

# Influence of Trust in Espousal of E-Banking in India

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**Abstract-** Online banking has seen dramatic growth in the past several years and will continue to grow in the years to come. An increasing number of users are processing transactions online and the numbers are likely to increase rapidly in the near future. Trust plays a critical role in these electronic transactions that are processed online. Trust has been identified as the key factor to E-banking because it is crucial wherever uncertainty and interdependence exist. The users who display a high level of trust in their financial institutions are more likely to adopt a variety of electronic banking services. There is a strong association between a high level of trust and the E-banking adoption. However, despite the growing interest in exploring the acceptance of E-banking services, there has been very little literature that focuses on the user trust and adoption of E-banking. So, it is increasingly necessary to the bank managers to understand what is important to customers when it comes to E-banking. This research intends to propose a model of trust for electronic banking and tries to offer insights about critical factors in adoption behavior of Indian customers. Based on input received from 110 electronic banking customers, the proposed model is empirically tested using structural equation modeling. Findings suggest that trust and perceived risk are direct antecedents of intention, and trust is a multi-dimensional construct with three antecedents: perceived security, perceived privacy and perceived trustworthiness.

**Keywords-** Integrity, Security, Risk, Trust

## I. INTRODUCTION

In 30.6.2012 34.3% of the total world population was using the Internet. This means that approximately 2,405,518,376 people all over the world were connected to each other. Today the situation is very different from that of a couple of years ago. These massive figures very well reflect the scope and size of this the network. There is no other channel in the whole world bringing people so close to people, people so close to business or business so close to business than the Internet.

As expected, various industries and business areas are utilizing the Internet. Apart from connectivity, there is a great amount of other prospects coming along with it. The Internet is used to augment, or even supplant, product and service

delivery processes considered as more traditional. Banking is not any different from other business areas, as banking in general is extremely information-intensive. Therefore Information technology (IT) has an increasingly important role in modern banking of any kind, especially when directly accessible by the bank's customers.

E-business is now a standard in industry. The Internet is transforming marketing and trade (Shashank Rao, Goldsby, & Iyengar, 2009). Many companies have found successful ways for advertising, marketing, and distributing their products and services online. The internet environment has changed and still changing the rules of traditional business (Eid, Trueman, & Ahmed, 2002). The Internet is creating higher customer expectations and customers are expecting closer relationships (Chaston & Mangles, 2003). However, the emergence of the Internet does not change the need to establish strong customer relationships (Harrison-Walker & Neeley, 2004). Businesses still need to attract customers, build trust, and create satisfaction. Firms interact with their customers to build committed relationships.

Internet-based relationships seem to be sufficiently different from traditional relationships and therefore require specialized attention (Colgate et al., 2005). The Internet alters the customers' perspective of the benefits gained from that relationship. As a result of this, customers are transferring physical, tangible elements of a relationship into the intangible Internet environment. By doing this, they try to gain reassurance and strengthen the relationship. The Internet influences two types of bonds in a relationship. These are grouped into technical and social elements, or structural and social bonds (Rao & Perry, 2003).

The Internet can be used effectively in a business-to-business context (Rao & Perry, 2003) and the assessment of the technology impact on relationship marketing has largely been restricted to industrial marketing (McGowan et al., 2001). Business-to-business Internet marketing is concerned chiefly with communications and transactions conducted using Internet-based technologies. In the context of this research, business-to-business Internet marketing consists of online marketing communications and online banking.

## II. REVIEW OF LITERATURE

In the world of banking, the development of information technology has an enormous effect on development of more flexible payments methods and more-user friendly banking services. E-banking involves, consumer using the Internet to access their bank account and to undertake banking transactions. At the basic level, Internet banking can mean the setting up of a web page by a bank to give information about its products and services. At an advanced level, it involves provision of facilities such as accessing accounts, transferring funds, and buying financial products or services online. This is called "transactional" online banking (Sathye, 1999). In spite of the great benefits of the online banking, it is extremely essential that banks regard the risks associated with it. The banking industry is strongly associated with high levels of trust related to security and privacy issues in the physical environment. One significant step that banks must take before going through any transformation is to insure the proper handling of online banking risk. But it is very difficult for both the customers and the banks to determine the best approach to use of online banking. A particular risk arises with trying to integrate new channels with existing channels.

In India, slowly but steadily, the Indian customer is moving towards electronic banking. But they are very concern about security and privacy of internet banking. In the Internet banking trust plays a very important role. It is very difficult to analyze trust as a phenomenon and may be almost impossible to analyze trust in the context of electronic commerce because of the complexity and risk of electronic commerce. Trust will be the decisive factor for success or failure of e-businesses. Karake Shalhoub (2002a and 2006b) has studied a number of US-based firms to determine what she labeled trust enhancers. Her findings identified two main categories: privacy and security as the main determinants of trust in electronic commerce. Privacy has long been defined as the right of a person to be left alone and to be able to have control over the flow and disclosure of information about him or herself. Worries about privacy are not new, although businesses have gathered information about their customers for years. However, privacy issues often come about because of new information technologies that have improved the collection, storage, use, and sharing of personal information.

There are a number of reasons which are fundamental for the development and diffusion of online banking (Pikkarainen, et al., 2004). The internet offers a potential competitive advantage for banks, this advantage lies in the areas of cost reduction and more satisfaction of customer needs (Bradley & Stewart, 2003; Jaruwachirathanakul & Fink, 2005). Encouraging customers to use the Internet for banking transactions can result in considerable operating costs savings (Sathye, 1999). The Internet is the cheapest distribution

channel for standardized bank operations, such as account management and funds transfer (Polasik & Wisniewski, 2009). Customer dissatisfaction with branch banking because of long queuing and poor customer service is an important reason for the rapid movement to electronic delivery (Karjaluo, Mattila, & Pento, 2002). The commitment of senior management was also found to be a driving force in the adoption and exploitation of technology (Shiels, McIvor, & O'Reilly, 2003). Despite the many benefits that Internet banking provides to both banks and their customers; acceptance of this technology has not been equal in all parts of the world (Karjaluo, et al., 2002). And even though the vast number of existing studies and the growing interest in the introduction and development of Internet banking, very little is known about the variables that truly determine the adoption of Internet Banking (Hernandez & Mazzon, 2007). Acceptance and usage of online banking in India is still considered to be low due to a number of reasons.

## III. TRUST

Trust is central to the development of successful service relationships in business-to-business markets and for the achievement of customer loyalty (Rauyruen & Miller). In a business to customer environment, trust between parties is established very differently from business-to-business environments. In a business-to-customer context the relationship is often very short term and more transaction focused (Bennett & Barkensjo, 2005) unlike in business-to-business, where the relationships are of a long term. Anderson and Narus, (1990) defined trust in manufacturer-distributor relationships as a belief that the partner company will perform actions that will lead to positive outcomes, and that this partner will not take unanticipated actions that may result in negative outcomes for the firm. The absence of physical branch and physical interaction renders a unique environment, in which trust is of vital importance. Majority of the customers are reluctant to adopt E-banking because of security and privacy concerns (Lee & Turban, 2001). Thus, the lack of customer trust, both in the attributes of the bank and in the overall online environment has been, and remains, an obstacle in the widespread adoption of Internet banking. Aladwani (2001) therefore, has identified customers' trust as an important future challenge for Internet banking.

The survival of Internet banking depends on the bank's ability to convince the customers to bank online, an act that is unlikely to occur if the bank is being perceived as untrustworthy. Banks can build mutually valuable relationships with their online customers through a trust-based collaboration process (Dayal, Landesberg, & Zeisser, 1999). However, the way in which trust may be gained and the impact it has on Internet banking is not yet well understood.

Trust in Internet banking is a new and emerging area of interest in the field of marketing of financial services research.

Current literature in e-commerce offers very little insight about how trust is developed and maintained (Ndubisi & Wah, 2005). Trust plays an important role in electronic or traditional transactions, it is critical for establishing a long term business relationship, especially if partners are located in different places where rules and regulations vary, many partners often do not know each other and have less control over data while they are being transferred (Roy, Dewit, & Aubert, 2001). The aim of this article is to develop and validate a model of trust for E-banking. The methodology for questionnaire design and data collection is explained in the section 'research methodology'. Finally, the article presents the results, discusses the findings, and concludes by suggesting directions for future research.

#### IV. A MODEL OF TRUST FOR INTERNET BANKING

The literature on trust provides a useful basis for investigating consumer trust and its antecedents in the context of e-banking., but as pointed out by Mayer et al. (1995) many researchers confuse trust with its antecedents. Another important limitation is whether trustworthiness is part of trust or a different construct. Gefen et al.(2003) note the tendency of online trust research to treat conceptualization of trust as a one-dimensional construct, ignoring the large body of literature suggesting that it is a complex multi-dimensional construct. Drawing from previous literature, this section aims to remove this confusion by proposing a simple yet parsimonious model of trust for Internet banking. Figure 1 suggests that an intention to patronize E-banking is contingent on the banks' ability to evoke customer trust. The present study proposes that for perception of high security and privacy to exist, customers must believe that the bank has both the ability and motivation, i.e. perceived trustworthiness, to reliably deliver online banking services. Customers' perception of a bank as a trustworthy E-banking provider also has a direct effect on their trust. The direct influence of perceived risk on intentions is related to the notion of perceived behavioural control in the theory of planned behaviour.

##### A. Perceived risk

Perceived risk can be defined as 'a combination of uncertainty plus the seriousness of outcome involved'. The distant and impersonal nature of the online environment and the implicit uncertainty of using a global infrastructure for transactions can bring about several risks that are either caused by functional defects or security problems or by the conduct of parties that are involved in the online transaction (Pavlou, 2003). Literature on trust suggests that trust is related with risk, because it reduces the risk of falling victim to

opportunistic behaviour .Researchers agree that that trust lowers the perceived risk of facing a negative outcome of a transaction by reducing the information complexity (e.g. Mayer et al., 1995). Research on trust, however, does not clarify the relationship between trust and perceived risk. It is unclear whether risk is an antecedent to trust, is trust, or an outcome of trust. This implies causality between trust and perceived risk, without being clear about the direction of the causality. This confusion is further compounded when the effect of the trust–risk relationship on customer's intentions and actual behaviour is considered.

Recent studies of an Internet store suggests that customers' trust on the Internet store leads to a low perceived risk of buying from that store (e.g. Jarvenpaa et al., 2000). The mediating role of perceived risk in the relationship between trust and intention has been asserted by many other researchers over time (e.g. Cheung & Lee, 2000; Pavlou, 2003). Following the literature, it is proposed that:

**H1: Perceived risk negatively influences intention.**

**H2: Trust positively influences intention.**

**H3: High trust reduces perceived risk.**

##### B. Antecedents of trust

This study treats the perceptions of privacy and security as antecedents of trust because previous research has asserted that the 'first and most necessary step' in establishing customers' trust is to provide them with the guarantee that their personal information will be safeguarded. Belanger, Hiller, and Smith (2002) have pointed to the deficiency of existent e-commerce literature in conceptualizing security and privacy as distinct issues. In the present study, privacy and security are treated as two separate constructs and they are defined similar to the distinction that Hoffman et al. (1999) used in identifying 'environmental control' as separate from 'control over the use of information'.

##### C. Perceived security

A number of studies shows the importance of security for the acceptance of online banking. (Hernandez and Mazzon, 2007; Sathye, 1999). Kalakota and Whinston, (1997) defines Perceived security as a threat that creates a circumstance or condition, with the potential to cause economic hardship to data or network resources in the form of destruction, disclosures, and modification of data, denial of service, and/or fraud, waste and abuse. According to Aladwani (2001) the future challenges for the adoption of E-banking are Internet security, consumers' privacy, bank's reputation and online banking regulations. Indeed, in Aladwani's (2001) study of E-banking, customers ranked privacy& Internet security as the most important future challenges. Sathye, 1999 found lack of privacy and security are the significant obstacles to the

adoption of online banking. Mukti (2000) found that security is main barrier to e-commerce expansion in Malaysia. According to him, security is the most feared problem on the internet. Banks and customers take a very high risk by dealing electronically.

As the amount of products and services offered via the Internet grows rapidly, consumers are more and more concerned about security and privacy issues. After analyzing different research papers Fitzgerald (2004) argued that lack of awareness of online banking and the security concerns are the major 'non-adoption' areas of E-banking. According to the white paper published by Symantec co. malicious applications that steal financial account information have increased dramatically over the last few years, resulting in a direct loss of hard currency as well as loss of trust. According to Hernandez and Mazzon (2007), privacy issues have proven important barriers to the use of online services.

The present study measures the customers' perspective about secure Internet banking transactions based on their perceptions of timely, accurate, and safe data transmission. It is assumed that when a customer develops positive perceptions of security, the trust and confidence in the relationship will also increase and will promote open, substantive, and influential information exchange.

#### **H4: Perceived security positively influences trust.**

##### *D. Perceived privacy*

Goodwin (1991) defines Perceived privacy as the consumer's ability to control (a) the presence of other people in the environment during a transaction and (b) the dissemination of provided information. The present study defines perceived privacy as customers' perception regarding their ability to monitor and control the collection, use, disclosure, and subsequent access of their information provided to the bank during an online transaction. Consumers in online environments perceive little control over information privacy and this has a striking influence on their willingness to engage in trusting relationships with web merchants. Financial service customers are more reluctant to use online services out of fear that their financial life will become an open book to the Internet universe. Thus there is a risk of a loss of privacy, which is a significant factor in building trust. The literature has described the willingness to assume the risk of disclosure as a dimension of trust (Nowak & Phelps, 1997). This suggests that the customers having a high perception of online privacy will be more willing to trust and patronize Internet banking services.

#### **H5: Perceived privacy positively influences trust.**

##### *E. Perceived trustworthiness*

There is the lack of empirical attention given to perceived trustworthiness. According to Mayer et al. (1995), the perceived trustworthiness is the trustor's perception of how trustworthy the trustee is, while trust is the trustor's willingness to engage in a risky behaviour. Mayer et al. (1995) further identified two main elements of perceived trustworthiness as integrity and benevolence. However, the authors noted that these factors are 'not trust per se', but they 'help build the foundation for the development of trust'. They also suggested that these characteristics are related, but separable, and that together they explain a large variance in trustworthiness while maintaining parsimony. Previous research has shown that perceived trustworthiness directly or indirectly influences the customer's level of trust in e-commerce transactions. However, the literature on online trust has rarely addressed trustworthiness as a distinct concept. In this study, it is proposed that perceived trustworthiness will have an indirect effect, through perceived security and perceived privacy, and a direct effect on the customers' trust to engage in Internet banking because it will assure the customers that the bank is both competent and willing to deliver services in accordance with their expectations.

#### **H6: Perceived trustworthiness positively influence trust.**

#### **H7: Perceived trustworthiness positively influence perceived security.**

#### **H8: Perceived trustworthiness positively influence perceived privacy.**

## V. RESEARCH METHODOLOGY

### *A. Sample*

Data have been collected from 110 electronic bank customers of private sector banks in Ludhiana and Chandigarh. The response rate was 90%. The average age of the respondents was 42 years. Among the respondents 70 respondents were male and 29 were female. The average Internet experience of the respondents was 4.60 years and the average Internet banking experience was 3.68 years.

### *B. Measures*

An initial pool of items was created from a review of the existing literature on technology acceptance. Some items were taken from the previous literature with modifications to fit the context of E-banking. The remaining items were developed through proposed definitions of the constructs, focus groups, and personal interviews with E-banking users. All multiple-item scales were measured on a 7-point Likert-type scale with anchors of strongly agree (1) to strongly disagree (7).

### *C. Results*

A correlation analysis was conducted on all variables to explore the relationship between the variables. Table 1 suggests that the correlation coefficients among the latent constructs do not exceed the cut-off point of 0.85. Additionally, a comparison between the square root of AVE and correlations in Table 1 also establishes the discriminant validity. Table 2 presents the parameter estimates of the full structural model.

#### D. Discussion

The present study makes an important contribution to the online customer behaviour by integrating number of variables from the trust domain and applying them to a new context of E-banking. There are several new findings. First, trust and perceived risk are shown to be direct antecedents of intention, indicating that uncertainty reduction is a key component in the customers' acceptance of Internet banking; thus, it deserves particular attention. Secondly, while trust has a direct affect on intentions, it also acts as an indirect antecedent through perceived risk and perceived usefulness. Thirdly, the findings related to trust, reinforced the interpretation that trust is a multi-dimensional construct and confirms the following three antecedents of trust:

- A belief that the bank is reliable (perceived trustworthiness)
- A belief that there are safety mechanisms built into the website (perceived security)
- A belief that transaction information will not be used without customer's consent (perceived privacy).

The significant effect of perceived trustworthiness on security and privacy validates the fact that trust only occurs when customers are assured of the bank's willingness and ability to deliver obligations. Thus, for the perception of high security and privacy to exist, the customer must believe that the bank has both the ability and motivation (perceived trustworthiness) to reliably deliver online banking services. The findings also highlight the importance of using security and privacy as two distinct concepts, even though they are conceptually related.

#### VI. LIMITATIONS AND FUTURE RESEARCH

There may be number of factors which affect customer trust towards e-banking. It is not practically possible to consider all the variables in a single study. But, the research models could have been more robust if few more variables could have been added. Future research should make several extensions of the current study. Future research can be extended to include other persons, settings, and times. One way of doing this is to extend the work to lesser known Internet banking websites. The future researchers should also investigate whether customer perceived trust can influence

customer satisfaction and in turn customer adoption and loyalty. By attempting to explain these relationships the researchers can represent e-banking both as a challenge and an opportunity for marketers of financial products.

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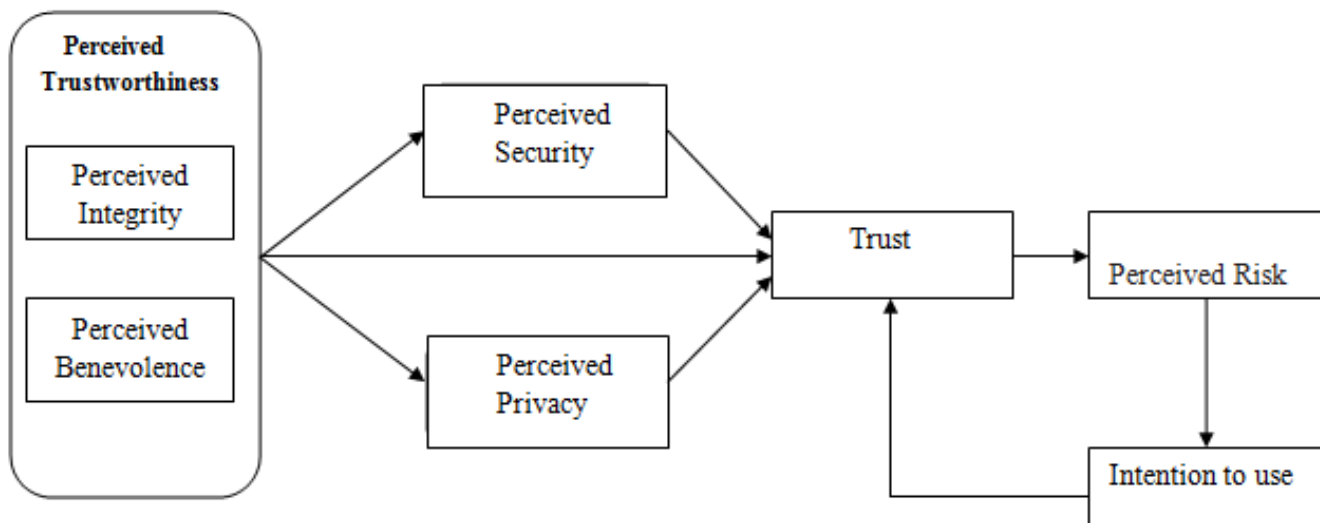


Figure 1. A model of Trust for E-banking

TABLE I. DESCRIPTIVE STATISTICS, CORRELATION MATRIX AND SQUARE ROOT OF AVE.

Constructs	1	2	3	4	5	6
Behavioural intentions	<i>0.88</i>					
Perceived risk	<i>-0.39</i>	<i>0.90</i>				
Trust	<i>0.64</i>	<i>-0.59</i>	<i>0.91</i>			
Perceived security	<i>0.29</i>	<i>0.45</i>	<i>0.72</i>	<i>0.80</i>		
Perceived privacy	<i>0.21</i>	<i>0.44</i>	<i>0.60</i>	<i>0.61</i>	<i>0.81</i>	
Perceived trustworthiness	<i>0.25</i>	<i>0.54</i>	<i>0.64</i>	<i>0.70</i>	<i>0.51</i>	<i>0.80</i>
Mean	3.33	3.32	3.21	3.72	3.60	3.52
Standard deviation	1.36	1.30	1.60	1.51	1.60	1.52

**Note:** Diagonal values represented in italics are square root of average variance extracted (AVE); off-diagonal values are correlations between constructs

TABLE II. ESTIMATES OF THE STRUCTURAL MODEL

Hypothesized relationship	Estimate	Critical ratio (t-value)	Result
H1: Perceived risk → Behavioural intentions	-0.12	-3.30*	Supported
H2: Trust → Behavioural intentions	0.39	7.22*	Supported
H3: Trust → Perceived risk	-0.80	-10.99*	Supported
H4: Perceived security → Trust	0.42	7.40*	Supported
H5: Perceived privacy → Trust	0.24	5.22*	Supported
H6: Perceived trustworthiness → Trust	0.57	8.02*	Supported
H7: Perceived trustworthiness → Perceived security	0.71	10.90*	Supported
H8: Perceived trustworthiness → Perceived privacy	0.65	11.98*	Supported

Note: \*p < 0.001