

INITIAL TRUST, PERCEIVED RISK, AND THE ADOPTION OF INTERNET BANKING

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Abstract

Studies on the adoption of business-to-consumer e-commerce have not simultaneously considered trust and risk as important determinants of adoption behavior. Further, trust in information technology has not been addressed to a great extent in the context of e-commerce. This research explicitly encompasses the electronic channel and the firm as objects to be trusted in e-commerce.

Our conceptual model leads us to believe that trust in the electronic channel and perceived risks of e-commerce are the major determinants of the adoption behavior. Based on the social network theory and the trust theory, determinants of trust in the electronic channel are included in the research model.

This research is expected to provide both theoretical explanations and empirical validation on the adoption of e-commerce. We will also be able to offer specific recommendations on marketing strategies for practitioners, regarding the adoption of Internet banking.

Keywords: Trust, perceived risks, electronic commerce, Internet banking

1. INTRODUCTION

Although the number of users of the Internet has increased significantly over the past decade, only a small fraction of those users have made actual purchases over the Internet. The failure of the Internet as a retail distribution channel has been attributed to the lack of trust consumers have in the electronic channel (E-channel) and in the Web merchants (Stewart 1999).

Currall and Judge (1995) defined trust as an individual's reliance on another party under conditions of dependence and risk. Considering that risk is a function of the probability that a hazard arises and the consequences of the hazard (Schneider 1998), an individual's trusting behavior depends on the nature of the consequences. In the context of high-consequence systems such as Internet banking, risk avoidance behavior may arise since reducing risk takes precedence over cost savings.

Mayer et al. (1995) further clarified the relationship between trust and risk: trust is the willingness to assume risk, while trusting behavior is the assumption of risk. If the level of trust surpasses the threshold of perceived risk, then the trustor will engage in a risk taking relationship. Since trust develops over time (Lewicki and Bunker 1995), the level of trust an individual has in an object would be different depending on when trust is assessed. When the trustor does not have firsthand knowledge of electronic commerce (E-commerce), *initial trust* in both the Web merchant and the electronic channel are considered important, given that there is some risk involved in using an electronic channel for financial transactions. Hence, initial trust is used in this study in order to assess the level of trust a consumer has just before he/she adopts Internet banking.

Two questions are addressed in this research: (1) what factors influence the level of consumers’ trust in e-commerce (specifically, initial trust in e-channel) and (2) how a consumer’s trust in e-commerce influences the adoption of e-commerce. The specific e-commerce application used to test the research model in this study is Internet banking. In this context we define Internet banking as carrying out banking transactions over the Internet, including balance inquiry, account transfer, and on-line bill payments.

2. LITERATURE REVIEW

2.1 Existing Research on Trust in Reference Disciplines

Research approaches to trust can be categorized based on how trust is viewed. According to Bhattacharya et al. (1998), researchers in different disciplines have viewed trust along different dimensions. Personality psychologists tend to view trust as an individual characteristic while social psychologists tend to view trust from the standpoint of behavioral expectations of others involved in transactions. Economists and sociologists tend to focus on how institutions are established and incentives are used to reduce uncertainty associated with transactions among relative strangers.

In addition to the above-mentioned approaches, a large body of work in marketing has examined the issue of trust, where they have focused on two major areas: (1) the role of trust in the relationship between dyadic partners involved in transactions (e.g., Smith and Barclay 1997) and (2) culture and its influence on the development of trust (e.g., Doney et al. 1998).

Roseau et al. (1998) argue that it is necessary to integrate the differing views of trust across disciplines and put forth that trust may be a “meso” concept, which integrates both the individual and institutional level views of trust development. In this research, our focus is on the transactions conducted by individuals using an electronic medium (the Internet) to interact with a service (Internet banking) provided by an institution (the bank). Hence in this study, we make an attempt to take an integrative view of the development of trust.

A significant body of knowledge from three research streams in trust, summarized in Table 1, sheds light on the antecedents of initial trust. Table 1 also includes variables relevant to this research, suggested by extant trust research. It is to be noted here that the antecedents of trust presented here are not exhaustive and are limited to those variables that were deemed to be of interest in this research. For example, culture could be considered to have an influence on trust (e.g. Jarvenpaa and Leidner 1999), but is not included here since it was not the focus of this research.

2.2. Social Network Theory

Stewart (1999) argued that transference is a means by which initial trust in an unknown object (e.g., the Internet) may be established. The transfer of trust/distrust can be studied based on social network theory (Granovetter 1973), which states that informal channels of communication are the primary means of disseminating market information when the services are difficult to evaluate. Among others, word-of-mouth (WOM) referral is known to have a strong influence on consumer behavior.

Table 1. Research Approaches and Relevant Variables to this Research

Approach	Description	Research Variables
Economics-based	Individuals make trust choices based on rationally derived costs and benefits (Williamson 1993)	Perceived Risk <ul style="list-style-type: none"> • Relative Advantages • Negative Consequences
Institution-based	Institution-based trust means that one believes the necessary impersonal structures are in place to enable one to act in anticipation of a successful future endeavor (Zucker 1986)	Institutional Characteristics <ul style="list-style-type: none"> • Structural Assurances
Personality-based	Trust develops during childhood as infant seeks and receives help from his benevolent care givers, resulting in a general tendency to trust others (Rotter 1967)	Trustor’s Propensity-to-Trust

A WOM referral network consists of two components: relational content and relational form (Brown and Reingen 1987). Relational content is a communication relation by which messages are transmitted from one consumer to another on “who-told-whom-about-the-service.” Relational form refers to properties of linkage between pairs of actors that exist in the WOM referral network.

2.3. Contribution/Weaknesses in Prior Research

1. Prior studies on the adoption of business-to-consumer e-commerce have not *simultaneously* considered trust and risk as important determinants of the adoption behavior.
2. Although trust has been studied in the context of e-commerce, trust in IT (where IT is the object that is trusted) has not been specifically addressed in the context of e-commerce. This research explicitly distinguishes between the e-channel and the firm as objects to be trusted in e-commerce. Previous research has mostly dealt with trust in other people and trust as a social phenomenon. However, the relationship between a trustor and the electronic objects that the trustor may need to trust has not been studied.

3. RESEARCH MODEL AND HYPOTHESES

The research model is presented in Figure 1. It distinguishes trust in e-channel and trust in the firm from trusting behavior (i.e., adoption of Internet banking). A consumer does not need to risk anything in order to trust; however, a consumer must take a risk in order to engage in trusting behavior (Mayer et al. 1995). Specifically, initial trust between parties will not be based on any kind of experience with the other party. Rather, it will be based on an individual’s propensity-to-trust, WOM referrals, and institutional characteristics that enable one person to trust the e-channel without firsthand knowledge (McKnight et al. 1998).

3.1. Propensity-to-Trust and Initial Trust in E-Channel

Using social learning theory, Rotter (1980) explained the development of trust as the formation of baseline expectations through interactions with significant others (e.g., parents). Trustworthy behavior in the past by significant others forms the positive basis for a trusting personality.

Propensity-to-trust others is viewed as a trait that is stable across situations (Sitkin and Pablo 1992). The effects of propensity-to-trust would manifest when a trust level is initially formed. In situations where one’s generalized expectancy is all one can rely on without firsthand knowledge of the other party, propensity-to-trust is likely to have a significant effect on a person’s initial trust (McKnight et al. 1998).

Hypothesis 1: The higher the consumer’s propensity-to-trust, the higher the level of initial trust in the e-channel.

3.2 Institutional Characteristics and Initial Trust in E-Channel

Institution-based trust researchers maintain that trust reflects the security one feels about a situation because of guarantees, or other impersonal structures (Zucker 1986). The necessary impersonal structures are particularly relevant to trust in Internet banking since consumers will naturally experience uncertainty due to the novelty of the e-channel (Jarvenpaa and Todd 1996-97). When a consumer makes a financial transaction in the physical world, there are many potential bases of trust such as the workers’ professional appearances. However, these physical cues and personal interactions are minimal in Internet banking. Thus, structural assurances such as guarantees are important to build consumers’ trust in Internet banking.

Hypothesis 2: The more positive/negative the institutional characteristics, the higher/lower the level of initial trust in the e-channel.

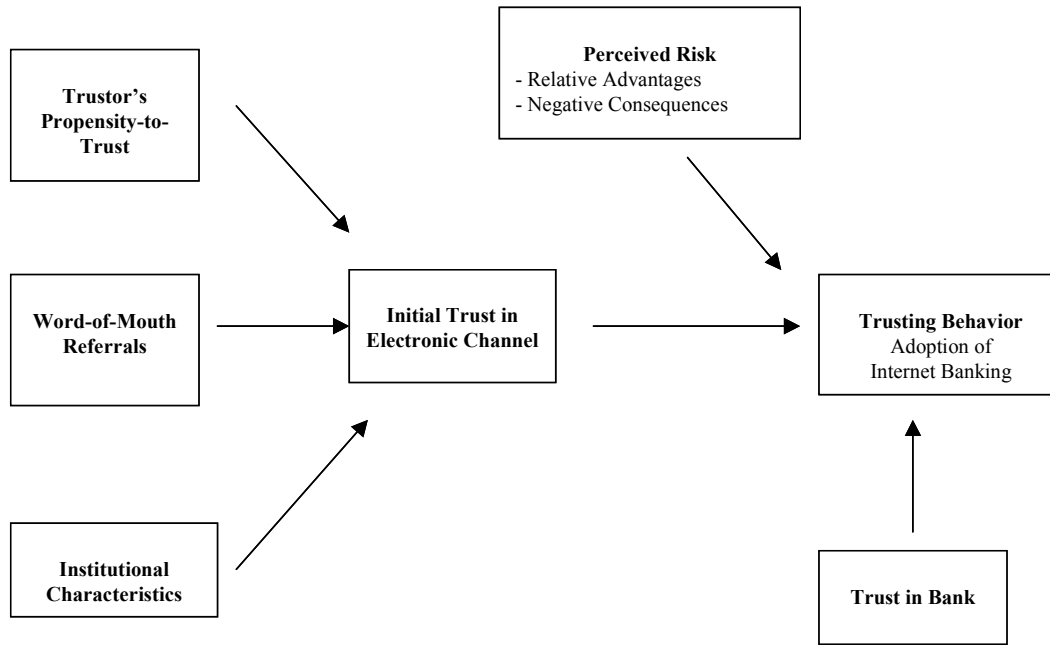


Figure 1. Research Model

3.3 Word-of-Mouth Referrals and Initial Trust in E-Channel

Rogers (1983) stated that information about an innovation (e.g., e-commerce) “is communicated through certain channels over time among the members of a social system” (p. 5). Social network theory (Granovetter 1973) states that informal channels (e.g., WOM) of communication are the primary means of disseminating market information when the services are particularly complex and difficult to evaluate (Brown and Reingen 1987). The service quality of Internet banking is difficult to evaluate without firsthand experience. The consumer’s uncertain perceptions about Internet banking may be influenced by the information s/he gathers through WOM referrals.

Approaching from a different theoretical basis, i.e., cognitive balance theory, Stewart (1999) argued that transference is a means by which initial trust in an unknown object may be established. WOM referrals would be an important communication channel as the means by which the transfer of trust/distrust occurs. This implies that if one gets positive WOM referrals on e-commerce from a person with strong personal ties, the consumer may establish higher levels of initial trust in e-commerce.

Hypothesis 3: The more positive word-of-mouth referrals the consumer gets, the higher the level of initial trust in the e-channel.

3.4 Trust in Internet Banking and Adoption Behavior

Mayer et al. made an important distinction between trust and trusting behavior in relation to risk. The fundamental difference between trust and trusting behavior is between a “willingness” to assume risk and actually “assuming” risk. There is no risk taken in the willingness to be vulnerable (i.e., to trust), but risk is inherent in the behavioral manifestation of the willingness to be vulnerable. The adoption of Internet banking, a form of trusting behavior, means that a consumer is “taking” risk, since he puts himself in a possibly vulnerable situation.

As a general positive attitude toward another social entity, trust acts as a guideline, influencing one’s behavior within a relationship. Trust will increase the likelihood of trusting behavior because trust is likely to alleviate concerns regarding possible negative consequences.

Stewart argued that there are two objects to be trusted in Internet transactions: the channel and the target firm. In the case of Internet banking, the two objects to be trusted are the e-channel and the bank that offers the Internet banking service. Hence the adoption behavior will be influenced by the user’s trust in both objects.

Hypothesis 4: The adoption of Internet banking will be positively influenced by the level of initial trust in the e-channel.

Hypothesis 5: The adoption of Internet banking will be positively influenced by the level of trust in the bank.

3.5 Perceived Risk and Adoption Behavior

Mayer et al. suggested that, to understand how trust influences trusting behavior, we should “separate trust from other situational factors that necessitate trust (i.e., perceived risk)” (p. 726). Then, they proposed that the level of trust is compared to the perceived risk in a situation. If the level of trust surpasses the threshold of perceived risk, then the trustor will engage in trusting behavior. If the level of perceived risk is greater than the level of trust, the trustor will not engage in the trusting behavior.

Meanwhile, assessing the risk in a situation involves evaluating the benefits versus the costs. Although usually risk has been discussed in the context of negative consequences, Mayer et al. argued that “both the possible gains and the potential losses will affect the interpretation of the risk involved” (p. 725). Thus, it can be expected that perceived risk, as a result of the evaluation of gains and losses, would influence the adoption behavior.

Hypothesis 6: The adoption of Internet banking will be negatively influenced by the level of perceived risk of Internet banking

H6-1: The adoption of Internet banking will be positively influenced by the level of perceived relative advantages of Internet banking

H6-2: The adoption of Internet banking will be negatively influenced by the level of perceived negative consequences of Internet banking

4. RESEARCH METHODS

4.1 Operationalization of Research Variables

The research instrument to measure the constructs of interest was developed either by adapting existing measures to the research context or by converting the definitions of the constructs into a questionnaire format. All the variables were measured on a seven-point Likert scale. The various research variables and their dimensions along with the source of measurement scales are summarized in Table 2.

4.2 Research Instrument Validation

A pretest of the research instruments was carried out with a total of 61 full-time MBA students at a major Midwest university. As a result of the pretest, several items were refined. Some initial items were found to be unclear expressions of the research constructs and these items were eliminated. A second pre-test was conducted with an online version of the instrument using full-time undergraduate students. The focus of this test was the layout and operation of the online form.

After the final data collection, the validity of the measures used for research constructs will be evaluated using principal component analysis with varimax rotation.

4.3. Sample

The data for the study will be collected on-line from the Web site of a major Midwest bank that offered Internet banking and from the Web sites of a local media company. The survey will be solicited from the above Web sites for a few days by using banner advertisements. We expect to collect 250 responses to the survey.

Table 2. Constructs and Sources of Measure

Construct	Dimensions	Source of Scales
Propensity to Trust	Generalized trust of others	Rotter (1967)
Institutional Characteristics	Structural assurances	Adapted from Zucker (1986)
Word-of Mouth Referrals	Instrumental cues (Duhan et al. 1997). Relational form (Money et al. 1998)	Developed for this research
Perceived Risk	Negative consequences Relative advantage	Negative consequences: Developed based on Simpson and Lakner 1993 Relative advantage: Adapted from Moore and Benbasat 1991
Trust in Electronic Channel	Correctness Availability Reliability Security Survivability	Developed based on Schneider 1998
Trust in the Bank	Commitment Excessive advantage	Adapted from Cummings and Bromiley (1996)

5. EXPECTED CONTRIBUTION

This study is expected to show that trust in the e-channel and trust in the bank have effects on the adoption of Internet banking. By separating effects of trust from those of perceived risks, we may better understand the influences of these two variables on adoption behavior.

This research is expected to provide both theoretical explanations and empirical validations on the differences between adopters of Internet banking and non-adopters. We will also be able to offer specific recommendations on marketing strategies for practitioners to expedite the adoption of Internet banking, which will provide more convenience for bank customers.

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