

## ***FACTORS AND MODELS ANALYSIS OF CONSUMER TRUST ON ECOMMERCE***

***Deivison Pinheiro Franco\****

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### **ABSTRACT**

Consumer trust is a popular issue within the field of e-commerce. The study summarizes the academic papers on consumer trust, and presents the internal and external factors that affect this trust. The internal factors include the consumer characteristics, website characteristics, and firm characteristics. The external factors include policy and technology. The research also presents a model which shows that the trust-building process within e-commerce is cyclical.

Keywords: Consumer Trust. Analysis of Consumer Trust. Factors and Models. E-commerce.

### **RESUMO**

*A confiança do consumidor é uma questão popular de e-commerce. O estudo resume os trabalhos acadêmicos, e apresenta os fatores internos e fatores externos sobre a confiança do consumidor. Os fatores internos incluem as características do consumidor, características do site, e características da empresa. Os fatores externos incluem política e tecnologia. A pesquisa também apresenta um modelo que o processo de construção de confiança é ciclo em e-commerce.*

***Palavras-chave:*** Confiança do Consumidor. Análise da Confiança do Consumidor. ***Fatores e Modelos. Comércio Eletrônico.***

### **1 INTRODUCTION**

The development of the Internet has led to changes in terms of physical companies becoming virtual. Related costs are dramatically decreased, since there is no longer a need for physical premises, but the relationship between consumer and vendor becomes more complex. The consumer cannot touch and check the goods prior to purchase – they must trust the images shown on the Internet. What makes consumers trust vendors? This topic has been the subject of several studies in different fields,

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\* Mestrando do Programa de Pós-Graduação em Ciência da Computação da Universidade Federal do Pará (PPGCC-UFPa), com linha de pesquisa em Segurança Computacional. Especialista em Ciências Forenses pelo Centro Universitário do Pará (CESUPA), Especialista em Suporte a Redes de Computadores e Tecnologias Internet e em Redes de Computadores pela Universidade Federal do Pará (UFPa) e Graduado em Processamento de Dados pela Universidade da Amazônia (Unama) (deivison.pfranco@gmail.com).

including psychology (ROTTER, 1967; LEWICKI & BUNKER, 1995), sociology (ROUSSEAU; SITKIN; BURT, & CAMERER, 1998; COOK et al., 2005), and economics (ROUSSEAU et al., 1998; WILLIAMSON, 1975, 1993; ZAHEER; MCEVILY & PERRONE, 1998; PUČĚTAITĚ & LÄMSÄ, 2008).

The economics perspective is important for practice. Many researchers have studied the factors and model of trust, but have focused on only one topic. As example, scholars have analysed technology factors (JUPRI et al., 2009; PATTON & JOSANG, 2004), role factors (FLAVIÁN; GUINALÍU & GURREA, 2006A; GRABNER-KRAEUTER, 2002; CHEN & DHILLON, 2003), the initial trust stage (MCKNIGHT; CUMMINGS & CHERVANY, 1998; MCKNIGHT & CHERVANY, 2001; LEE & TURBAN, 2001A), and the final trust stage (KIM; FERRIN & RAO, 2008) in this scenario.

This study contributes to the field in two respects. First, the study analyses all of the factors of trust. Second, it establishes a conceptual model.

The paper is organized into three sections. It begins by exploring the concept and topics of trust from various dimensions, and it then analyses the factors and models identified in the literature. Finally, it highlights the comprehensive factors and synthesizes a model of consumer trust formation.

## 2 THE CONCEPT OF TRUST

Numerous studies have emphasized that trust is central to interpersonal and commercial relationships (ACHROL, 1991; MORGAN & HUNT, 1994; PAPADOPOULOU; ANDREOU; KANELIS & MARTAKOS, 2001; MCKNIGHT & CHERVANY, 2001). We currently know much more about what trust does than what trust is (CASTALDO; PREMAZZI & ZERBINI, 2010). Different disciplines, including psychology, sociology and economics, define trust from their own unique perspectives (LEWICKI & BUNKER, 1995; MCKNIGHT & CHERVANY, 2001; BEATTY; REAY, DICK & MILLER, 2011).

Trust was first outlined by Rotter (1967) from the psychological perspective. Psychologists see trust as a personal trait (LEWICKI & BUNKER, 1995). Psychologists have concentrated individual differences in trust and the conjoint differences in life and human relationships. There are three facets of trust, including cognitive, emotive and behavioural, and two forms of trust – relational and generalized (BEATTY et al., 2011).

Lewis and Weigert (1985) studied trust from the sociological perspective. Sociologists view trust as a willingness to be vulnerable (ROUSSEAU et al., 1998; COOK et al., 2005), and discuss the relationship between trustee and trustor. They also analyse trust in relation to social values and benefits.

The economic perspective of trust includes two domains: organization (ZUCKER, 1986; ROUSSEAU et al., 1998; WILLIAMSON, 1975, 1993; ZAHEER et al., 1998; PUČĚTAITĚ & LÄMSÄ, 2008) and marketing (ANDERSON & WEITZ, 1989; CHOI; ELDOMIATY & KIM, 2007; DWYER; SCHURR & OH, 1987; GANESAN, 1994; GUSTAFSSON, 2005; MOORMAN; DESHPANDE & ZALTMAN, 1993; MOORMAN; ZALTMAN & DESHPANDE, 1992). Organizational trust has been defined with reference to three perspectives: organizational function, a transaction-cost economics framework, and institutional trust (BEATTY et al., 2011).

The issues about the organizational trust are related to inter-organizational trust and intra-organizational trust. Castaldo et al. (2010) analysed the concept of trust in terms of the marketing relationship. They suggested that the definition of trust can be considered from five facets: expectation, subject, future actions, positive results, and perceived risk and vulnerability. In brief, they define trust according the context informed. The definition of the trust has also been seen in terms of an economic-choice mechanism (LEWICKI & BUNKER, 1995).

Thus, trust as addressed in different fields can be summarized as follows:

- Psychology: Cognitive, emotive, behavioural.
- Sociology: Trustor, trustee.
- Economics: Organization (inter-organization, intra-organization), marketing (expectation, subject, future action).

Researchers have suggested that trust is of the same importance for e-commerce as for traditional transactions (BA; WHINSTON & ZHANG, 1999; HOFFMAN; NOVAK & PERALTA, 1999). There are two facets of online consumer trust (BEATTY ET AL., 2011): generalized trust is seen to influence the degree to which the consumer is willing to extend trust to a new website (GRABNER-KRAEUTER, 2002; CHEN & DHILLON, 2003; FLAVIÁN; GUINALÍU & GURREA, 2006B), while institutional trust relates to trust in the Internet itself, including technology, transactions, and security (PATTON & JOSANG, 2004; AL-DWAIRI & KAMALA, 2009).

Thus, the concept of trust is diverse because it involves the different disciplines of psychology, sociology and economics. With respect to economics in particular, there are several different research aspects in relation to trust.

### 3 TRUST FACTORS

Kee and Knox (1970) highlighted problems with defining and conceptualizing trust and suspicion. They analysed the definitions of these concepts in terms of game theory, and found that the two independent factors that affect trust and suspicion are dispositional factors (motivational orientation, personality, attitudes) and situational factors (incentive, power, communication). McKnight et al. (1998) explored early trust levels, with a focus on the cognitive view. They found that the factors which influence this environment should be the institution-based trust (structural assurance belief, situational normality belief) and disposition to trust (trust stance, faith in humanity).

Sitkin and Roth (1993) explained the determinations of trust and distrust using a legalistic mechanism. They suggested that legalistic responses have a greater or lesser effect on trust depending on expectations. The factors involved in this situation are formal standard policies and procedures, institutionally acceptable remedies, regulatory requirements, legal implications, and legalistic rhetoric. Grabner-Kraeuter (2002) analysed the diffusion and acceptance of e-commerce from consumer trust, and the result was uncertainty theory, which consists of system-dependent and transaction-specific uncertainty. Grabner-Kraeuter (2002) also presented three policies that increase trust from the agency-theoretical perspective: information policies, guarantee policies and reputation policies.

Chen and Dhillon (2003) considered what constitutes and develops consumer trust in Internet vendors. They classified trust according to the consumer (attitude toward online shopping, subjective norm, behavioural control, past purchase behaviour), the firm (number of years in business, reputation, brand recognition, offline presence), the website (likeability, functionality, usability, efficiency, reliability, portability, trusting infrastructure), the interaction (service quality, customer satisfaction, length of relationship, courtship) from the Internet-vendor perspective. A path model was provided to describe how the factors influence competence, integrity, and benevolence, and develop consumer trust. However, the model did not consider policy effects.

In fact, there are many aspects that affect consumer trust, such as technology, and the social, financial and legal infrastructures. Patton and Josang (2004) analysed the factors of trust from different

technology aspects: web interface, privacy strategies, self-regulation and trustmark seals, security strategies, mathematical trust models, payment intermediaries and insurance providers, reputation systems, and alternative dispute resolution. However, their study only gave details and resolutions; it did not analyse the effects of the factors.

Beatty et al. (2011) summarized 28 primary research reports to present 18 factors, and analysed the positive and negative relationships between these factors in order to provide a theoretical framework for e-commerce trust. The factors with a positive relationship include trust, usefulness, use, ease of use and risk. The factors with a negative relationship include trust, integrity, competence, risk, use, usefulness, benevolence, ease of use, cognitive enjoyment, reputation, and predictability. Their study did not consider policy factors.

#### 4 TRUST MODELS

Berg, Dickhaut and McCabe (1995) and Kramer (1994) found high initial trust levels among individuals. Neither study provides a theory by which to explain this paradox, however a model was identified by McKnight et al. (1998) to explain why initial trust levels are high. The model's constructs and processes come from four streams using primarily a cognitive approach: (1) personality (faith in humanity), (2) institutional (institution-based trust), (3) calculative (trusting stance), and (4) cognitive (categorization processes and illusions of control process). The contribution of the model integrates the different aspects of trust in order to discuss the relationships between disposition, institution and cognitive processes, but the model highlights trust at the earliest stage.

Trust is an important reason for using e-commerce, which is not related with the technology used (FRIEDMAN; KHAN JR & HOWE, 2000). McKnight and Chervany (2001) and McKnight, Choudhury and Kacmar (2003) extended the above model to explain how trust beliefs form in relation to e-commerce. This study of McKnight and Chervany proposed and empirically validated measures using four high-level trust constructs: disposition to trust, institution-based trust, trusting beliefs and trusting intentions. Disposition to trust is positively related to personal innovativeness, Web experience relates positively to institution-based trust in the Web, and perceived site quality is highly correlated with trusting beliefs in, and perceived intentions of, the vendor. The quality of the website shows that, in the context of initial relationships, people make judgments about little-known trustees on the basis of their existing knowledge; however, the model only considered trust in the initial stages, and did not address the technology.

Our study developed a theoretical model for the antecedents of trust in consumer Internet shopping, and its independent variables fall into four broad categories: (1) trustworthiness of the Internet merchant, (2) trustworthiness of the Internet shopping medium, (3) Internet shopping contextual factors, and (4) other factors (e.g., control factors, such as size of Internet merchant, demographic variables, and prior related experience). The effect of these variables on the dependent variable of consumer trust in Internet shopping (CTIS) is moderated by the trust propensity of the consumer concerned (LEE & TURBAN, 2001B). Again, the model considered trust during the initial stages.

A trust-based decision model provides a theoretical framework of how trust affects purchasing, which relates to the final trust stage. The underlying logic of the framework is that a consumer makes a purchasing decision (purchase) based on his or her purchase intention. The consumer's intention is affected by his or her perception of benefit, risk, and trust toward the Internet selling entity. The consumer will be more likely to engage in an Internet purchase when perceived risks are low, when perceived benefits are high, and when trust is high (direct effect). The consumer's trust toward the selling party or entity will also indirectly increase their intention to purchase by reducing their perceptions of risk (indirect effect).

Kim et al. (2008) extended this model to explain the whole process of consumer purchasing. Their study found that all of the cognition-based, affect-based trust antecedents except third-party seals (TPS), familiarity (FAM), and consumer's disposition to trust (CDT) had strong effects on consumer trust. The study also found that all of the cognition-based and affect-based antecedents except information quality (IQ) have negative effects on the consumer's perceived risk.

Perceived reputation, perceived size, and trust are the basis of consumer beliefs about a merchant. According to the Theory of Reasoned Action (FISHBEIN & AJZEN, 1975) and the Theory of Planned Behaviour (AJZEN, 1985), beliefs affect a person's attitudes when they evaluate a merchant and a site. Jarvenpaa, Tractinsky, and Saarinen (1999) combined these theoretical relationships in relation to the Web-shopping context. The authors discuss the model using sample consumers in Australia, Israel, and Finland. They found that perceived reputation has a more significant effect than perceived size. In addition, consumer experience is related to lower trust and higher risk, while risk is negatively related to consumers' attitudes, and their willingness to buy. Consumers' trust is significantly positively related to their attitude.

Teo and Liu (2007) extended the above model. The authors found that multi-channel service is important for e-business transformation, vendors, and consumers. Multi-channel service is one of the key dynamic capabilities necessary for e-business transformation. Through it, vendors can manage customer interactions across different channels; customers expect these channels to provide accurate and unbiased information, and be easy to navigate. System assurance can improve Internet security and develop consumer trust.

Some researches have revealed that individuals' characteristics have an importance influence on trust. Thus, the model of trust added multi-channel integration, system assurance, and consumer characteristics. We agree with Jarvenpaa et al. (1999) about the factors of perceived reputation, consumer trust, attitude and perceived risk. System assurance and characteristics of consumer have the strongest influence on consumer trust, while multi-channel integration is not related to consumer trust.

The above models all focus on the short-term and transactional side of e-commerce. Thus, Papadopoulou et al. (2001) divided the different stages of promise fulfilment in order to better define the trust-building process. The consumer will determine the trust believes when a promise is made; this promise invokes the capability process, wherein an assessment of the business's ability to realize its promise is made, which in turn affects the customer's trust in the business's competence. Keeping the promise triggers the credibility process, whereby the customer evaluates the extent to which the business has actually delivered on its promise, and develops a trusting belief in the business's integrity.

The entire interaction with the e-servicescape results in the activation of the remainder of the trust-building process. Relying on the prediction process, the customer makes inferences about the business's consistency in delivering the promises it makes, which can enhance or decrease the consumer's trust in the business's predictability. Finally, via a calculative process, the customer performs a cost/benefit-like analysis of a number of scenarios in which the business may act in an untrustworthy manner so as to eliminate any such suspicions and increase confidence in their beliefs.

## 5 DISCUSSION

According to above analysis, although different authors have discussed the factors of trust from a range of aspects, they have only focused on a single topic. Some authors, for example, considered the factors with reference to policy issues (SITKIN & ROTH, 1993; GRABNER-KRAEUTER, 2002), while other considered technology (PATTON & JOSANG, 2004).

These single-topic studies cannot understand the trust situation as a whole. Trust is very

complicated, especially with respect to e-commerce. The consumer cannot touch the merchandise or check its quality prior to purchasing. Trust is an important reason why consumers choose certain goods and buy them online.

According to previous research, this study suggests that trust factors should be considered based on two categories: internal factors and external factors.

### **5.1 Internal factors**

Internal factors come from the actors with the transaction, and include: consumer characteristics (personality, personal experience, personal preference), website characteristics (style, functionality, content, ease of use), and firm characteristics (quality, service, reputation, integrity, competence).

### **5.2 External factors**

External factors relate the basis of the transaction, and provide support for it. They include: policy (formal, standard policy, firm principles, business ethics) and technology (security, privacy, portability).

Consumer characteristics have a key influence on trust, and this informs their purchase decision. Consumer characteristics consist of three factors: personality, personal experience, and personal preference. Personality relates to learning instincts to trust from parents and other people. Rotter (1967) suggested that a person's concept of trust develops during childhood. McKnight et al. (2003) suggested that disposition to trust can be divided into two types: faith in humanity and trusting stance. Faith in humanity is a kind of natural instinct, which can also influence an individual's beliefs.

Personal experience includes education experience, life experience, and online experience. Personal experience related to past non-store and online experiences may have a direct impact on a consumer's trust (CHEN & DHILLON, 2003). Different education experiences will lead to different trust views of the same problem. People who live in loyal and honest families will have a propensity to trust, while those who come from dishonest backgrounds will have a propensity to distrust. Personal preference refers to trust habits in relation to brands, famous people, and trends. Personal preferences can also affect trust.

The website is the only bridge between the consumer and vendors. Website characteristics can affect trust. Zhang, Prybutok, Ryan and Pavur (2009) found that ease of website navigation is a key element in building customer trust. Chen and Dhillon (2003) also agreed that the appearance and structure of a site can encourage or discourage a consumer's purchase intentions. If the style of a website is satisfactory to a consumer, they will feel comfortable about buying online, and this will increase their trust. There are necessary functions that are easy to use which will affect the consumers' clicking frequency and promote their trust. In addition, accurate and timely content (which makes up the body of the website) is important for consumer trust because goods information is vast and renews quickly. Consumers need up-to-date information.

Firm characteristics include integrity, benevolence, and competence (MCKNIGHT et al., 1998). Doney and Cannon (1997) suggested that important factors in relation to firm characteristics include firm size, number of years in business, reputation, and brand. Firm reputation is difficult to achieve, and easily ruined via the Internet. Every firm is reluctant to jeopardize its reputation since it is an indicator of trust. Integrity and competence will also strengthen consumer trust from a cognitive perspective. However, the most successful factors of a firm are product quality and service; for example, many people buy products made by the company Haier because they think that its

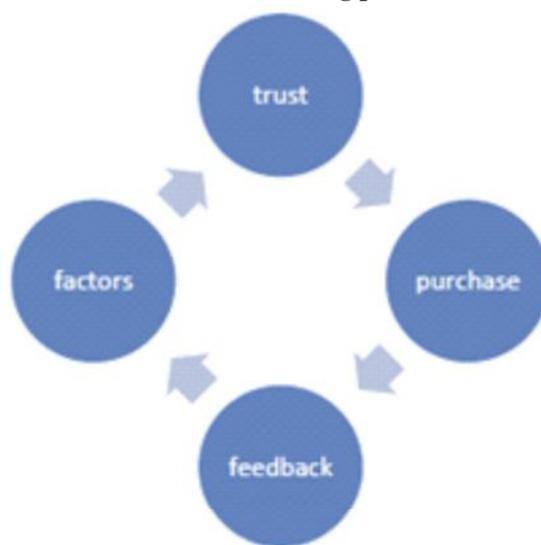
service is good. Firm characteristics consist of quality, service, reputation, integrity, and competence.

The behaviour of a firm is constrained by its formal, standard policies. Sitkin and Roth (1993) found that organizations can rely upon legalistic mechanisms to reproduce trust when it is disrupted or when distrust is engendered. Every firm should have its own operational principles in order to work well. The consumer will distrust the firm, but we will trust the firm which has no ethical problems.

Technology is the foundation of online transactions, and system security is often seen as an obstacle. Due to the fact that account and private information is often stolen, people do not always trust the technology. Public surveys indicate that privacy is a major concern (PATTON & JOSANG, 2004). If firms can adopt technology to prevent privacy being breached, trust will increase. Portability is also an important factor because technology is updated often, and distrust in firms arises if our data is lost when technology updates.

Most models emphasize the different phases of trust (LEE & TURBAN, 2001B; MCKNIGHT et al., 2003; KIM et al., 2008), but trust is long term, and it is a cyclical process (Fig 1). Transactions should not be one-off deals; successful firms should have a number of orders. They thus need good relationships with consumers, and trust is the foundation of these relationships. The factors discussed above affect consumer trust, which informs the purchase decision. When the transaction is complete, the consumer will be either satisfied or dissatisfied. Feedback provides firms with information on which factors will affect trust; they can improve these conditions in order to increase trust.

**Figure 1 - Model of the trust-building process (Source: Author)**



## 6 CONCLUSIONS

This study summarizes previous research on consumer trust. All of the factors were analysed from different directions, and present the factors from internal and external points of view. Internal factors participate in the transaction process, and include consumer characteristics, website characteristics, and firm characteristics. External factors play a role and guarantee the transaction process, although they cannot participate in the deal directly. In future, factor analyses should be conducted so that the relationships between factors are identified; this would also be interesting because the relationships between factors may be different in different countries. The paper also suggested that the trust-building process is cyclical, and firms can strengthen trust by using this model. The model should be tested mathematically in future studies.

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