CHAPTER II

REVIEW OF LITERATURE

This chapter presents the review of literature. An overview of internet banking studies is presented followed by a parsimonious list of empirical research of internet banking adoption worldwide and in India.

2.1 Introduction

The present study aims at identifying the predictors of internet banking adoption in India through a research model. To this end a review of literature is vital to gain insight into the theories related to adoption of technology and the situation of internet banking adoption among consumers in India. Hence literature review is done to clarify and bring out the factors that are found to influence consumer adoption of internet banking.

There could be two fundamental reasons underlying internet banking development and diffusion on this basis of which no bank can underestimate the power of the internet channel. First, banks get notable cost savings by offering internet banking services. It has been proved that internet banking channel is the cheapest delivery channel for banking products once established. (Sathye, 1999; Robinson, 2000; Giglio, 2002). Second, banks have reduced their branch networks and downsized the number of service staff, which has paved the way to self-service channels as quite many customers felt that branch banking took too much time and effort (Karjaluoto et al., 2003). Several studies indicate that online bankers are the most profitable and wealthiest segment to banks (Mols, 1998; Robinson, 2000; Sheshunoff, 2000).

Internet banking offers numerous benefits for both banks and their retail customers. A primary benefit for the bank is cost savings; and, for the consumer, a primary benefit is convenience (Bruno, 2003; Gerrard and Cunningham, 2003). The bank can provide the customer with convenient, inexpensive access to the bank 24 hours a day, seven days a week.

On the customer front internet banking provides many advantages (Pikkarainen et al., 2004; Hway-Boon and Cheng Ming Yu, 2003). Time and cost savings and freedom from place have been found the main reasons underlying online banking acceptance (Polatoglu and Ekin, 2001; Black et al., 2002; Howcroft et al., 2002). Several studies have analyzed consumer adoption and growth of internet banking.

As noted above, internet banking offers many benefits to banks as well as to customers. However, in global terms the majority of consumers are still not using the internet banking channel. There exist multiple reasons for this. To start with, customers need to be
aware of internet banking and its benefits and have an access to the internet in order to utilize the service. Furthermore, new online users need to first learn to use the service (Mols et al., 1999). Second, nonusers often complain that internet banking has no social dimension or lacks face-to-face service (Mattila et al., 2003). Third, customers have been afraid of security issues (Sathye, 1999; Hamlet and Strube, 2000; Howcroft et al., 2002). Ndubisi et al., (2004) also established the importance of adequate security in order to raise the confidence of consumers to use internet banking.

Since internet banking is largely a technology-based procedure or process, it is logical to consider the technology itself when trying to understand who is utilizing it. Importantly, from a consumer standpoint, the technology necessary to reliably and securely process internet banking transactions has only recently become available and easily accessible to consumers. Technological innovations in and of themselves, however, do not necessitate the level or magnitude of change as seen recently in the retail banking industry. Beyond being available, a technology must offer clear-cut benefits for both for bankers and customers in order to be successfully adopted and utilized.

The following section contains a parsimonious list of empirical research conducted in the area of consumer adoption of internet banking both worldwide and in India. The reviews are presented in a chronological order.
2.2 Review of Internet Banking Adoption Studies Worldwide

Sathye (1999) studied the adoption of internet banking by Australian consumers using factors such as security, ease of use, awareness, pricing, resistance to change and infrastructure. The results showed that security concerns and lack of awareness of internet banking and its benefits were considered as the obstacles to the adoption of internet banking in Australia.

Venkatesh (1999) examined the role of training in creating favorable users’ perceptions. The study emphasized the importance of Perceived Ease of Use (PEOU) in predicting IT adoption and argued that training could influence knowledge (or awareness about internet technology) and hence users’ perceptions of ease of use.

Guru et al., (2000) examined various electronic channels used by the Malaysian banks and also assessed the consumers reactions to those delivery channels. It was found that internet banking was nearly absent in Malaysian banks during that period, due to lack of adequate legal framework and security concerns. However over 60 percent of the respondents were having internet access at home and thus represented a positive indication for internet banking in future.

Lee (2000) presented a model of consumer adoption and diffusion of technological innovations in the United States. Diffusion of technologies such as ATM’s, debit cards, smart cards, direct deposit, and direct payment were considered for the study. The model conceptualized that an individual consumers’ adoption of a technological innovation is influenced by consumer, innovation, and communication factors. Consumer factors referred to characteristics of consumers such as demographic and socioeconomic characteristics. Innovation factors included consumers’ perceived characteristics of innovation. And communication factors referred to
how the information about technological innovation was passed on to consumers. The study concluded that consumers’ perceptions of innovations were more important in determining their adoption decision than their demographic characteristics.

Trocchia and Janda (2000) argue that consumers’ adoption rate of the internet is associated with their past experiences with the technologies. Non-users’ negative experiences were suggested to have a great impact on their perceptions about the internet. This logic is in line with the classic attitude theories of Fishbein and Ajzen (1975), which claims that the more positive the person’s past experience about an object is, the more positive beliefs he will hold about it. As a result, the positive beliefs create positive perceptions.

Borchers (2001) tested a measurement model of consumer’s trust in Internet shopping (CTIS) context, proposed by Cheung and Lee (2000). The model posited trustworthiness of internet vendors (including perceived security control, privacy control, integrity and competence) and external environment (third part recognition and legal framework) as being positively related to CTIS and moderated by propensity to trust.

Lee and Lee (2001) investigated whether consumers’ decision to adopt internet banking was need-based or skill-based by employing Structural Equation Modeling (SEM). Specifically, the effects of consumers’ prior use of banking services, internet purchasing experience, use of personal computers, and demographic characteristics on their likelihood to adopt internet banking was examined. Results showed that adoption of internet banking was both a need and skill based decision. The impact of demographic factors on non adopters’ likelihood of internet banking was found negligible.
Lee and Turban (2001) described a theoretical model for investigating the four main antecedent influences on consumer trust in the context of internet shopping which is similar to internet banking since the same medium is used. Trustworthiness of the internet merchant, trustworthiness of the internet as a shopping medium, infrastructural (contextual) factors (e.g., security, third-party certification), and other factors (e.g., company size, demographic variables) were considered as antecedents. In the study the antecedent variables were shown as moderated by the individual consumer’s degree of trust propensity, which reflects personality traits, culture, and experience. The findings indicated that merchant integrity is a major positive determinant of consumer trust in internet shopping, and that its effect is moderated by the individual consumer’s trust propensity.

Matila (2001) found out factors defining consumers' adoption of internet banking in Finland. It was found that prior technology experience, personal banking experience, reference group influence, and security concerns were the main factors influencing adoption of internet banking. Demographic characteristics and overall perceptions of internet banking were found to have a significant effect on the adoption.

Polatoglu and Ekin (2001) listed nine factors that influenced the diffusion of internet banking. They were: relative advantage, observability, trialability, complexity, perceived risk, type of group, type of decision and marketing effort. The study concluded that those customers, who use internet banking for the longest time or who use more of its services, found internet banking very reliable.

Bhattacherjee (2002) identified that the importance of trust as a key facilitator of electronic commerce was increasingly recognized in academic and practitioner communities. Conflicting
conceptualizations of the trust construct in empirical research, inadequate attention to its underlying dimensions, causes, and effects and lack of a validated trust scale were identified as problems in empirical research and hence the study addressed these limitations in part by theoretically conceptualizing and empirically validating a scale to measure individual trust in online firms. The scale that was proposed tapped into three key dimensions of trust: trustee’s ability, benevolence, and integrity. An iterative testing and refinement procedure using two field surveys of online retailing and online banking users, led to a final seven-item trust scale that exhibited adequate levels of reliability, convergent validity, discriminant validity, and nomological validity.

Chellappa (2002) showed that consumers exhibited variability in their perceptions of privacy, security and trust between online and offline transactions. It was proposed that the perceptions of privacy and security are factors that affect the consumers’ trust in the institutional governance mechanisms underlying the internet. Two distinct empirical studies were conducted. And through successive refinement and analysis using the Partial Least Squares technique, the hypothesized relationships were tested. The study found that consumers’ perceived privacy and perceived security are distinct constructs but the effect of perceived privacy on trust in electronic commerce transactions is strongly mediated by perceived security.

Karjaluoto et al., (2002) conducted a study to bring out the factors underlying attitude formation towards online banking in Finland. The results showed that prior computer experience, prior technology experience, personal banking experience, reference group and attitudes strongly affect attitude and behavior towards internet banking, specifically, the relationship between personal banking experience and attitude was found to be critical.
Suh and Han (2002) studied the effect of Trust on consumer acceptance of internet banking using an extended Technology Acceptance Model with Trust, Perceived Usefulness, Ease of Use, Attitude and Intention used as factors. In the study trust was found to be one of the most significant beliefs in explaining customer’s attitude towards using internet banking. As suggested by the Technology Acceptance Model (TAM), customer perception of the usefulness and ease of use also affect attitude significantly. The study implied that customers rely on trust in online environments that processed sensitive information.

Wungwanitchakorn (2002) used the Decomposed Theory of Planned Behavior (DTPB) to study adoption intention of bank customers, of internet banking services. Among other factors, age, income, relative advantage were found to be factors influencing internet banking adoption.

Bradley and Stewart (2003) looked at retail banking and its adoption of online banking, particularly the factors driving and inhibiting adoption by banks. An international Delphi study confirmed the high level of importance of the internet for retail banking. The key factors that drive banks to adopt online banking were found as, adoption by other banks, competitive forces, consumer demand and the availability of technology. Working against adoption were banks' perceptions that the internet did not offer enhanced ability to deal with customers, as well as bank resistance to change their existing legacy systems and the resources required to adopt.

Gerrard and Cunningham (2003) studied the diffusion of internet banking among Singapore consumers. The study identified eight characteristics which influenced the rate of adoption. Two of these namely, accessibility and confidentiality were included for the study. The results showed that adopters of internet banking perceive
the service to be more convenient, less complex, more compatible to them and more suited to those who are computer proficient. Adopters were also found to be financially more innovative. The perceptions that adopters had about social desirability, confidentiality, accessibility and economic benefits were viewed no differently when adopters were compared to non-adopters.

Mattila (2003) used the data of a large survey in Finland where mature customers’ internet banking behavior was analyzed. Household income and education were found to have a significant effect on the adoption of the internet as a banking channel, so that over 30 percent of wealthy and well-educated mature males make e-banking their primary mode of making payments. Perceived difficulty in using computers combined with the lack of personal service in e-banking was found to be the main barriers of internet banking adoption among mature customers. Internet banking was also found to be more unsecured among mature customers than bank customers in general.

According to Rotchanakitumnuai and Speece (2003) customers in Thailand frequently do not trust internet technology for three reasons: security of the system, distrust of service providers, and worries about the reliability of the service.

Saleh (2003) examined internet security and its impact on trust and adoption of internet banking in the United States. The study was conducted to explore the factors influencing intentions to adopt internet banking services. The study addressed the impact of internet security on users’ trust and investigated the influence it had in the decision to adopt internet banking. The model was developed by incorporating trust into Moore and Benbasat (1991) instrument.
Wang et al., (2003), made an empirical study on the determinants of user acceptance of internet banking in Taiwan, using the Technology Acceptance Model (TAM) as a theoretical framework. According to TAM Perceived Ease of Use and Perceived Usefulness constructs are believed to be fundamental in determining the acceptance of various information technologies (IT). The study introduced “Perceived Credibility” as a new factor that reflects the user’s security and privacy concerns in the acceptance of internet banking. Based on a sample of 123 users from a telephone interview, the results strongly supported the extended TAM in predicting the intention of users to adopt internet banking. It also demonstrated the significant effect of computer Self-Efficacy on behaviour intention through Perceived Ease of Use, Perceived Usefulness and Perceived Credibility.

Akinci et al., (2004) conducted a descriptive study to develop an understanding of consumers’ attitudes and adoption of internet banking among sophisticated consumers in Turkey, an advanced developing country. Based on a random sample of academicians, demographic, attitudinal, and behavioural characteristics of internet banking users and non-users were examined. The analysis revealed significant differences between the demographic profiles and attitudes of users and non-users.

Al-Sabbagh and Molla (2004) found that the main drivers of adoption are Compatibility, Usefulness and Ease of Use. The extent of use is affected by lack of government support, poor quality of connection and page loading speed. Trust and face-to-face personal banking preference were found as major inhibitors of internet banking adoption.
Chang (2004) found that the adoption of internet banking is influenced by gender, age, marital status and the degree of exposure to internet banking as well as by the characteristics of the bank.

Gefen and Straub (2004) validated a four-dimensional scale of trust in the context of electronic products and revalidated it in the context of e-Services. The study then showed the influence of social presence on the dimensions of trust, especially benevolence, and its ultimate contribution to online purchase intentions. The study showed that e-Trust is multi-dimensional. The study also showed that e-Trust is not a single monolith belief but a set of beliefs of varying importance depending on their relevance to the expected outcome.

Keat and Mohan (2004) proposed an integrated research framework that considers the key findings of researchers analyzing trust in electronic commerce by utilizing key features of the TAM model in the context of internet shopping in Malaysia. The study reported that the Technology Acceptance Model (TAM) was a widely accepted information system acceptance model and has been successfully used in a variety of fields to assess users’ acceptance of technology. In the field of electronic commerce and trust building, the use of the Technology Acceptance Model, infused with the trust element by Gefen (2003) was perceived to be adequate and efficient to assess users’ trust levels and acceptance.

Kolodinsky et al., (2004) explored the factors that affect the adoption of, or intention to adopt three e-banking technologies and changes in these factors over time. Using a Federal Reserve Board commissioned data set; the study found that relative advantage, complexity/simplicity, compatibility, observability, risk tolerance, and product involvement are associated with adoption. Income, assets, education, gender and marital status, and age also affect adoption.
Adoption changed over time, but the impacts of other factors on adoption did not change.

Pikkarainen et al., (2004) analyzed consumer acceptance of internet banking using the Technology Acceptance Model. It was found that Perceived Usefulness and information on online banking on the website were the main factors influencing online-banking acceptance.

Shanmugam (2004) explored consumer’s adoption behaviour driven by the evolution of new, banking technology in Malaysia. The result implied that a social norm effect dominated Internet banking adoption. The profile of the internet banking adopter in Malaysia based on a large scale survey was also presented.

Shih and Fang (2004) used the Decomposed Theory of Planned Behavior (DTPB) to study internet banking in Taiwan, following the attitude, intention, behavior chain. The results found that relative advantage and complexity were related to attitude, and compatibility was not. Additionally Self Efficacy was found to influence intention through its influence on Perceived Behavioral Control.

White and Nteli (2004) studied internet banking in UK. Using trade-off analysis to interview 56 internet banking customers, they identified and ranked five key service quality attributes to enable them to find out why there are not more customers in internet banking. Cluster analysis revealed two groups of respondents. One group was most concerned about security-related issues, while the other group was more interested in convenience, speed and timeliness of the service.

Ainin et al., (2005) gave an overview of e-banking adoption in Malaysia. The study also examined different types of e-banking
products used by adopters, before describing characteristics of e-banking adopters. The study illustrated that there were more adopters among the younger age groups, among those with higher salaries and those holding higher positions.

Eriksson et al., (2005) studied customer acceptance of internet banking in Estonia using the Technology Acceptance Model (TAM). The factors that were considered were Trust, Perceived Usefulness, Ease of Use and use. The findings suggested that internet banking use increased in so far as customers perceived it as useful. The perceived usefulness is central because it determines whether the perceived ease of internet bank use will lead to increased use of the internet banking. The study also suggested that the models of technology acceptance should be reformulated to focus more on the key role of the Perceived Usefulness of the service embedded in the technology.

Islam (2005) investigated the relationships of Perceived Usefulness, Perceived Ease of Use, Perceived Credibility, customer attitude, and customer Adaptation of electronic banking in the context of one of the leading banking service providers in Bangladesh. It was stated that all the measured independent variables (i.e., Perceived Usefulness, Perceived Ease of Use, Perceived Credibility, and customer attitude) statistically and significantly correlated with customer adaptation of electronic banking.

Jaruwachirathanakul and Fink (2005) conducted a study to identify the factors that encouraged consumers to adopt internet banking services in Thailand, and to use the study’s findings to develop strategies for banks on how to maximize the rate of adoption. They presented internet banking adoption strategies for a developing country, Thailand using the Decomposed Theory of Planned Behavior. The findings revealed that attitudinal factors that appear to encourage the adoption of internet banking in Thailand the most were “Features
of the web site and Perceived Usefulness, while the most significant impediment to adoption was found to be Perceived Behavioural Control called “external environment”. The significant moderating factors were found as gender, education level, income, internet experience and internet banking experience, but not age. It is interesting to note that in this study, encouragement factors are those that can be controlled by banks, while impediment factors cannot be controlled by banks.

Kim and Kim (2005) conducted a study of online transaction Self-Efficacy, consumer Trust, and uncertainty reduction in electronic commerce transaction. The study explored a factor that influences trust during online transaction. Self-efficacy, which is an important factor in explaining motives and motivations of individual behaviors and choices, has an impact on trust building and uncertainty reduction. By incorporating Self Efficacy into electronic commerce research, the study expanded the understanding of what factor plays a role in reducing uncertainty. The results show that Self-Efficacy affects trust in the web vendor and, consequently, positively influences the respondent’s purchase intentions.

Kim et al., (2005) investigated the determinants of internet banking adoption based on an individual’s benefits and costs of adopting Internet banking. Using data from the 2001 Survey of Consumer Finances, the study estimated an adoption model for Internet banking. The findings show that consumers’ ability, attitude and opportunity cost of time play a significant role on the decision of adopting Internet banking. Younger and well-educated consumers are more likely to adopt Internet banking. However, when individual’s age was associated with the level of education, the age effect varied across education groups. The findings show that there are significant
differences in terms of the demographics of these households that use different payment methods.

Kracher et al., (2005) conducted a study for understanding trust in electronic commerce. The study provided an overview of the existing trust literature from the fields of philosophy, psychology, sociology, management, and marketing. It brought out the fact that the antecedents of online trust deserve further exploration as focus in e-commerce research till then was only on external factors. Hence, when information technology specialists can go a long way towards ensuring trust in e-commerce by creating technologies that are trustworthy, internal factors must also be elucidated. Regardless of which model is accepted, offline trust as a foundation for building a strong and accurate understanding of online trust in e-commerce must also be considered.

Lassar et al., (2005) examined the adoption of e-banking and how personal innovation attitudes, internet-related Self-Efficacy, type of web use, and demographic characteristics affect adoption. Rooted in the TAM theoretical tradition, the empirical model tested not only provides important insights toward understanding and explaining the consumer-based phenomenon of e-banking, but also served to empirically evaluate the TAM framework in this emerging and important context. Overall, the model supported the TAM perspective in that, prospective users' overall feelings or attitudes toward using an on-line banking system represent significant determinants as to whether or not they will ultimately use the internet-based banking procedure.

Lee et al., (2005) segmented the adopter in the diffusion of internet banking into three categories i.e. “persistent non-adopters” and “prospective adopters” and adopters based on consumers’ motivations or intentions to adopt internet banking. Selective
adoption factors (perceived attribute importance of internet banking, perceived risk, compatibility with existing bank services, and compatibility with the internet and computer technologies) were used to predict individuals’ adoption status through multinomial logit modeling.

Li and Laforet (2005) investigated the market status for online/mobile banking in China, by studying consumer attitudes towards online and mobile banking in China. The demographic, attitudinal and behavioural characteristics of online and mobile banking users were examined. The results showed that Chinese online and mobile bank users were predominantly males, not necessarily young and highly educated, in contrast with the electronic bank users in the west. The issue of security was found to be the most important factor that motivated Chinese consumer adoption of internet banking. Main barriers to internet banking were perception of risks, computer and technological skills and Chinese traditional cash-carry banking culture.

Salam et al., (2005) presented a framework for exploring the importance of nurturing consumer trust in the context of e-commerce. Trust was identified as a complex social phenomenon reflecting technological, behavioral, social, psychological, and organizational interactions among human and nonhuman technological agents. The model presented was grounded in existing theories like TAM and the TRA, providing the first steps toward understanding trust issues.

Sukkar and Hasan (2005) examined the appropriateness of the traditional TAM model for the study of e-commerce in a developing country. The study discusses the literature and presents the preliminary results of an investigation into the penetration of internet banking in Jordan, a strategic developing country of the Middle East. The research results were used to suggest and evaluate modifications.
to the TAM to make it more relevant for research on technological acceptance in less-developed and developing countries. The study suggests that the Technology Acceptance Model (TAM), which is the basis of much of the research into IT diffusion, may be more useful if it is extended to include specific issues of culture and trust on the customer side and more basic elements of quality in technology usability and service on the side of the banks.

Sulaiman et al., (2005) provided an overview of internet banking adoption in Malaysia. The study described characteristics of internet banking users. The study also illustrated that there were more adopters among the younger age groups, among those with high salaries, and those holding higher positions.

Walker and Johnson (2005) undertook a study in Australia, to illuminate the reasons for using internet banking services, and establishing whether or not regular use of these services necessarily implies loyal patronage. Significantly, it was found that regular use does not necessarily imply willing or satisfied use, or that the customer has a sense of relationship with the service provider.

Wan et al., (2005) made a study to investigate the factors that influenced Hong Kong bank customers’ adoption of four major banking channels i.e. Branch banking, ATM, telephone banking, and internet banking. Specifically it aimed to focus on the influences of demographic variables and psychological beliefs about the positive attributes possessed by the channels. Psychological beliefs about the extent to which a channel possessed certain positive attributes were more predictive of adoptions of ATM and internet banking.

Wingreen and Baglione (2005) established a causal relationship between structural assurance and both vendor trustworthiness and technology trustworthiness. The definitions of Structural Assurance
and institution-based trust were expanded to include the element of security measures employed by the marketplace technology. Situational normality demonstrated a causal relationship with technology trustworthiness and with vendor trustworthiness, the latter only when the covariates of familiarity with the internet and a person’s initial trust were controlled.

Alsajjan and Dennis (2006) introduced a tentative conceptual framework by integrating trust into the Technology Acceptance Model (Davis, 1989). The conceptual framework suggested that trust has a striking influence on user willingness to engage in online exchanges of money and personal sensitive information. Detailed literature about online banking and trust was provided. TAM was discussed in depth and external variables suitable for the online banking context were suggested.

Cheng et al., (2006) made investigations on how customers perceive and adopt internet banking (IB) in Hong Kong. A theoretical model based on the Technology Acceptance Model (TAM) with an added construct perceived web security was developed and empirically tested to predicting customers’ behavioral intention of adopting IB. The data was analyzed using Structured Equation Modeling (SEM) to evaluate the strength of the hypothesized relationships among the constructs, which included Perceived Ease of Use and Perceived Web Security as independent variables, Perceived Usefulness and Attitude as intervening variables, and Intention to use as the dependent variable. The results provided support to the extended TAM model and confirmed its robustness in predicting customers’ intention of adoption of IB.

Gan et al., (2006) conducted a mail survey of 1,960 households in New Zealand to understand consumers’ choice between electronic and non-electronic banking. The decision to use electronic banking
was hypothesized to be a function of service quality dimensions, perceived risk factors, user input factors, price factors, service product characteristics, individual factors and demographic variables such as age, gender, marital status, income etc. Logistic regression was used to analyze the data. The findings reveal that the service quality, perceived risk factors, user input factors, employment, and education are the dominant variables that influence consumer’s choice of electronic banking and non-electronic banking channels.

Flavian et al., (2006) analyzed how consumers’ perceptions of their traditional bank influence the decision to adopt the services offered by the same bank on the internet. The data was collected by means of a personal survey conducted with customers of various banks. A binomial logistic regression process was analyzed to assess the influence of trust, incomes, age, sex, education and employment on the adoption of the financial services offered by a traditional bank on the internet. The results showed that consumer trust in a traditional bank, as well as incomes, age, sex, are factors that influence consumers’ decision to work with the same bank via the internet.

Gerrard et al., (2006) made a qualitative study on why consumers are not using internet banking. A survey was used to acquire data from 127 consumers who were not internet bank users. Using a content analysis procedure, eight factors were identified which explain why consumers are not using internet banking. In the order of frequency, the factors identified were: perceptions about risk; the need; lacking knowledge; inertia; inaccessibility; human touch; pricing and IT fatigue. The findings provide a framework for creating a strategy to enhance adoption rates.

Hernandez and Mazzon’s (2006) study proposed a new method to investigate adoption of new technologies and tested the method on
internet banking adoption in Brazil. A total of 600 respondents living in one of the biggest cities in Brazil were sampled for interviewing. The adjusted coefficient of determination in the multiple linear regression equation (independent variable: intention to use / continue to use internet banking) was 60 percent and the main effects of the eight variables proved significant (relative advantage of control, compatibility with lifestyle, image, subjective norm, self efficacy, relative advantage of security and privacy, results demonstrability, and trialability). The findings showed that the variables that influence the intention to use/ continue to use internet banking are not exactly the same as those that influence actual adoption. Specifically, the results seemed to suggest that intention to use internet banking is influenced solely by people’s beliefs about internet banking, while its actual adoption is influenced also by individual characteristics.

Lichtenstein and Williamson (2006) conducted an interpretive study of Australian banking consumer experiences with the adoption of internet banking. The research provided an understanding of how and why specific factors affect consumer decision of whether or not to bank on the internet. A theoretical framework that conceptualized and linked consumer-oriented issues influencing adoption of internet banking was provided. The findings suggested that convenience was the main motivator for consumers to bank on the internet, while there was a range of other influential factors that may be modulated by banks. Gender differences were also highlighted. Finally, the study suggests that banks will be better able to manage consumer experiences with moving to internet banking if they understand that such experiences involve a process of adjustment and learning over time, and not merely the adoption of a new technology.

Man’s (2006) research focused on those who have conducted online banking in any financial institution. The results showed that
trusting beliefs had the strongest relationship for users’ intention to process transaction online. The second important determinant of trusting intention was found to be perceived site quality. Structural assurance had the strongest relationship for trusting beliefs, followed by familiarity, perceived site quality and situational normality. In addition disposition to trust showed significant to structural assurance.

Md Nor and Pearson (2006) utilized the Decomposed Theory of Planned Behavior (DTPB). The decomposition approach adopted by the model provided a more complete set of antecedents that better explained the intention to adopt internet banking. The model was extended by incorporating trust and examining its influence on an individual’s intention to adopt the technology. The study found that all main beliefs including trust were found to have significant effect on an individual’s intention to use Internet banking.

Ndubisi and Sinti (2006) examined consumer attitudes, system’s characteristics and internet banking adoption in Malaysia. The research framework linked attitudinal constructs such as importance to internet banking needs, compatibility, complexity, trialability, and risk to internet banking adoption. The impact of internet banking website design characteristics on adoption was also verified, using an online questionnaire. The results of the study revealed that the attitudinal factors play a significant role in internet banking adoption. Moreover, utilitarian orientation of the website rather than hedonic orientation had significant influence on adoption.

Ok and Shon (2006) aimed at analyzing the determinants of internet banking usage behavior in Korea. The study compared two models that predicted an individual’s intention: Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB). The results showed that internet banking users’ attitude and their perceived
behavioral control play a vital role in influencing the behavioral intention of internet banking. In addition, attitude, subjective norm, and perceived behavioral control were in turn, influenced by attitudinal belief structures, normative belief structures, and control belief structures, respectively. Both TRA and TPB predicted behavioral intention to use the internet banking quite well, with TPB having a slight empirical advantage.

Ramayah et al., (2006) used a structured questionnaire to collect data through a convenience sampling from 180 banking customers in the state of Penang, Malaysia. The study revealed that the banks had achieved considerable success as far as awareness was concerned, as a vast majority of the respondents reported that they were aware of internet banking. Although awareness was high, this had not translated into actual use, as only 24.4 percent had some internet banking experience. Using discriminant analysis it was found that internet banking users had more prior internet experience, had positive views on ease of use, were more aware of the internet banking services and benefits and also had less security concerns as compared to non-users of internet banking.

Rose and Fogarty (2006) conducted a study to test extensions of the Technology Acceptance Model (TAM) aimed at predicting senior consumers’ acceptance and use of self-service banking technologies (SSBTs). A survey methodology was employed to gather data from 208 seniors on variables captured by the extended TAM. Path analysis indicated that self efficacy, technology discomfort, perceived risk and personal contact were determinants of perceived ease of use and perceived usefulness and also direct and indirect determinants of attitude towards and intention to use SSBTs.

Rugimbana (2007) made a study on the young consumers’ underlying motives for their choices of electronic banking in Australia,
and the relative importance of these motives as predictors of their choice. Using several quantitative techniques, the study generated empirical evidence which suggested that cultural variables at the individual level were as reliable as, and in cases more reliable than other proven predictors when predicting generation Y’s internet banking product preferences. The study showed that cultural values and perceptual variables may have significant implications for marketing practice particularly where generation Y is concerned. Given that e-banking services are designed essentially to suit individuals who prefer convenience, quicker service, more frequent and less face-to-face retail banking services, the study reveals that that generation Y individuals more likely to use these e-banking services, would be those who are socialized in more individualistic and consumption orientations.

Shih and Fang (2006) replicated and expanded the Theory of Reasoned Action (TRA) to probe the attitude and subjective norm factors that would influence the adoption intention of internet Banking (IB). Network quality attributes were also used to enhance the understanding of consumer attitude towards internet banking based on TRA (named ‘extended TRA’). Data was gathered from 425 potential users of internet banking. Structural equation modeling was used to analyze the responses. The analytical results generally supported TRA and extended TRA to provide a good fit to the data. The extended TRA explained more of the variance in consumer attitude and behavioral intentions than those in TRA in the context of Internet banking. Additionally, attitude was identified as significantly related to the intention to adopt internet banking, while subjective norm was not; network quality attributes including information quality, transaction speed, and security play significant roles in influencing attitude.
Amin (2007) conducted a study on internet banking adoption among young intellectuals in Malaysia. The aim of the study was to study technology acceptance of internet banking among undergraduate students in Malaysia, using the modified Technology Acceptance Model (TAM) as the theoretical framework. The results suggest that Perceived Usefulness, Perceived Ease of Use, Perceived Credibility had significant relationship with behavioural intention.

Benamati and Serva (2007) examined the role of trust and distrust in online banking. A framework for categorizing existing and potential online banking users based on their trust and distrust of online banking was presented. The study brought out the point that some customers will readily adopt online banking, some will take longer, and some will never accept it. In the spirit of trust and distrust, customers will accept those channels with which they are comfortable and reject those that instill fear and concern. Effective banks will determine how to nurture relationships with their customers within each of these channels, while taking advantage of selling customers added services that they want or need.

Connolly and Bannister (2007) investigated the existence and importance of specific factors that are thought to predict the generation of consumer trust in the internet shopping context in Ireland. The study provided evidence that Irish consumers’ trust in Internet shopping is the result of specific factors, the first of which relates to the vendor’s Perceived Integrity, and the second of which relates to the vendor’s Perceived Competence. Both of these factors are within the control of the online vendor. Similarly, by providing a web interface that is easy to use, is reliable and secure, and that anticipates customers’ information needs, it is possible for the online vendor to convey a perception of competence.
Durkin (2007) as a part of a larger study explored the impact of the internet on bank–customer relationships. The paper reported on key findings which shed light on such motivators and inhibitors for online banking registration. The results showed that convenience and reassurance about security were the most important considerations for customers in registering for internet banking in a particular bank.

Heaney (2007) conducted an empirical research on internet banking behavior and perceptions of generation X and Y in Australia. The study revealed that more Generation X were internet banking users compared to Generation Y. Internet banking users perceive their banks as providing higher quality services compared to non-internet banking users. A large majority of non-users never tried internet banking at all. Security and privacy concerns were cited.

Lauer and Deng (2007) applied Mayer et al.’s trust model to the internet context. A model was presented linking privacy policy, through trustworthiness, to online trust, and then to customers’ loyalty. The findings suggested that consumers’ trust in a company is closely linked with the perception of the company’s respect for customer privacy. Trust in turn is linked to increased customer loyalty that can be manifested through increased purchases, openness to trying new products, and willingness to participate in programs that use additional personal information.

Md Nor and Pearson (2007) conducted a study to test empirically the influence of trust together with some of the attributes of the Diffusion of Innovation theory, on Internet banking acceptance in Malaysia. A Structural Equation Modeling was employed to analyze the data. The results showed that trust, relative advantage, and trialability, have a significant effect on attitude toward using Internet banking. Consequently attitude significantly affects the intention to use internet banking.
Sattabusaya (2007) presented a research design and methodology approach for key factors that determine internet banking adoption in Thailand. The main objective of the research was to identify the key factors that determine success and move intention of internet banking users toward their actual behavior. The research design was based on positivistic paradigm with a triangulation approach in the process of collecting and analyzing data. The data was collected through 1,200 survey questionnaires and nine semi-structured interviews of top managers and senior consultants of the participated banks who involved with Internet banking projects.

Yaobin and Tao (2007) integrated TAM with initial trust to explain online shopping behavior of Chinese consumers. The results demonstrated that perceived usefulness, consumers’ trust propensity, website security and vendor reputation have significant effect on initial trust. Perceived usefulness fully mediated the relationship between perceived ease of use and initial trust as well as the relationship between perceived ease of use and purchase intention.

Al-Hajri and Tatnall (2008) considered various factors that might act to determine whether a given technology is likely to be adopted by the banking industry in Oman in comparison to Australia. Data was collected from interviews with bank managers in each country, based on a consideration of each bank manager’s perceptions of four factors that might affect their decisions to adopt, or not adopt Internet technologies: Relative Advantage, Organizational Performance, Customer/Organizational Relationship and Ease of Use. The study thus brings out the enablers and the inhibitors of Internet technology adoption in the Omani banking industry compared with those in the Australian banking industry.

Buttner and Goritz (2008) conducted a web-based study in the context of internet shopping. Results showed that trustworthiness
promotes both intention to buy and actual financial risk taking. Trustworthiness partially mediated the influence of perceived risk on intention to buy. The results from the scale development challenge multidimensional conceptualizations of trust; comparing this finding with other studies suggests that the duration of the relationship might moderate the dimensionality of trust.

Chandio (2008) conducted a research to understand user acceptance of online banking information systems in Pakistan. This research extended the Technology Acceptance Model. Four factors were added to the TAM. These factors are information quality, system quality, trust and awareness.

Gounaris and Koritos (2008) reexamined the presumed dominant role of usability attributes (i.e. usefulness and ease of use) in predicting consumer adoption of a technologically based innovation internet banking (IB), by using an extended framework, which, apart from usability, incorporated the social and psychological aspects of the adoption process. Results, underscored the role of social factors as predictors of potential IB adopters, whereas the demographic profile of future IB adopters displayed important differences compared to that of those already using internet banking.

Kaleem and Ahmad (2008) studied bank employees perceptions of the potential benefits and risks associated with internet banking in Pakistan. The results suggested that bankers in Pakistan perceived internet banking as a tool for minimizing inconvenience, reducing transaction costs and saving time, similarly, they believe that electronic banking increases the chances of government access to public data, increases the chances of fraud, and that there is a lack of information security. Bank personnel profiles were further analyzed in relation to their perceptions, to identify different segments among them.
Qureshi et al., (2008) studied consumer acceptance of online banking in Pakistan, a developing country. In Pakistan the adoption ratio was found to be very high. There were many banks which provided internet banking facilities to customers. The basic purpose of the research was to evaluate the customer acceptance of online banking. The study revealed that almost 50 percent of the clients shifted from traditional banking to online banking systems. The core reason for this shift was perceived usefulness, security and privacy provided by online banking.

Reid and Levy’s (2008) study contributed to the extensive body of research of technology acceptance by attempting to validate the integration of trust and computer self-efficacy (SE) constructs into the TAM model in the context of banking information systems in Jamaica based on Structural Equations Modeling (SEM). The results indicated that trust is a significant construct impacting both perceived usefulness and perceived ease-of-use. Additionally, the test for gender differences indicated that across all study participants, only trust was found to be significantly different between male and female bank customers.

Shi et al., (2008) drew upon the Social Contagion Theory and Institutional theory, and proposed a model to examine three social environmental factors of normative, coercive and mimetic pressures within the internet banking (IB) context. The model was tested using survey data from 124 respondents. The results revealed that normative and coercive pressures significantly influence the attitude and intention of adopting IB, while mimetic pressures appear not to. Attitude plays a mediating role between institutional pressures and IB adoption.
2.3 Review of Internet Banking Adoption Studies in India

In the last decade, Mookerji (1998), Pegu (2000), Gupta (1999) and Dasgupta (2002) found that internet banking was becoming popular in India. These studies expected that a large sophisticated and highly competitive internet banking market was to develop. According to the study by Dasgupta (2002), almost all the banks operating in India were having their bank websites but only a few banks provide transactional internet banking in 2002.

Rao and Prathima (2003) provided a theoretical analysis of internet banking in India and found that as compared to banks abroad, Indian banks offering online services have a long way to go. The study revealed that, for online banking to reach a critical mass there has to be sufficient number of users and the sufficient infrastructure in place.

Mukherjee and Nath (2003) concentrated on the concept of trust in online relationship marketing in India and tested a model of trust in which “shared value”, “communication” and “opportunistic behaviour” were taken as antecedents of trust. The study concluded that both shared value and communication played a significant positive role on trust and that trust had significant positive influence on commitment.

Kannabiran and Narayan (2005) discuss the experiences of a private-sector bank in deploying internet banking and e-commerce in India. Strategic alignment of business and IT strategies, planning and implementation of e-banking initiatives and management of benefits were captured, along with key contributions to development.

Srivastava (2007) studied consumers’ perception on usage of internet banking in India. The study focused on the factors that drive consumers to use internet banking. Consumers’ acceptance of
internet banking and improving usage rates was another area of focus. The research found that if skills of consumers were upgraded, they will be more willing to use internet banking. In addition, the study showed that inhibitory factors like trust, gender, education, culture, religion, security and price can have only a minimal effect on the consumer mindset towards internet banking.

Ravi et al., (2007) sought to profile users and non users of internet banking in India using intelligent techniques. The study investigated and identified potential customers based on the profiles of existing customers so that these profiles may be used to target and attract potential customers. Significant determining variables were determined from literature especially from the Theory of Reasoned Action(TRA) and the Theory of Planned Behavior (TPB), Technology Acceptance Model(TAM), and Diffusion of Innovations (DOI) theory. The variables were ranked according to their level of influence on usage of internet banking in the order of, Intention, Beliefs, subjective norms, Trust in the bank, Perceived Usefulness, security and perceived ease of use.

Singh and Malhotra (2007) studied the determinants of internet banking adoption by banks in India using logistic regression technique. The results showed that larger banks, banks with younger age, private ownership, and higher expenses for fixed assets, higher deposits and lower branch intensity evidence a higher probability of adoption of the new technology.

Prema and Clement (2010) extended the Technology Acceptance Model by incorporating Perceived Self-Efficacy and Awareness as factors influencing consumer’s internet banking usage intentions through its effect on perceived Usefulness, Perceived Ease of Use and Perceived Security. The extended TAM was supported in predicting internet banking usage intentions.
2.4 Conclusion

To summarize, Technology Acceptance Model has been used in various context to predict internet banking adoption. The review reveals that there is not one single study in India discussing the key predictors of consumer adoption of internet banking in India. Further the integration of trust into the TAM model and bringing out a set of its antecedents in the Indian context requires special mention, as trust is found to be one of the key factors in internet technology adoption. It can also be seen from the review that Awareness of internet banking and Self Efficacy are widely mentioned as influencing internet banking adoption by consumers. Additionally demographic factors like age, gender, income and education have mixed results as far as influencing internet banking adoption is concerned.

The present study is an attempt to fit an extended Technology Acceptance Model in the internet banking context in India by integrating Consumer Trust on Internet Banking, Perceived Security, Awareness and Self Efficacy as additional variables. The antecedents of consumer trust in internet banking, drawn from the review are also presented and tested through the extended model. The detailed research model is presented in the next chapter.