived from the perceived quality and expected performance of the product.

With the dimensions of the consumers' perceived value in mind, retailers formulate their retail value propositions accordingly. Customers are interested to know what kind of benefits/values they are getting from the products/services and intention or willingness to buy is affected by the perceived value [Leung *et al.*, 1998]. The emotional or affective aspect of decision-making theories [Schwarz *et al.*, 1988; Pham, 1998] presents evidence that perceived customer value can be used as a positive heuristic to infer overall quality and make a purchase decision. The preceding discussion implies that:

H₂: Perceived customer value has an effect on customers' purchase decision in EC.

Perceived Site Security (SS)

Based on previous research on EC quality factors demanded by potential customers [Alba *et al.*, 1997; Patterson *et al.*, 1997; Bellman *et al.*, 1999; Schaupp *et al.*, 2005], this current study visualizes site security as a potential indicator for purchase decisions as the authentication of the web information source, protection of disposed information, and perfection and guarantee of the web statements. It is the degree to which consumers perceive it safe to disclose personal and financial information during interaction with websites. Site security threat can be defined as a situation, condition, or incident with the potential to cause economic hardship to data or network resources in the form of destruction, non-protection, modification, denial of services and/or fraud, mismanagement, and abuse [Kalakota *et al.*, 1996]. It is one of the major concerns for a purchase decision [Mayer *et al.*, 1995; Kiely, 1997; Mardesich, 1999]. Many consumers are afraid of false information or are not sure about the web statements displayed and are reluctant to release payment card information to on-line merchants, fearing a loss of control over their accounts. Perceived site security is consumers' perception of the uncertainty of the displayed information, statement and policy of the website, and concomitant adverse consequences of buying a product or service [Dowling *et al.*, 1994]. Site security is identified as one of the most significant areas pursuing a successful purchase decision of EC [Ratnasinghem, 1998]. It deals with the general levels of security related to network, application, system

components of the internet, and perfection of the statements [Aldridge *et al.*, 1997]. Therefore, perceived site security influences intention to purchase on-line [Salisbury *et al.*, 1998; Ranganathan *et al.*, 2002]. Perceived site security is also correlated with perceived trustworthiness [Smith *et al.*, 1997]. The construct of perceived trustworthiness captures the level of trust a customer has in EC in the expectation that the web will act in the customer's best interest. When site security is perceived to be high, customers may express a high level of trust in EC. Higher perceived site security generally increases the perceived trustworthiness of using a service [Garbarino *et al.*, 1999]. Drawing from these arguments, we propose:

H_{3a}: Perceived site security has an effect on customers' purchase decision in EC.

H_{3b}: Perceived site security has an effect on customers' trustworthiness in EC.

Perceived Operational Security (OS)

This study defines the underlying constructs of perceived operational security as the transactional security, authentication and non-repudiation of operation, and functional risk. It is the degree to which consumers perceive it safe to disclose personal and financial information during transactions with websites. It refers to the perceived uncertainty of transaction and exchange from providing information to the web to receiving the product/service [Horton, 1976; Simpson *et al.*, 1993]. Like site security, operational security is also related to purchase decision and trustworthiness of the EC [Groth, 1995]. This study argues:

H_{4a}: Perceived operational security has an effect on customers' purchase decision in EC.

H_{4b}: Perceived operational security has an effect on customers' trustworthiness in EC.

Perceived Trustworthiness (T)

Trustworthiness is the perception of confidence in the web's reliability, credibility, and integrity [Be' langer *et al.*, 2002]. Purchase decision is greatly influenced by perceived trustworthiness on the web [Hosmer, 1995]. Trust is a very significant and important factor in the on-line environment, because the customer has few tangible and verifiable cues regarding the service-provider's capabilities and intentions [Urban *et al.*, 2000]. Trust can be viewed as a generalized expectance held by a customer that the word or action of another could be relied on [Rotter, 1967]. It is widely believed that perceived trustworthiness depends on credibility of EC [Mayer *et al.*, 1995; Jarvenpaa *et al.*, 1999]. Trusting becomes the crucial strategy for dealing with uncertain and uncontrollable information, statement, policy, and action [Sztompka, 1999]. Every customer attempts to evaluate trustworthiness of the web before committing to a business transaction. The authors argue that perceived trustworthiness might be a very important variable which initiates differences in perception of quality factors between customers of developed and developing countries.

Perceived trustworthiness is one of the most important driving forces for taking a purchase decision [May *et al.*, 2002]. Based on the literature reviews of purchase behavior and trustworthiness as a quality factor of EC [Heide *et al.*, 1995; Mai *et al.*, 1999; Ehrenman, 2000; Molla *et al.*, 2001; Ruyter *et al.*, 2001; Balasubramanian *et al.*, 2003], this current study proposes the argument:

H₅: Perceived trustworthiness has an effect on customer's purchase decision in EC.

Perceived Privacy (P)

Based on the survey data conducted in developed countries, several scholarly researchers reveal that privacy concern is one of the key reasons consumers do not make on-line purchases [Green *et al.*, 1998; George, 2000; Lee *et al.*, 2001; Balasubramanian *et al.*, 2003; Zhan *et al.*, 2003; Parasuraman *et al.*, 2005]. Many consumers have concern over potential misuse of personal information customers disclose during purchase [Hair *et al.*, 1995; Ranganathan *et al.*, 2002; Torkzadeh *et al.*, 2002; Brown *et al.*, 2004]. Privacy in EC is viewed as the willingness to share information over the Internet that allows for the conclusion of purchase [Be' langer *et al.*, 2002]. This study defines privacy as the extent to which customers can be assured that their personal information provided during interaction or transaction in the website will not be disclosed or shared with others or misused for any purpose. A study by Forrester Research revealed that two thirds of the potential customers are worried about protecting personal information on-line [Branscum, 2000]. Privacy could influence individual attitudes toward the Internet, but the extent to which each view actually does influence attitude is an arguable question at this time. Privacy risk reflects the degree to which consumers suffer a loss of privacy to information collected about them during on-line purchase [Jarvenpaa *et al.*, 1997; Parasuraman *et al.*, 2005]. So, perceived privacy is also related to perceived trustworthiness of the web. Trusting a web has a great influence on the perceived privacy feeling of the customers on web purchase [Korgaonkar *et al.*, 1999; Kemp, 2000]. Therefore, this study argues that:

H_{6a}: Perceived privacy has an effect on customers' purchase decision in EC.

H_{6b}: Perceived privacy has an effect on customers' trustworthiness in EC.

Organizational Profile (OP)

The background of a company can influence customers' belief about and attitudes toward new products manufactured/distributed by the company [Brown *et al.*, 1997]. This could be very important for EC because of the

absence of intrinsic product cues on a website with which customers can evaluate product quality. Strader and Shaw [1999] demonstrated that in EC, unless a seller's price is significantly lower than prices of a reputed seller, switching cost will inhibit the consumer from buying from an unknown website. This current study views organizational profile as background of the company, owner of the web, origin of the company, and company performance and goodwill. Marketing researchers show that organizational profile is significantly important for customers to trust a website and take a purchase decision [Szybillo et al., 1974; Havlena *et al.*, 1986; Wood *et al.*, 1996; Zeithaml *et al.*, 2000]. For EC, where trust plays a significant role, organization profile has great impact on customers' purchase decision and trustworthiness [Zhan *et al.*, 2003]. Therefore, this study makes the argument:

H_{7a}: Organizational profile has an effect on customers' purchase decision in EC.

H_{7b}: Organizational profile has an effect on customers' trustworthiness in EC.

Trust Disposition Attitude (TDA)/Personal Behavior

In a virtual market like EC, perceived trustworthiness is always influenced by behavioral intent or trust disposition attitude that is categorized and characterized by international market segmentation depending on financial and demographic orientation [Hofstede, 2001; Liu *et al.*, 2001]. Perceived trustworthiness is a psychological and behavioral attitude that is significantly influenced by intrinsic trust disposition characteristics. Trust disposition attitude/personal behavior can be classified into a global (attitudinal/ affective) component and a specific (situational/cognitive) component [Driscoll, 1978]. The global component corresponds to the personality-dependent view of trust disposition attitude/personal behavior that endows individuals with a general tendency to trust others or organizations or dealings or transactions [Rotter, 1967]. This study defines the construct of trust disposition attitude as general belief of an individual toward human beings and society. Trust disposition attitude is considered to endure across contexts and to be specifically relevant in ambiguous, unstructured situations [Johnson-George *et al.*, 1982]. Trust disposition attitude/personal behavior contributes to the explanation of variance in trust [Mayer *et al.*, 1995]. Actually trust disposition, a characteristic defined by the general term individualism [Hofstede, 1991], plays a significant role toward perceived trustworthiness [Balasubramanian *et al.*, 2003]. Therefore, this study draws the argument:

H₈: Trust disposition attitude of customers has an effect on perceived trustworthiness in EC.

Perceived Local Environmental Security (LES)

Perceived local environmental security is strongly based on experience from surroundings, society, culture, local values, and state-wise rules-regulations and affected by both extrinsic and intrinsic motivations [Davis *et al.*, 1992]. It is directly derived from general experience and perception of security from the society and attributed toward formation of trustworthiness. Customers with perceived high-uncertainty from the status of society/country environment would hesitate to choose an uncertain situation and avoid uncertainty through risk aversion [Nakata *et al.*, 1996]. Therefore, customers with perceived high-uncertainty have higher trust expectation compared with customers having low-uncertainty perceptions [Donthu *et al.*, 1998]. Actually, the importance of social/institutional structures that regulate economic operations increases in the absence of personal relationships between service providers and customers [Shapiro, 1987]. Such local structural assurances derive the perceived environmental security that ultimately contributes toward perceived trustworthiness in global a operation like EC. Therefore, this study assumes:

H₉: Perceived local environmental security of customers' has an effect on perceived trustworthiness in EC.

3.3. Conceptual Model

Based on the aforementioned arguments, this study proposes two structural equation models presented in Figure 1 and 2.

4. Research Design

This study is exploratory in that it tests ideas about what factors are important in deciding on-line purchase and in that it relies on primary data where the survey is conducted in a developing country like Bangladesh with a population of 150 million. The study is designed to test the proposed general QPI model and also the TD model to justify the QPI model.

4.1. Questionnaire Design

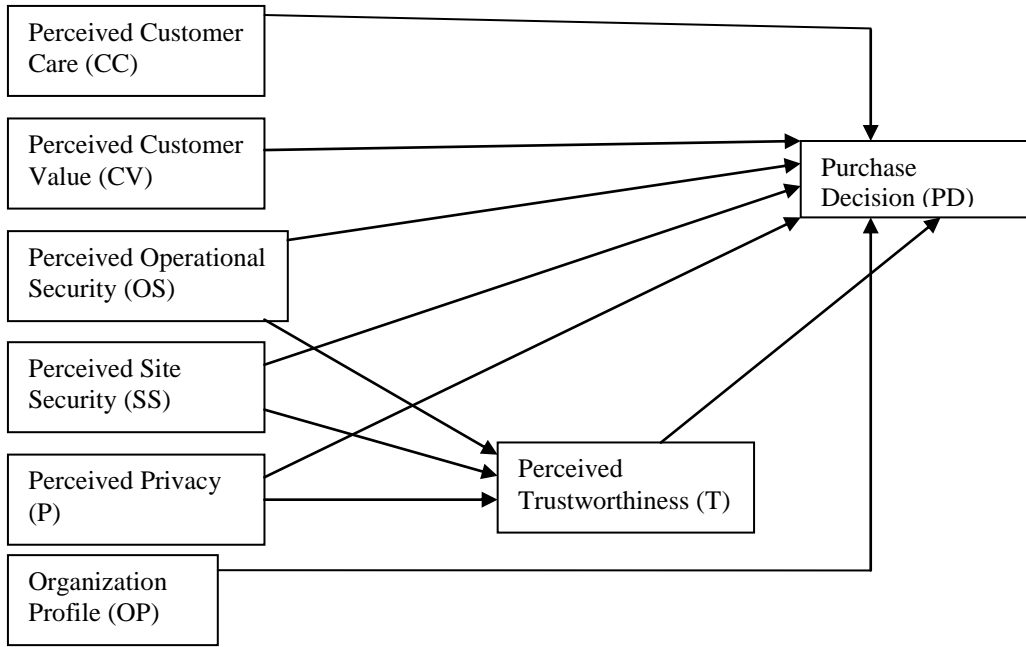


Figure 1: General Quality-Purchase Interaction Model for EC (QPI Model)

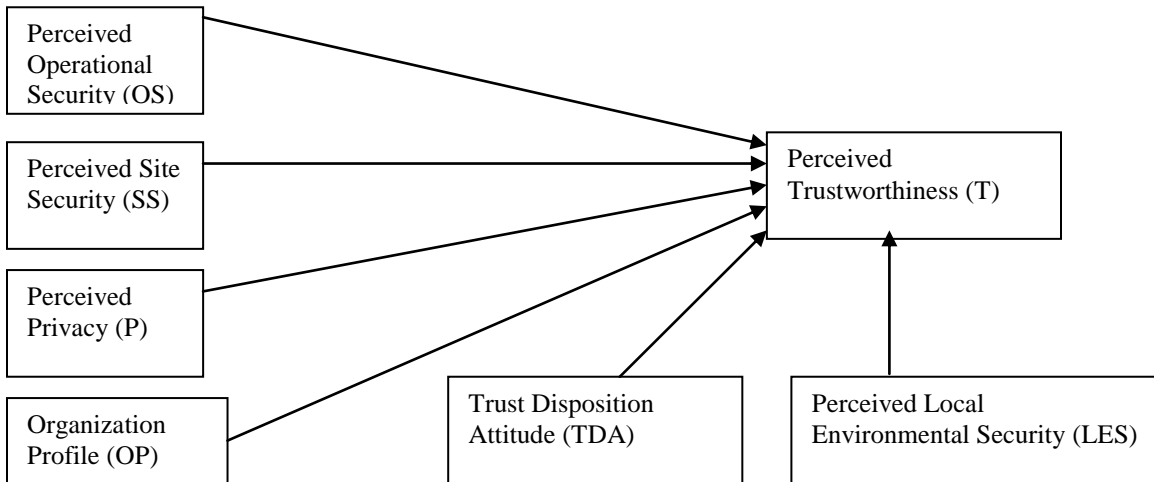


Figure 2: Trust Derivation Model (TD Model)

In order to justify and validate the conceptual models presented in Figures 1 and 2, a field survey was conducted in Bangladesh among 700 students (both full-time and part-time). A total of 560 respondents answered and returned the questionnaires. Most of the respondents are studying in two of the leading universities in Bangladesh (one is a public university and the other a private university). The percentages of male and female students are not uniformly distributed. In Bangladesh, there are two reasons for this: 1) In higher education, the percentage of male students is generally higher than that of female students; 2) Mainly male persons/students are the purchasers of EC. Students were taken as the sample for two reasons: 1) Since Bangladesh is a developing country, most of the general public is not yet aware of the Internet and EC. On the other hand, students have more access to the Internet than other consumers and thus are more likely to be on-line purchasers, 2) Selection of students as the sample of EC is also supported by some researchers [Loiacono et al., 2000; Cai et al., 2003; Collier et al., 2006]. The survey was conducted during class time with the cooperation of the respective class teacher. The respondents included students who already have purchase experience and also those who do not have past on-line purchase experience but browse

the Internet frequently to purchase products/services via on-line (more likely to purchase/prospective purchaser). So after preliminary screening among the received questionnaires, a total of 370 were selected in the final analysis.

The questionnaire consisted of 56 questions among which 11 were demographic information related questions and 45 were model-constructs related questions. A five point likert scale was used in this study. Six measurement items were used according to a 5-point likert scale ranging from 1 (never) to 5 (always) to capture the construct purchase decision. Eleven items to explain perceived customer care, six items to capture perceived customer value, five measurement instruments to identify the construct perceived site security, two items to understand perceived operational security, three items to identify perceived trustworthiness, three items to define perceived privacy, three items to portrait organizational profile, three items to define the construct perceived trust disposition attitude, and three items to explain perceived local environmental security were used according to a 5-point likert scale ranging from 1(not at all important) to 5 (very important). These measurement items/variables were chosen to define the aforementioned constructs based on the summary concepts derived from extensive review of scholarly articles on EC quality factors, purchase behavior, cultural effect, and international market segmentation [Szybillo *et al.*, 1974; Horton, 1976, 1984; Olshavsky *et al.*, 1979; Hofstede, 1980, 1991, 2001; Havlena *et al.*, 1986; Schwarz *et al.*, 1988; Zeithaml, 1988; Bolton *et al.*, 1991; Davis *et al.*, 1992; Simpson *et al.*, 1993; Swinyard, 1993; Groth, 1995; Hair *et al.*, 1995;; Heide *et al.*, 1995; Mayer *et al.*, 1995; Jarvenpaa *et al.*, 1997; Nakata *et al.*, 1996; Wood *et al.*, 1996; Kiely, 1997; Smith *et al.*, 1997; Donthu *et al.*, 1998; Leung *et al.*, 1998; Pham, 1998; Salisbury *et al.*, 1998; Ho *et al.*, 1999; Garbarino *et al.*, 1999; Lee *et al.*, 1999; Mai *et al.*, 1999; Mardesich, 1999; Mattila, 1999; Bansal *et al.*, 2000; Ehrenman, 2000; Gefen *et al.*, 2000; George, 2000; Kemp, 2000; Zeithaml *et al.*, 2000; Liu *et al.*, 2001; Ruyter *et al.*, 2001; Sweeney *et al.*, 2001; May *et al.*, 2002; Ranganathan *et al.*, 2002; Torkzadeh *et al.*, 2002; Brown *et al.*, 2004 ; Ribbink *et al.*, 2004; Chiu *et al.*, 2005; Parasuraman *et al.*, 2005; Schaupp *et al.*, 2005].

5. Data Analysis

After conducting preliminary data analysis, descriptive statistics of demographic information are shown in Table 1. We next conducted Exploratory Factor Analysis (EFA) on the preliminary 45 items using principal component analysis as the extraction method and varimax rotation as the rotation method. We used the breaks-in

Table 1: Descriptive statistics of demographic information

Variables	Category	Percentage
Gender	Male	85.5
	Female	14.5
Level of Education	elementary	0
	high school	0
	college degree	16.5
	graduate degree	83.5
Age in Years	20-30	75.6
	31-40	17.0
	41-50	6.8
	51 or older	.6
Hours on-line/day	0	0
	less than 1	37.8
	1-2	26.5
	2-3	16.3
	3-4	7.4
	4-5	1.5
First start Internet	more than 5	10.5
	recently	7.1
	greater than 6 months less than a year	4.0
	more than one year but less than 3 years	19.1
Purchase frequency during last one year	more than 3 years ago	69.8
	none	43.4
	1	21.7
	2	23.6
	3	2.5
	4	3.2

	5	1.6
	more than 5	4.1
Web site visit frequency	daily	20.7
	weekly	26.0
	monthly	35.5
	other	17.8
Rate as an Internet user	expert	24.1
	good	56.3
	beginner	19.5

Table 2: Factor loadings for EFA

	Component									
	1	2	3	4	5	6	7	8	9(TDA)	10(LES)
company legal policy										.705
consumers association										.689
important to trust							.816			
important web							.624			
important who owns						.673				
important protect source		.530								
important which org.						.681				
important about us page						.645				
important lowest price				.712						
important quality of				.714						
important quality of				.669						
important return policy				.750						
important prot.		.577								
important web statement		.693								
important site security		.549								
important webs		.618								
important information			.527							
important privacy policy			.693							
important how web use			.613							
Recommend online					.882					
Purchase frequency					.765					
overall satisfaction					.812					
Purchase intention					.678					
Negative exp. online					.749					
important declaration								.615		
important fin.								.659		
important deliver in time	.668									
important truth offering	.818									
important take care	.748									
important returning	.761									
important take care of	.655									
important compensate	.773									
important available	.729									
opinion human being									.896	
opinion human being									.820	
gov. laws protect										.613
general people can be									.796	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

-eigen values criterion (>1) to determine the number of factors to retain. We then conducted a series of iteration, each involving elimination of items with low loadings (<.40) on all factors or high cross loadings on more than one factor, followed by factor analysis of the remaining item. The results of EFA indicate that the factor structures of the

item reflected approximately the same factors as originally proposed (some items were removed having a loading factor less than .40 or cross-loaded on more than one component). This iterative process resulted in the following constructs with 37 items. According to EFA as presented in Table 2, five items capture the construct PD, seven items capture the construct CC, four items capture the construct CV, five items capture the construct SS, two items capture the construct OS, two items capture the construct T, three items capture the construct OP, three items capture the construct P, three items capture the construct TDA, and three items capture the construct LES.

Considering the exploratory nature of the study, a sample size of approximately 370 is sufficient to yield statistically valid results for multiple regression analysis and other statistical techniques employed in this study (no. of respondents: no. of variables is almost 10:1) [Steven, 1996, Hair *et al.*, 1998]. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated for a test of fitness. Kaiser [1974] argued that if the KMO is less than 0.5, factor analysis is inappropriate. The KMO value of this research is 0.829. This clearly suggests the acceptability of factor analysis. The Bartlett Sphericity test is also significant at the level of 0.000 (Table 3).

Table 3: KMO and Bartlett Sphericity test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.829
Bartlett's Test of Sphericity	Approx. Chi-Square	6078.404
	df	703
	Sig.	.000

Reliability and Validity Assessment

The reliability scores (measured by coefficient alpha) for PD, CC, CV, SS, OS, T, OP, P, TDA, and LES are presented in Table 4, which suggests an acceptable internal consistency among the items in each dimension and also exceeded the conventional minimum of 0.70 [Nunnally *et al.*, 1994]. To test construct validity of factors of two models, a Confirmatory Factor Analysis (CFA) was conducted using the maximum likelihood procedure (loading of CFA is shown in Table 5).

Table 4: Descriptive statistics and construct reliabilities

	Mean	Std. Deviation	Cronbach's alpha	% Variance explained
Perceived Customer Care (CC)	4.3744	.71006	.930	75.8
Perceived Site Security (SS)	4.49163	.653426	.777	72.6
Perceived Privacy (P)	3.7468	.75386	.734	72.1
Perceived Customer Value (CV)	4.3722	.65148	.864	68.8
Organization Profile (OP)	3.6432	.80585	.719	77.0
Perceived Trustworthiness (T)	4.4736	.62698	.701	52.4
Perceived Operational Security (OS)	4.5044	.65343	.723	62.4
Trust Disposition Attitude (TDA)	3.6629	.85536	.756	62.3
Perceived Local Environmental Security (LES)	3.7518	1.05530	.877	66.3
Purchase Decision (PD)	3.2687	.95780	.883	62.6

The CFA results suggest that the scale items are reflective indicators of their corresponding latent constructs [Chau, 1977; Segars *et al.*, 1993]. To reflect latent constructs by respective scale items is a very important issue [Diamantopoulos *et al.*, 2001; Jarvis *et al.*, 2003]. It is a challenging issue to examine convergent and discriminant validity for construct validity [Churchill, 1979]. In this data analysis, the average variances extracted (AVE) for each factor and its measures all exceeded 0.50; thus, convergent validity is achieved [Fornell *et al.*, 1981]. Discrimination is also indicated in this analysis as the largest shared variance between these factors that is lower than the least AVE value for each factor and its measures [Espinoza, 1999]. To investigate the validity of the general QPI model and TD model, we calculated composite scores for all latent constructs by summing their respective items. These composite scores are highly correlated with the factor scores obtained by the more complex least squares and regression methods [Johnson *et al.*, 1992].

Table 5: Factor loading for CFA

Item	Loading	t value
<i>Perceived Customer Care (CC)</i>		
important deliver in time	.689	15.56
important truth offering	.821	23.19
important take care customer info	.749	20.08
important returning items easily	.773	21.12
important take care of problems	.667	15.02
important compensate for porbs	.764	21.01
important available customer service	.719	17.39
<i>Perceived Site Security (SS)</i>		
important protect source	.552	12.95
important prot. unauthorized use	.586	13.86
important web statement	.703	17.24
important site security policy	.564	13.43
important webs address/contact	.627	14.89
<i>Perceived Privacy (P)</i>		
important information sharing policy	.545	12.46
important privacy policy	.687	15.54
important how web use your info	.633	15.02
<i>Perceived Customer Value (CV)</i>		
important lowest price	.735	19.67
important quality of prod	.749	20.07
important quality of service	.687	15.55
important return policy	.772	21.09
<i>Purchase Decision (PD)</i>		
Recommend online brokers	.920	26.18
Purchase frequency	.747	20.01
overall satisfaction	.845	24.87
Purchase intention	.685	15.46
Negative exp. online purchase	.791	22.15
<i>Organization Profile (OP)</i>		
important who owns web	.656	15.12
important which org. finan. support	.664	15.23
important about us page	.687	15.54
<i>Perceived Trustworthiness (T)</i>		
important to trust	.856	25.21
important web guarantee	.641	15.09
<i>Perceived Operational Security (OS)</i>		
important declaration transaction secure	.625	14.88
important fin. transaction security policy	.681	15.50
<i>Trust Disposition Attitude (TDA)</i>		
opinion human being honest	.906	25.98
opinion human being helpful	.843	24.80
general people can be trusted	.777	21.18
<i>Perceived Local Environmental Security (LES)</i>		
company legal policy protect cheating	.730	19.88
consumers association protect cheating	.691	15.87
gov. laws protect cheating	.654	15.10

Note: CFA-Confirmatory factor analysis, loading< .40 are not shown, Goodness-of-fit-statistics are not shown, since it is shown in Table 7 (SEM analysis)

We conducted several multiple linear regression analysis using PD as a dependent variable and CC, CV, SS, OS, T, OP, P as independent variables for the QPI model, and T as dependent variable and SS, OS, P, TDA, LES, OP as independent variables for the TD model. We also verified a multicollinearity problem by investigating Variance Inflation Factor (VIF) values that are ranging from 1.19 to 1.97 (much less than 10). These values imply that there is no severe multicollinearity [Netter *et al.*, 1996; Allison, 1999]. We further examined our general QPI model using the Structural Equation Modeling (SEM) technique. The SEM technique allows researchers to analyze a set of latent constructs like independent and dependent variables in regression analysis [Segars *et al.*, 1993] with a comprehensive mean assessing and improving theoretical models [Karahanna *et al.*, 1999].

5.1. Results

The mean scores of perceived quality factors expected with relative priority for purchase decision rank as follows (Table 4): OS (1), SS (2), T (3), CC (4), CV (5), P (6), OP (7) on the 5-point 'very important' to 'not at all important' scale. Results of regression analyses of the two models are shown in Table 6A and 6B.

Table 6A: Regression results for general QPI model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.689(a)	.475	.462	.51005

a Predictors: (Constant), OrgProfile, Operasecurity, Trust, Privacy, Custmval, Customcare, Sitesecurity

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	-.443	.205	-2.008	.047
	Customcare	.254	.112	2.094	.037
	Sitesecurity	.311	.128	2.434	.016
	Privacy	-.087	.103	-.839	.403
	Custmval	.048	.084	-2.008	.047
	Trust	.319	.095	3.351	.002
	Operasecurity	.169	.105	2.459	.021
	OrgProfile	-.102	.075	-1.358	.176

a Dependent Variable: Pur_des

Table 6B: Regression results for TD model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.659(a)	.4343	.431	.46821

a Predictors: (Constant), Environment, Attitude, Privacy, Operasecurity, Sitesecurity, OrgProfile

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	1.819	.289	6.245	.000
	Sitesecurity	.323	.074	4.435	.000
	Privacy	-.024	.063	-.411	.675
	Operasecurity	.117	.064	1.965	.049
	Attitude	.103	.045	2.394	.014
	Environment	.088	.035	2.286	.021
	OrgProfile	.008	.046	.051	.975

a Dependent Variable: Trust

Structural Equation Model (SEM) Testing:

Since perceived trustworthiness, the dependent variable of TD model is used as an independent and also as a mediator variable in QPI model and since regression analysis considers all the independent variables simultaneously to explain dependent variables, QPI model is further analyzed by SEM. Our SEM analyses using the maximum likelihood procedure of LISREL 8.72 also reveal the same type of results as we found from regression analysis. There is no single recommended fit measure for the structural equation model. Different authors [Chau 1997; Segars *et al.*, 1993] suggested different measures in literatures. Recommended values in these literatures and our findings are shown in Table 7.

Table 7: Fit Measures from SEM Analyses

Fit Measures	Recommended Values	QPI Model
Chi-square (χ^2)	$p \geq 0.05$	376.12 (p=.00)
χ^2 /Degree of freedom (DF)	≤ 3.0	2.35
Root Mean Square Residual (RMR)	≤ 0.05	0.048
Comparative Fit Index (CFI)	$\geq .90$	0.94
Goodness of Fit Index (GFI)	$\geq .90$	0.92
Adjusted Goodness of Fit Index (AGFI)	$\geq .80$	0.87
Normed Fit Index (NFI)	$\geq .90$	0.90
Non-Normed Fit Index (NNFI)	$\geq .90$	0.92
Incremental Fit Index (IFI)	$\geq .90$	0.93
Relative Fit Index (RFI)	$\geq .80$	0.91

5.2. Discussions

This result in Table 4 indicates that OS, SS, and T play the most important role for on-line purchase decision for the consumers in Bangladesh. CC and CV play the moderate role, whereas privacy and OP are the less important factors on purchase decision behavior. From the regression analyses in Table 6A and 6B, we find some exclusive results. We see that organizational profile (OP) has no significant relationship with purchase decision (PD) and trustworthiness. This is quite expected as customers of a developing country like Bangladesh often are not very much familiar with the name of on-line vendors and also cannot get proper information about them. As a result, customers do not give any importance to the unfamiliar information about the organizational profile of the vendors for taking purchase decision and developing trustworthiness. The most interesting feature is that perceived privacy is not a significant criterion for taking purchase decision and developing perceived trustworthiness. This is a completely opposite opinion of previous research mostly conducted on customers of developed countries [Byford, 1998; Bellman *et al.*, 1999; Lee *et al.*, 1999; Branscum, 2000; George, 2000; Lee *et al.*, 2001; Balasubramanian *et al.*, 2003; Corbitt *et al.*, 2003; Corritore *et al.*, 2003; Vehovar, 2003; Zhan *et al.*, 2003; Ribbink, 2004; Parasuraman *et al.*, 2005; Schaupp, 2005]. This result is surprising in a general sense, but not unexpected in a specific sense. Customers of a developing country are not concerned enough about privacy which is a higher degree of motivation. Firstly, their culture does not give importance to privacy in day-to-day life and secondly, they are so concerned about security related matters that they do not intend to give priority to the privacy matter. Customers of developing countries are always afraid of the abuse of rules and regulations from government, domestic markets, and from any financial contracts [Vehovar, 2003, Klapper *et al.*, 2005]. Therefore, they reveal priority to trustworthiness [Efendioglu, 2005; Kamel, 2005]. This less privacy concern, and more security and trust concern attitude, is also supported from the research work of Vasja Vehovar [2003], where he found that less advanced countries in Europe are less concerned about privacy and more concerned about security and trust. All other hypotheses are acceptable, that is, CC, CV, OS, SS, and T are significant quality factors for purchase decision and OS, SS have significant effect on perceived trustworthiness. To give an insight into why this general QPI model is different for Bangladesh, a developing country, we investigated the second model, i.e., TD model. Here we found from Table 6B that there are significant relations between perceived trustworthiness as a dependent variable and OS, SS, TDA, and LES as independent variables. This model also shows that privacy and organization profile have no significant effect on perceived trustworthiness. But it explicitly shows that TDA and LES have significant effect on perceived trustworthiness which can explain the differences in model structures between developed and developing countries. Since TDA and LES variables for customers of Bangladesh have a significant effect on perceived trustworthiness, and perceived trustworthiness has a significant effect on purchase decision, we conclude that purchase decision should be different for different countries depending on TDA and LES.

A Chi-square statistic, presented in Table 7, indicates that our model does not fit the data accurately. But Chi-square is not a very good fit index in practice under many situations because it is affected by the following factors (1) sample size: larger samples produce larger chi-squares that are more likely to be significant (Type I error). Small samples may be too likely to accept poor models (Type II error). Therefore, it is difficult to get a non-significant chi-square when sample sizes are much over 200 or so [Tanaka, 1993; Maruyama, 1998]. The root mean square error of approximation (RMSEA) for QPI model is quite good (.080) [Browne *et al.*, 1993]. Other fit measures like, CFI, GFI, AGFI, RMR, NFI, NNFI, IFI, and RFI indicate that the model fit compares reasonably with the literature [Churchill, 1979; Segars *et al.*, 1993; Chau, 1997]. R² for QPI model is 480. Path coefficients for different hypotheses are shown in the Table 8 for QPI Model

Table 8: Path Coefficients for General QPI Model

Hypothesized relationships	Path coefficients	P value	conclusion
H ₁ : CC → PD	.218	.035	Acceptable
H ₂ : CV → PD	.052	.038	Acceptable
H _{3a} : SS → PD	.320	.026	Acceptable
H _{3b} : SS → T	.349	.000	Acceptable
H _{4a} : OS → PD	.150	.001	Acceptable
H _{4b} : OS → T	.168	.040	Acceptable
H ₅ : T → PD	.342	.001	Acceptable
H _{6a} : P → PD	-.084	.618	Not Acceptable
H _{6b} : P → T	-.082	.12	Not Acceptable
H ₇ : OP → PD	-.09	.174	Not Acceptable

Refined Models

Our refined QPI model based on the linear regression and SEM analyses and TD model based on the linear regression results for a less developing country like Bangladesh are shown in Figure 3 and Figure 4.

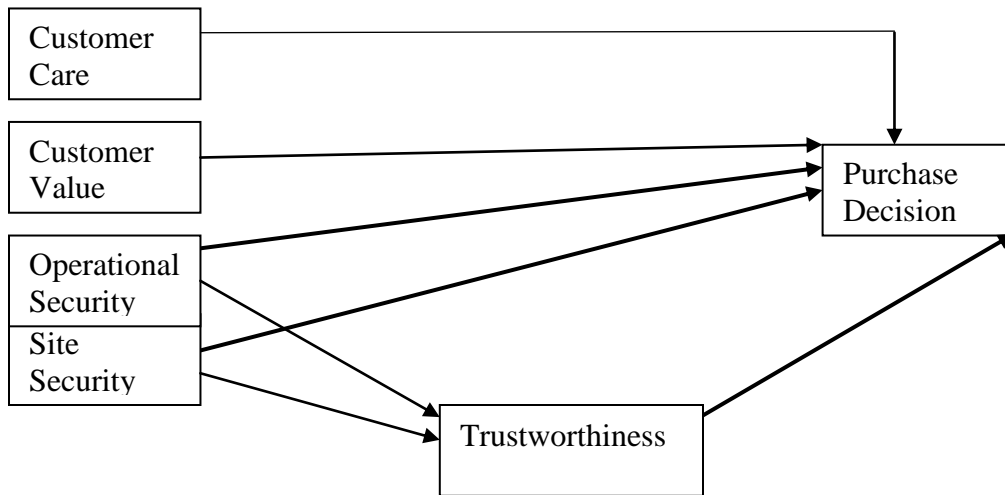


Figure 3: Quality-Purchase Interaction Model (QPI Model) of EC for developing countries (thick line indicates significant effect of OS, SS, and T on PD and thin line indicates moderate effect of CC and CV on PD)

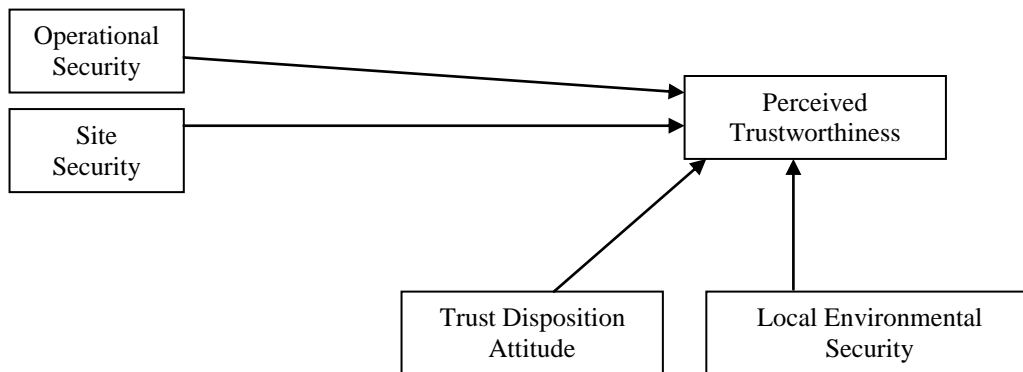


Figure 4: Trust Derivation Model (TD Model) of EC for developing countries

6. Conclusion

Our refined QPI model for developing countries indicates that on-line purchase decision is significantly affected by perceived customer care, perceived customer value, perceived operational security, perceived site security, and perceived trustworthiness. Our TD model for developing countries indicates that perceived trustworthiness toward on-line purchase is significantly affected by trust disposition attitude, perceived local environmental security, perceived operational security, and perceived site security of the web. Trust disposition attitude and perceived local environmental security are the attributes derived from personal behavioral intention, country culture, and social values. At the same time, privacy is not a significant factor for purchase decision whereas for developed countries, privacy plays a very significant role for on-line purchase decision. Table 4 for mean results of various perceived quality factors expected with relative priority, and effects of trust disposition attitude and perceived local environmental security explain why a refined QPI model is essential for developing countries and why market segmentation is inevitable for the globalization of EC. The two refined models from our study imply that:

1. Exclusion of perceived privacy in a refined QPI model, moderate effect of perceived customer care and perceived customer value, and more significant effect of perceived operational security, perceived site security, and perceived trustworthiness for the customers of Bangladesh have important implications. But the most important implication of this refined model is to understand that importance or necessity of perceived quality factors for on-line purchase decision is not unique for the global market, so the QPI model should not be unique. It will vary depending on potential market segmentation.
2. Important perceived quality factors — perceived trustworthiness in on-line purchase is significantly dependent on perceived quality factors like perceived operational security, perceived site security, and also customers cultural, personal, attitudinal, and local perceived environmental security.

The authors believe that the results of this study will significantly contribute to both academia and practice. In respect to academia, this study first explores the behavioral intention and perceived quality priority expectation for on-line purchase decision in the context of developing countries' customers. Therefore, the results could open a new window for researchers interested in studying further the phenomena of globalization of EC and the necessity of market segmentation for the future expansion of EC. Although the Internet enables the globalization of services [Yip, 2000], the results show personal behavioral attitudes and experiences from country systems-culture influence what customers expect for web purchase.

From the practitioners' perspective, the findings provide directions for EC quality strategies across different nations/cultures. Those strategies explain the aspects of EC quality requirements that are globally important with equal significance and those that have to be classified with special attention when dealing with customers from different clustered countries.

6.1. Limitation and Future Research Direction

The study is subject to several limitations:

1. The study tried to capture the customers of developing countries. In this regard, the survey was conducted in Bangladesh. To validate the models, the survey should be conducted in several developing countries.
2. The research only considered two variables to explain the differences in requirement for quality factors of EC between developed countries and developing countries: personal trust disposition attitude/behavioral intent and perceived local environmental security. More attributes from country culture like education, age, income level, general buying pattern, and on-line buying experience could be incorporated in TD model for generalization [Yip, 2000; Tsikriktsis, 2002].
3. The two constructs — purchase intention and actual purchase behavior — were added here to form purchase decision, because a very small percentage of people in Bangladesh are aware of EC purchase. So, if we again differentiate them according to those two constructs, sample size would not be justified.

4. Selecting students as the sample for this study is also a limitation. Real EC customers could be conducted for this empirical study

The basic objective of this study was to investigate whether there is any difference between customers of developed countries and developing countries in terms of perceived quality factors as expected with relative priority for on-line purchase decision and if there are any, how these differences can be explained. The authors believe that the results of this research provide deep insight into both of the problems and can be treated as the first pace for required market segmentation of globalized EC. Now vigorous research in this context is needed to generalize the QPI and TD models for segmented markets.

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