CHAPTER – II

REVIEW OF LITERATURE

2.1. INTRODUCTION

The review of literature plays an important role in establishing any research work. Review of previous work brings in depth of knowledge in any field. The objective of such review is to understand the importance of the topic and find out the research gaps, if any, in the chosen area. Thus the review of literature in the present study consists of published research based and conceptual based studies available in India as well as abroad. There are a number of studies related to various banking services in India, there are only limited number of studies that sought to study the growth of recent technological banking services at the international level, as this study is only related to nationalised banks. A very few studies based on electronic banking channel were conducted only in metro cities. No studies have been conducted in the semi-urban and rural parts of the country. In order to fill the research gap, the present study has been conducted. This chapter presents the review of literature on past research studies and related works with respect to Self-Service Technology services or e-banking services in India and abroad.

2.2 CONSUMER ADOPTION OF SELF-SERVICE TECHNOLOGIES

Samson Yusuf Dauda and Jongsu Lee (2015) in their study used conjoint analysis and stated preference methods with discrete choice model to analyze the technology adoption pattern regarding consumers' preference for potential future online banking services in the Nigerian banking industry. As a foundation for policy making, this research has incorporated heterogeneity into the models using a random coefficient model as well as interaction between the primary bank services attributes and individual
demographics and characteristics and the results are consistent with the conventional rank-ordered logistic model. The result revealed that to increase efficiency and strengthen competitiveness, banks need to promote smart and practical branded services especially self-services while promoting a universal adoption of e-banking system services that add entertainment or extra convenience to customers such as ease of usage including digital wallet, real-time interaction (video banking), ATMs integrated with smart phones, website customization, biometric services, and digital currency. These services can contribute to an increasing adoption of online services.

**Kholoud Al-Qeisi and Ahmed Hegazy (2014)** in their paper investigate whether information technology adoption/usage is ubiquitous, especially technology imported into nonindustrial nations. The measurement model revealed that the model is plausible under current usage conditions. The results showed that performance expectancy compared to effort expectancy has more impact on behavioural intention and also standardized total effect. Behaviour intention has the highest direct impact on usage behaviour while performance expectancy has the biggest indirect effect on usage behaviour.

**Nitin Nayak (2014)** in his review paper explores the factors that influence the adoption behaviour of mobile banking services by Indian consumers. His paper also discussed the various steps that mobile banking providers should take to increase their mobile banking services user’s database. Perceived ease of use and perceived usefulness are found to be the important factors to influence the consumer intention to adopt mobile banking. Perceived cost is also an important factor and Trust is also an important point of concern. It is also found that customers will adopt mobile banking if they find it easy to
use and understand. The users of banking services on their mobiles are highly satisfied ones, because of several reasons. The first reason is the availability of facilities of balance checking, access to account and card statement, checking recent transactions, ordering of cheque books, blocking of lost cards, etc.

Ali Reza Montazemi and Hamed Qahri Saremi (2014) in their study bring out conceptual and empirical clarity to the factors affecting online banking adoption based on the systematic review of the online banking adoption literature and the SEM analysis of two structural models pertaining to pre- and post-adoption of the online banking. Their findings contribute to the online banking adoption literature by bringing conceptual and empirical clarity to the factors affecting online banking adoption and illustrating the distinction between them as well as their homological relationships based on the stage of the online banking adoption (i.e., pre- and post-adoption of the online banking). Furthermore, the study demonstrates the factors drawn from the extant online banking adoption literature that do not affect the pre- or post-adoption of the online banking, when assessed simultaneously with the other factors in one structural model. This finding along with the total effect of each factor on the pre- and post-adoption of the online banking provides a sound basis for determining the relative importance of each factor towards the online banking adoption at different stages of the adoption. On the whole their findings have insightful implications for the practitioners, such as banks, by shedding light on the areas to which they should give special attention in order to promote the consumers' pre- and post-adoption of their online banking systems.

Ramdhony Dineshwar and Munien Steven (2013) in their paper entitled An Investigation on Mobile Banking Adoption and Usage: A Case Study of Mauritius
investigated m-banking adoption and usage in Mauritius; a service relatively new in the island. Out of the 211 people who responded to the survey, only 169 responses were deemed to be usable. It was found that awareness of local m-banking services is quite high and usage level is reasonable. Convenience, time and effort savings, privacy, ubiquitous access to banking services, compatibility with lifestyle and banking needs were identified as the main factors motivating mbanking adoption. Perceived security risk and reliability were found to be the main obstacles to m-banking usage. It was also found that m-banking usage is not associated with age, gender and salary. There is, however, an association between education and m-banking usage.

Ravi Kumar V.V and Bose S.K (2013)\(^6\) in their paper analyze the factors influencing Management students’ intention to use internet banking services. The Management students perceived that Internet Banking would prove very convenient and time saving and therefore be very useful to them. The management students have indicated that website navigation should be pleasant for Internet Banking. Overall, the management students seem inclined to use Internet Banking and it is up to the Banks to provide a safe and pleasant experience to attract and retain this high potential market segment as their customers.

Zhang Xiaoren, et al., (2013)\(^7\) in their study creatively divided SSTs into financial and specialty SSTs based on product function. Better applications of SSTs were chosen in China to verify the different factors and effects of adoption behaviours in the technology acceptance model. The research results show that the perceived risks and security are relatively high, so the customers are worried about their potential loss in self-service. They also found that perceived ease of use and perceived enjoyment have more
significant impacts on ABM than ATM. Therefore, for the technology that is to be substituted, the customers care more for the enjoyment and ease within service than services themselves. The goal of innovation is to improve customers, feeling and satisfaction by providing more personalized, friendly functions. The self-efficacy and technology readiness for adoption effects of ATM are relatively significant and the customers generally have a psychological fear of complex technology. The research also shows that the facility conditions significantly affect the adoption behaviour of SSTs; so technology providers should focus on providing operation instructions for customers. However, for the specialty SSTs deployed in particular place, the good conditions of facilities will not contribute to their usage.

Carolina Martins, et al., (2013)\(^8\) in their study seem to support some relationships of unified theory of acceptance and use of technology UTAUT, such as performance expectancy, effort expectancy, and social influence, and also the role of risk as a stronger predictor of intention. The results of the model showed that, contrary to our expectations, the effect of facilitating condition (FC) construct from UTAUT over usage (UB) was not significant. This suggests that our respondents are not concerned about the surrounding environment (necessary infrastructures, knowledge, capabilities, etc.) to influence their usage of Internet banking. The findings of this study revealed that perceived risk is an important factor affecting end-user intention to use Internet banking. With a low magnitude, SI also showed an effect on BI, meaning that our respondents are concerned about environmental factors such as the opinions of user’s friends, affecting their intention to adopt Internet banking. The impact of BI on usage behaviour (UB) was also substantial, which indicates that Internet banking users are more likely to use the
system if they had the intention to use it. Regarding the perceived risk part of the model, it has demonstrated evidence for a second-order composite perceived risk variable. Performance, financial, time, and privacy risks proved to be the most salient concerns for perceived risk, that is, the ones related with performance. Social and psychological risks were less salient. The negative effects of PCR over BI and PE were also demonstrated.

Ankit Kesharwani and Radhakrishna (2013)\(^9\) in their article entitled “Drivers and Inhibitors of Internet Banking Adoption in India” reviewed the most seminal studies in the area of diffusion of innovation and made an attempt to do an empirical research that looked into the factors that drive and inhibit internet banking usage in India. This paper hypothesized that apart from perceived ease of use and perceived usefulness; there could be other factors that can affect internet banking adoption in India. Perceived risk is a function of customers’ general perception of security and privacy issues, social influences (image of service in society, effect of news and media), and performance (perception about compatibility with banking transactions). The results suggest that acceptance and usage of internet banking services can turn into a vital concern for future research, as the drivers overcoming the inhibitors over time at an influencing rate. Moreover, the study also compares the findings with existent diffusion of innovation literature and identified several additional factors that can affect internet banking adoption in India.

HRD Abadi, et al., (2013)\(^10\) in their exploratory study made an attempt to investigate the factors that influence Isfahanian’ intention to adopt mobile banking by extending the renowned framework of Technology Acceptance Model (TAM) by additionally examining the effects of compatibility, trust and perceived risk on behavioral
intention. In the survey, factors that may affect Isfahanian mobile phone users’ to adopt mobile banking services were examined. Factors such as perceived usefulness (PU), perceived ease of use (PEOU) and compatibility were found positively related with the intention to adopt mobile banking services. Compatibility not only had a strong direct effect but was also identified as an important antecedent for perceived ease of use and perceived usefulness. However, trust was the only factor found insignificant. As expected, perceived risk (PR) was negatively associated with the mobile banking adoption.

Aboelmaged, M and Gebba, T. R (2013)\textsuperscript{11} in their article titled “Mobile banking adoption: an examination of technology acceptance model and theory of planned behavior” aimed at extending our understanding regarding the adoption of mobile banking through integrating Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). The results indicated a significant positive impact of attitude toward mobile banking and subjective norm on mobile banking adoption. Surprisingly, the effects of behavioral control and usefulness on mobile banking adoption were insignificant. Furthermore, the regression results indicated a significant impact of perceived usefulness on attitude toward mobile banking while the effect of perceived ease of use on attitude toward mobile banking was not supported.

Mohammad O. Al-Smadi (2012)\textsuperscript{12} in his study aimed to identify and understand factors that affect bank customers' use of electronic banking services. The study integrates technology acceptance model (TAM) with the theory of planned behavior model (TPB) and incorporates five cultural dimensions and perceived risk to propose a theoretical model. The main findings of the study includes uncertainty avoidance has a
positive and significant impact on perceived ease of use and perceived usefulness. The result also showed that one cultural dimension (uncertainty avoidance) has a positive and significant impact on perceived usefulness and perceived ease of use. The results also revealed a positive and significant impact of perceived risk on the customers' attitudes to use electronic banking services. Final results of the study showed that subjective norm and perceived behavioral control have a positive and significant impact on customers' intention toward using electronic banking services.

Alhaji Abubakar et al., (2012)\textsuperscript{13} in their paper entitled “An Exploratory Study on Adoption of Electronic Banking: Underlying Consumer Behaviour and Critical Success Factors.” investigate the factors that influence the consumer adoption of Electronic banking in Nigeria and found that there is a need to conduct research on Electronic banking adoption behaviour. The study examined the relationship between Electronic banking adoption and the determining factors for critical success of Electronic Banking in Nigeria. The results showed that the relevant factors that determined the adoption of Electronic banking in Nigeria include the level of its six factors, namely awareness, ease of use, security, cost, reluctance to change and accessibility. The results of the study showed that four factors examined are significantly important to the adoption of Internet banking in Nigeria. However, perceived ease of use and reluctant to change are found to be insignificant in determining its adoption. The study provided insightful understanding in academic staff and non academic staff perception about Electronic banking adoption in their banking transactions.

Akturan. U and Tezcan. N (2012)\textsuperscript{14} in their study titled “Mobile banking adoption of the youth market: Perceptions and intentions” aimed to investigate
consumers’ mobile banking adoption through an integration of the technology acceptance model (TAM) with work on perceived benefits and perceived risks. It was found that perceived usefulness, perceived social risk, perceived performance risk and perceived benefit directly affect attitudes towards mobile banking, and that attitude is the major determinant of mobile banking adoption intention. In addition, no direct relationship between perceived usefulness and intention to use, perceived ease of use and attitude, financial risk, time risk, security/privacy risk and attitude was detected.

Prerna Sharma Bamoriya and Preeti Singh (2012) in their study entitled “Mobile banking in India: Barriers in adoption and service preferences” focused on the barriers in adoption of mobile banking. It further focused on preferred services by the mobile banking customers and influence of demographic variable on mobile banking service adoption. A cross section descriptive design was adopted and data collected was subject to Product moment correlation, Oneway Kolmogorov-Smirnov test and Frequency analysis. Findings suggested that customers’ security concern is the major barrier in adopting mobile banking services.

Rahmath Safeena, et al., (2011) in their study consider five factors perceived usefulness, perceived ease of use, subjective norm, consumer awareness about mobile banking and perceived risks associated with mobile banking. This study also points out that these factors have a strong and positive effect on customers to accept mobile banking system. Perceived usefulness, ease of use and consumer awareness has positive impact on the intention to adopt mobile banking while perceived risk has negative impact on it. When online banking is perceived as useful, customer’s intention to adopt it would be greater. Likewise bank customers are likely to adopt mobile banking when it is easy to
use. Social influence has positive effect on the use of mobile technology as the individuals think that using the advanced technology will improve his image and status in the society and also it improves his performance. This shows that bank customers anchor their online banking adoption intention to the beneficial outcomes and ease of use process of the system. The result of this study shows that perceived usefulness, perceived ease of use, subjective norm, consumer awareness and perceived risk are the important determinants of mobile banking adoption. This study meets the desired objective; but it suffers from one setback. This study concludes that majority of customers are accepting online banking because of many favorable factors. Analysis concludes that usefulness, ease of use, subjective norm, awareness and risks related to it are the main perceived factors to accept online banking system. These factors have a strong and positive effect on customers to accept mobile banking system.

Zaid Al-Baghdadi et al., (2011) in their article entitled “Do We Really Need to Adopt Electronic Banking?” gave an answer to the above said question. Internet banking, ATM, and phone banking substitute each other. If firms give more importance to one of these alternatives, less importance can be given to the others, because the customer profile of the channels are similar. Internet banking achieves high success rates through coordination with brick and mortar and bank branches in stores. Internet banking offers ease of use and access to the customers. Many people know how to use Internet and have the opportunity to access either from their workplace or from their home. Customers will also benefit from the convenience, speed, and round-the-clock availability of Internet banking. The customers feel of unrestricted while using Internet banking stated that willingness to use Internet banking depends on the expectations of accuracy, security,
network speed, user-friendliness, user involvement, and convenience. User involvement usually means the control the individual can exercise over a process. The Internet banking design provides customers to see operation alternatives more easily stated that customers want greater convenience and accessibility, which is reflected, for example, in an increase in the number of operation options being offered.

**Rahmath Safeena et al., (2011)**

in their study determined the factors influencing the consumer’s adoption of internet banking in India and hence investigated the influence of perceived usefulness, perceived ease of use and perceived risk on use of IB. Findings referred to the fact that consumers use online banking for the benefits and also due to its easiness in use which provides in comparison to other banking delivery channels. When online banking is perceived as useful, customer’s intention to adopt it would be greater. Likewise bank customers are likely to adopt IB when it is easy to use. This shows that bank customers anchor their online banking adoption intention to the beneficial outcomes and ease of use process of the system. Although IB provides flexibility in performing financial transaction, fast and easy, individuals are still reluctant to adopt the system because of the risk associated with it. Security and privacy are two elements in the PR. Customers are not ready to take any risk on using the new system.

**Yeoh Sok Foon and Benjamin Chan Yin Fah (2011)**

in their study aimed to investigate the factors and determinants of internet banking adoption among Malaysian. Four factors that proposed to influence the adoption from Unified theory of acceptance and use of technology were included in this study. A total of 200 respondents were collected using convenience sampling. Results of this study showed that performance expectancy \( r = 0.51, p < 0.01 \), effort expectancy \( r = 0.55, p < 0.01 \), social influence \( r \)
were positively correlated with behavioral intention among respondents. Analysis of multiple linear regressions was used to determine the predictors of internet banking adoption among Malaysian. The results showed that performance expectancy, effort expectancy, social influence, facilitating condition and trust explained 56.6% variance of behavioral attention among the respondents (F = 50.54, p < 0.01). Knowing the determinants on internet banking adoption could help banking company to improve their service to attract more users.

Khalil Md Nor et al., (2010)²⁰ in their article entitled “Adoption of Internet Banking: Theory of the Diffusion of Innovation” proposed a theory that suggests five key beliefs that influence the adoption of any innovation: relative advantage, complexity, compatibility, trialability, and observability. The purpose of their study was to test part of innovation diffusion theory (IDT) attributes empirically. They used Internet banking as the innovation or the targeted technology. Structural equation modeling was used to analyse the data. The results showed that relative advantage, compatibility, and trialability have significant effect on attitude. Consequently, attitude significantly affects the intention to use Internet banking.

Muhammad Shahid Bashir and Sameh A. H. Albarbarawi (2010)²¹ conducted their study at Umea, Sweden. In their research, they have identified several factors that appear to influence the satisfaction and the dissatisfaction with technology-based service. They have shown that participants are increasingly willing to help themselves. The study findings present the effect of adoption through age, family, friends, money, knowledge, using technology in public and private places, mobile
technology and computer tablets, and Interface design on adoption SSTs. They found that participants were influenced by new technology for adopting SSTs. Participants did not use Online Shopping as much as they use Internet Banking, especially in the private places. Concerning the Self Check in Machines, participants differ in which some tend to use it and others did not.

Nour-Mohammad and Ebrahim (2010) in their study investigated the factors affecting the adoption of Online banking in Isfahan province of Iran. The causal relationships among the variables that determine internet banking services adoption were examined. They have developed a theoretical model based on the Technology Acceptance Model (TAM) with theory of planned behavior (TPB) model. They have analyzed the data using Structured Equation Modeling (SEM) to evaluate the strength of the hypothesized relationships; the results provide support of the integrated TAM and TPB models and confirm its robustness in predicting customers' intention of adoption of online banking. The results indicated that the intention to use online banking is positively affected mainly by perceived behavioral control and perceived usefulness.

Joyce Wangui Gikand and Chris Bloor (2010) in their study investigated the factors influencing the adoption and effectiveness of e-banking in retail banking. Initial and follow-up surveys were carried out in the years 2005 and 2009, respectively, which involved banks controlling approximately 90% of formal retail banking in Kenya. The spread of the Internet is no longer viewed as a challenge of great importance probably due to the tremendous growth in mobile banking. Internet security emerged as an important threat in retail e-banking in the 2009 survey. Mobile phone providers have formed partnerships with banks and non-financial institutions to offer financial-related
mobile services which reduce the need to have wide Internet coverage in Kenya. This also explains the downward shift in importance for the difficulty of using online banking by some customers and pricing of Internet services since the burden has shifted to the service provider rather than the banks.

Joshua A. J (2009)\textsuperscript{24} in his research found that now-a-days banks are providing multiple modes of delivery of services through provision of services through electronic banking channels such as ATMs, internet banking, tele banking and mobile banking services. It is not only the foreign and the private banks that are taking the initiatives in providing these services but also the public sector banks. However it is found that only ATMs are widely adopted by the customers. Adoption of other electronic channels is still to pick up in a big way. The study has endeavored to look at the adoption of technology-enabled banking self services (TEBSS) in totality as it has considered the factors pertaining to all the four prominent TEBSS namely ATMs, internet banking, tele banking and mobile banking that are used by the banks. This approach is used in the study as the customers tend to use the various banking services delivery modes in a complimentary way and each electronic banking channel has its own peculiarities. The proposed models developed using the relevant constructs from the established frame works from the adoption literature and similar studies done in other countries were able to explain the phenomenon of TEBSS adoption and usage reasonably well in the Indian context also. These models were successful in bringing out several implications relevant to both practitioners and academicians in this area. The study shows that with appropriate measures taken by banks in India, technology-enabled banking self services has the potential to revolutionise the way Indians do banking.
Pooja Malhotra and Balwinder Singh (2007) did their exploratory study to discover the factors affecting a bank’s decision to adopt Internet banking in India. Particularly, it seeks to examine the relationship between the bank’s adoption decision and various bank and market characteristics. The results showed that the 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 this new technology. On the other hand, banks with lower market shares and branching intensity and higher expenses for fixed assets and premises also tend to adopt Internet banking. Thus, the banks have used Internet banking as a complementary channel to the existing branch network with an intention to increase the market share and lower the expenses. The category of the bank is quite important in affecting the probability of adoption of Internet banking. In particular, it has been found that private banks (both domestic and foreign) tend to adopt Internet banking quicker than public sector banks. The adoption of this innovation by other banks increases the probability that a decision to adopt will be made. The least important variable is profitability.

Norman E. Marr and Gerard P. Prendergast (1993) the specific objective of their research was to obtain expert weightings for those variables encouraging and discouraging consumer adoption of retail banking technologies to the year 2010. This article suggests that the consumers and the technology suppliers do in fact have a common frame of reference: the consumers see certain variables as being important in their decision as to whether or not they should use a self-service technology, and the suppliers are aware of the importance of these variables. The study suggested that those variables influencing consumer adoption or non-adoption are dynamic rather than static.
All those variables which encourage consumer adoption of retail banking technologies will increase its importance in future. Panels were divided over which individual variable will have the greatest increase in importance: simplicity of use, wide availability of the technology, and time and place utility, were all singled out. All those variables which discourage consumer adoption of retail banking technologies will decrease in importance in future. Again the panels were divided over which individual variable will have the greatest decrease in importance: the habit of using human tellers, the absence of sufficient benefits of banking technology over human tellers, the big brother aspect, and a preference for dealing with humans in banking, were all signed out.

2.3 CONSUMER BEHAVIOUR TOWARDS SELF-SERVICE TECHNOLOGIES

Vandana Tandon Khanna and Neha Gupta (2015) in their study aim to focus on the customer’s perception about technology being used for delivery of financial products and services by Public Sector Banks (PSBs) of India. Channels must continuously strive to add greater value to customers in terms of delivering services through innovative channels. Public Sector Banks (PSBs) also need to understand the factors that influence the perception of an individual. The study shows the factors such as Technology acceptability, safety, availability, user friendliness and accessibility highly depend on the demographic profile of the population size. Most of marketing decisions in terms of enhancing the effectiveness of delivery channels can be taken by considering these factors. Also customers are exposed to newer technology, which helps them to generate information by fewer clicks, should be channelized by Public Sector Banks (PSBs) by providing value added services. The application of crosstabs helps to
understand variables, which are influencing the decision in relation to marketing of financial products and services through delivery channels.

Sunil Kumar (2015) in his study tries to find whether the customers of banks are really aware of these services especially android mobile-app and its usages. Consumer’s awareness is very high about banks android mobile-app now available in India. But usages of services through this serve are respectively average. Majority of consumers have heard about mobile banking before. The consumers are not frequently using these services but they have strong desire to use these services. The external tools of awareness are effective like friends, family, and colleagues through internet compared to internal tools like Bank officials. Thus word of mouth is termed as a strong communication channel. Banks require improving the effectiveness of internal sources of awareness also. The usages of all services offered by the banks through android mobile-app are very low. Banks need to educate their customer about these services.

Elavarasi. R and Surulivel. S. T (2014) in their study identified which commercial bank provides better service with regard to e-banking services to customers and also identified the satisfaction level of customer view about internet banking website of banks. E-banking technology is highly useful to customers as well as banks and other organizations like government organisations. To increase productivity, efficiency, service quality of banks, expansion of banks globally e-banking is of major importance to all commercial banks to adopt in their countries as well as their customers. SBI should try to maintain proper system of maintenance for internet banking.

Ali AlSoufi and Hayat Ali (2014) in their research try at extend the Technology Adoption Model (TAM) to incorporate the role of factors in influencing
customer’s perception towards M-banking adoption. Furthermore, the extended TAM model was evaluated empirically to measure its impact on M-banking adoption in Bahrain. The results reveal that the intention to adopt mobile banking is mainly affected by specific factors which are: Perceived Usefulness and Ease of Use. On the other hand, some factors such as perceived cost and perceived risk did not show any affect on the users' intention to use mobile banking. The result of this research is beneficial for banking service managers to consider the factors that can enforce the Mobile Banking services adoption and increase the take-up of their mobile services. It was found that perceived usefulness strongly affects the customer service. Moreover, perceived usefulness and perceived ease of use affect the intention to use directly and strongly, in which perceived ease of use has more impact than perceived usefulness. The other factors such as perceived cost and perceived risk have no effect on the intention to use mobile banking directly, but affect indirectly through examining the relationship with perceived usefulness and ease of use. Only perceived risk has indirect relationship with intention to use through perceived usefulness and perceived ease of use.

Kholoud Al-Qeisi and Ahmed Hegazy (2014) in their paper investigate whether information technology adoption/usage is ubiquitous, especially technology imported into nonindustrial nations. The measurement model revealed that the model is plausible under current usage conditions. The results showed that performance expectancy compared to effort expectancy has more impact on behavioural intention and also standardized total effect. Behaviour intention has the highest direct impact on usage behaviour while performance expectancy has the biggest indirect effect on usage behaviour.
Parviz Khadem and Seyed Mahdi Mousavi (2013)\textsuperscript{32} in their paper presented an empirical investigation to find out the effects of different factors on continuous internet banking. We can observe from the results there are some positive and meaningful relationships between different components of the proposed study. The results indicate that there are some positive and meaningful relationship between continuous internet banking as dependent variable and other independent variables. The results clearly specify four independent variables of easy implementation, usefulness, cost reduction and self-control which positively influence continuous internet banking, positively.

Md. Morshed Hasan Khan, et al., (2013)\textsuperscript{33} in their paper primarily discussed the financial service quality factors with regard to the relationship between consumers buying behaviour and the quality of services offered. The article demonstrated that consumers' buying behaviour is greatly influenced by the type of financial product being purchased, and this is in keeping and this has been augmenting our knowledge of how consumers purchase different financial products. They used the SERVQUAL instruments to measure the service quality perceptions in the retail banking sector in Bangladesh. Empathy shows the highest positive correlation with customer satisfaction and Assurance reveals the second highest positive correlation with customer satisfaction. Tangibility demonstrates the least positive correlation with customer satisfaction. A large positive relationship between customer satisfaction and customer loyalty was demonstrated in the hypotheses test.

Ankur Gangal and Tvisha Gupta (2013)\textsuperscript{34} in their study examine the consumer behavior towards the SSTs at the Bottom of the Pyramid. Taking a cue from the description of BOTP definition, they have selected five categories of workers to assess
the awareness and demand for SSTs and opportunity they present as target markets for banks to focus on them for market development activities. They have come to the conclusion that, where banking services do find demand at the BOTP, SSTs are not the favorite among the consumers in this segment. The reasons behind BOTP consumers not demanding SSTs can be found out and analysed under another project.

Rakesh H M (2013)\(^{35}\) in his article titled “Consumer Preference towards Use of ATM Services in Mysore City” explained that banking through ATM has not only transformed traditional banking but has also brought a paradigm shift in the attitude of banks to banking operations. It is evident from the present study that a majority of the customers are highly satisfied with ATM services and view them as essential service. The customers prefer ATM with time and cost utility which provides efficient services. Despite drawbacks in ATMs, it is still preferred as it benefits the bank, employees and customers. It is thus, imperative for banks to ensure that undisrupted and efficient ATM service is provided to customers for best results.

Prerna Dawar (2013)\(^{36}\) in his article identified all the main factors that influence the customer satisfaction in banking at the present contemporary global and highly competitive economy. In her study a comparative research design has been chosen to explicate the determinants of Customer satisfaction. The research method will help in examining the various factors of those results in satisfaction in Retail Banking. To meet the objective a sample of 100 Retail Banking Customers were randomly selected.

R. Seetha Lakshmi and P. Kavitha (2013)\(^{37}\) in their article entitled “Customer Satisfaction in ATM Services: A Study with Reference to Indian Bank at Tiruchirappalli Corporation” examined the customer satisfaction in ATM service provided by banks in
India. The result of the study shows that there is no relationship between the demographic factors and customer satisfaction. Empirical evidence indicates that customer’s satisfaction in location and process of withdrawing the money under ATM scheme is high, whereas the satisfaction is comparatively low in the aspects of transaction charge and prompt delivery of ATM card. Banks must constantly up-date and differentiate their ATM service quality dimensions from other banks to ensure continuous satisfaction and retention of customers, and optimize their limited resources.

*Sunita Bishnoi (2013)* in her study titled “An Empirical Study of Customers ‘Perception regarding Automated Teller Machine in Delhi and NCR” has made an attempt to find out the perception of customers regarding various issues related to ATM/Debit cards. The study concludes that ATM is a very convenient mode of electronic banking. The present research concludes that ATM is a very convenient and has any time anywhere usage. As the services of ATM and number of ATM is increasing day-by-day, and simultaneously, the number of ATM users is also increasing, so it is important on the part of bank, to have an idea about what the ATM users are thinking about its various features, what are their problem areas, what are their recommendations, how do they compare the ATM service of this bank with that of any other bank etc.

*V. Alagu Pandian and R. K. Sharma (2012)* in their article try to analyze the customer attitude towards ATM services of banks in Rajapalayam, Tamil Nadu. ATM helps the people to take money whenever needed by them and also during emergency conditions. It is concluded from the present study that the people of Rajapalayam expect more ATM centres in all parts of the town rendering 24 hour service. It could go a long way and enrich the handling of printed currencies and minted coins.
Bader M Almohaimmeed (2012) conducted his research to better understand Saudi customers’ behaviour regarding the use of internet banking and to determine the factors that influence bank customers’ intentions to use internet banking among dormant users of that channel. Perceived usefulness and service visibility directly influence Saudi customers’ intention to use internet banking. The positive and statistically significant relationship between perceived usefulness and ease of use indicates that the more positive are perceptions of ease of use, the more positive the perception of usefulness appears. Perceived usefulness is significantly and positively related to behavioral intention to use internet banking and the effect of perceived ease of use is only indirectly significant on the behavioural intention through perceived usefulness. There is no direct significant role of customers’ trust in their behavioural intention to use internet banking. However, higher levels of customer trust in internet banking will reduce perceived risk of that channel and increase customers’ perceptions of ease of use of internet banking. Trust is a multi-dimensional construct derived from only one theoretical perspective of trust, namely interpersonal trust, which confirmed only one of the two antecedents of trust proposed in the present study. This means that Saudi customers trust in internet banking can be developed by focusing on trustworthiness of the bank to provide internet banking. Moreover, perceived trustworthiness of a bank as an internet banking provider also influenced customers’ perceptions of structural assurance of the bank’s website. Task-technology fit dimensions are found to have varied influences on Saudi customers’ behavioural intentions and their perception of ease of use of internet banking. One of the dimensions of task-technology fit has a significant and direct influence on Saudi customers’ behavioural intentions to use internet banking, namely service visibility. Two out of the four dimensions, namely system reliability and accessibility significantly influence perceived ease of use of internet banking.
Abdul Ghafoor Awan and Maliha Azhar (2011)\textsuperscript{11} in their study reveal the relationship between consumer behavior towards bank selection criteria and customer satisfaction. The observations and the literature presented in this study suggest that the concept of Islamic banking is one of the most emerging and the most out-bursting concepts in global economies. Numerous studies show that The Islamic banking is gaining wider acceptance and inspiration throughout the world especially in the areas occupied by Muslim communities which enlightens the fact that religion is the core attraction behind Islamic banking but recent studies debunk this only reason and acquiesce with the fact that is not only the religion that is attracting the people towards Islamic banking but it is basically the products and services provided by the banks whether Islamic or any conventional which attract the consumers towards banking. This research provides some important information on the development of Islamic banking in Pakistan. The result will help the relevant parties to further enhance the development of Islamic banking in Pakistan especially selection criteria preferred by consumer behavior.

Manvinder Singh and Karunesh Saxena (2011)\textsuperscript{12} in their article analyzed the satisfaction levels of the customers of ICICI Bank holding ATM cards in Udaipur City with respect to some aspects such as the service quality of ATM personnel, location, sufficient number of ATMs in city, regularity in working of ATMs, their impact on overall performance and their opinions on various other related issues. The most important thing which came out of the study that the Weighted Average Score of the overall performance of ICICI Bank ATM came to be 3.43 which is more than the neutral (i.e. 3). But this is just marginally higher. The ICICI Bank being the largest private sector bank must make its customer satisfaction base stronger in order to sustain in this world of competition.
Osman Demirdogen et al., (2010) in their article entitled “Customer Risk Perceptions of Internet Banking – A Study in Turkey” aims to understand the extent to which this consideration is valid as well as to determine the levels of risk perception differences among those using Internet Banking and those not using it. The study showed that while customers used Internet Banking for a variety of different purposes such as to determine account balance, transfer money, or to pay invoices, etc., there was a significant relationship between the income level of customers and their risk perceptions. An analysis of the differences in risk perceptions between bank customers using Internet Banking (IB) and those not using IB showed that risk perceptions in terms of financial, psychological and safety risks among customers not using IB was more pronounced than those using IB. Customers not preferring to use internet banking thought that they would be swindled when using this service, and therefore, were particularly careful about high risk expectation during money transfers from and between accounts.

Thamarai, Senthil and Siva (2010) in their study explain the customer preferences towards SST channels in a multi channel environment. The real choice criterion which includes the Purpose, Perceived risk, Benefits and Requirements cannot be quantitatively and precisely measured. The application of AHP which enables to capture decision maker’s subjective evaluation related to channel selection criteria provides accurate and consistent channel preferences. On a whole ATM is found to be the most preferred channel followed by Internet banking and Mobile banking with more or less equal weights. When it comes to catering various purposes for which SSTs are used, the internet banking is widely used for Service requests, availing information and fund transfer followed by mobile banking and ATM as customers use Internet and mobile for
service requests and availing information. For avoiding the perceived risk associated with SSTs, ATM is the most preferred channel followed by Internet banking and Mobile banking. The perceived benefits of the all the three SST channels found to be equal though the patronage is not uniform. Under the system and Skill requirements criteria, ATM is mostly preferred as one need not own any equipment and need a little skill to use it. Mobile banking is the next preferred channel under these criteria. Internet banking is the least preferred channel under system skill requirement criteria as the customer need a computer with internet connection.

A.D. Berndt et al., (2010) in their study titled “Readiness for banking technologies in developing countries” analysed Technology readiness among consumers has been identified as being critical in the adoption of the latest technology, while also impacting on the access and ownership of technologically based products and services. The implication of the TRI scores obtained indicates the varying levels of technology readiness in South Africa, and hence the ownership and desirability of owning various technology-based products and services. These findings indicate the challenges for organisations involved in this sector in their endeavour to encourage the adoption and use of technology, but they also indicate ways in which organisations can incorporate the TRI of their customers into their marketing strategies.

M Saravana Kumar (2009) in his research paper attempted to examine the service quality (SERVQUAL) of the selected public and private sector banks in the city of Coimbatore. He has selected 23 services and technology related variables were broadly categorized under five broad dimensions which include: (1) tangibility, (2) reliability, (3) responsiveness, (4) security, 5) technology and (6) accessibility. These dimensions
include the functional quality dimensions, outcome quality dimensions and the technology related dimensions. The difference between the perceived and desired level of service quality is negative indicating that the perceived services of the sample banks fell short of the desired services. The difference is also found to be significant for a majority of the factors.

Abigail Naana Adams and Adnan Odartey Lamptey (2009)\textsuperscript{47} in their study show that internet banking offered customers some level of value and satisfaction in terms of location and time convenience as well as cost saving but it is fraught with teething problems ranging from limited internet access, limited service (non-transactional), occasionally slow internet connectivity and website downloading. Still, the customers are enthused by the service and express expectations of improved and advanced services. The study also concludes that banks need to promote internet banking by having an active stake in the development of the internet infrastructure and offer more incentives to customers. They must also watch the internet technology with robust software and networking systems, customer-value-perception-based strategies, benchmarking and adequate training of staff and overall development core competences in the face of an increasingly dynamic industry.

Michael D. Clemes, Christopher Gan and Li Yan Zheng (2007)\textsuperscript{48} in their study identify and examine the factors that contribute to bank switching in New Zealand from the customer’s perspective. The authors found that switching behavior was most common with young-aged and less educated customers. The low impact of price on bank switching behavior in New Zealand may be attributed to a somewhat low variability of bank charges, interest charges and interest paid in a sector that has most recently been
heavily dominated by four Australian owned banks. Customer Commitment was identified in this study as the most important factor contributing to bank switching behavior; however it was measured as a single construct.

**Shahjahan, (2005)** in his paper titled, “A Study on the Level of Customers’ Satisfaction on Various Modes of Banking Services in India” conducted a study on 100 account holders of ICICI Bank in Chennai to portray the level of satisfaction among the respondents while availing the bank’s service through four different channels such as Internet, phone, branch and ATM. He concluded his study by stating that information technology based customer service and delivery of financial products further enhanced the e-loyalty and customer base of the banks in 2004.

**Ahmad Jamal (2004)** in his article titled “Retail Banking and Customer Behaviour: A Study of Self Concept, Satisfaction and Technology Usage” investigated the effects of self-image congruence on satisfaction and brand preference. Results from this study provide support for a strong relationship between self image congruence and satisfaction and between self-image congruence and brand preference among customers of retail banking. The study also indicated that, in the case of users of self-service technologies, the self-image congruence does not relate to satisfaction. This is in contrast to non-users of self-service technologies whereby their self-image congruence did relate positively to their satisfaction towards the service provider. The findings indicated that for both users and non-users of self-service technologies, their respective self-image congruence was related to brand preference.
Heikki Karjaluoto et al., (2002) in their article entitled, “Electronic banking in Finland: Consumer beliefs and reactions to a new delivery channel” described the current state of Internet banking in Finland and to study consumer perceptions, beliefs and reactions to electronic banking in general and Internet banking in particular. The result indicated that bank managers can, by knowing the basic beliefs consumers hold about Internet banking, create more effective customer communication, improve software and target prospects better concerning Internet banking. The results of the study had provided interesting additions to knowledge of electronic banking and consumer behaviour.

Matthew L. Meuter, et al., (2000) in their research identified several factors that appear to influence dissatisfaction with technology-based service encounters. These factors can therefore provide insight for firms that currently offer or are planning to offer an SST as an alternative method of service delivery. Through the critical incident investigation, they found three major groups of factors leading to a satisfactory evaluation of an SST experience and four major groups of factors leading to a dissatisfactory evaluation of an SST experience. The second and largest major category for satisfying incidents is the relative advantage that customers perceive they get from using an SST. The third major satisfactory category, “did its job,” consists of many incidents that simply described the technology doing what it was intended to do. The first and largest dissatisfactory group, technology failure, includes situations in which customers are prevented from using the service. In this study, many of the dissatisfying incidents were caused by process failures. Research examining interpersonal service encounters clearly demonstrates that successful recovery in the wake of a service delivery failure is satisfying to customers, whereas a failure to recover is highly dissatisfying. The third
research question they investigated was the nature of relationships between the encounter and measures of attributions, complaining, and future behaviors such as repeat purchase and word of mouth. Their results indicate that users of SSTs are most likely to attribute the outcome of the encounter to technology, and more respondents do so for a dissatisfying than a satisfying encounter. Only a small percentage of respondents cited themselves as responsible for the outcome, though they were more likely to do so for satisfying versus dissatisfying incidents. In addition, the outcome was attributed equally to both technology and the user significantly more in satisfying encounters than in dissatisfying encounters.

**Evan Mannakee, (2000)** in his article titled, “Customer focused Technology improved Bank’s Business” examined and explained that a proper mix of technology with customer service can help the organization in a better way. A primary challenge for banks today is learning how to become financial advisors for customers rather than simply selling them their products. Hence, the challenge faced by the banking industry is to more specifically anticipate their customers’ needs and to actively position the products and services that will meet the ever growing customers’ needs.

**Chai Keng Fui (1999)** in his study intended to develop a better understanding of the consumer trial of self service technology (SST) in the banking industry. Based on the result, it is found that role clarity was found to be a strong mediator between both the antecedent predictor of individual differences and innovation characteristics, and previous experience was one of the important factors amongst other individual differences antecedent predictor to motivate consumer for the trial of a new SST. Perceived risk, relative advantage, complexity and trial ability were found to be mediated
by consumer readiness, Variable of role clarity has strengthened the proposed stronger mediating ability of role clarity in the earlier section. In summary, the consumer readiness variables were also found to mediate the relationship between three of the individual different traits (technology anxiety, need for interaction and previous experience) and the likelihood of trial. Consumer readiness variable had also mediated the relationship among all the six antecedent predictors of innovative characteristics and likelihood of trial. Managerial implication will be discussed in latter part of this study to suggest practical and useful set of factors that influence trial of new SSTs based on the findings. Together with the exploration of antecedent predictor of innovation characteristics and individual differences in previous literature of adoption behavior, and the finding from this study of better understanding of consumer readiness variable of role clarify, intrinsic motivation, extrinsic motivation and ability as mediators, it is hoped that a more parsimonious and managerially relevant set of variable can be used to understand adoption behavior.

2.4 MODELS RELATED TO CONSUMER BEHAVIOUR

Prateek and Versha Mehta (2012) in their paper examined the factors influencing consumer's attitude towards acceptance of Self-service technologies with major factors from different theories as the guiding principle. Results showed that consumer's attitude is determined by their perception of how convenient it is to use, intrinsic motivation and perceived ease of performing the behavior. Further, the results highlighted the importance of Subjective norms, Complexity and Attitude towards behavior in the use of self-service technologies. Among the twelve factors Perceived usefulness, Social factors and Image were proven to be insignificantly influencing the attitude towards using SST's. They may be a necessary condition, but not the sufficient
criterion to lift consumers' attitude to adopt SST's. This is an unusual exception to general technology acceptance situations and thus it is worthy of consideration in the banking industry.

Mohd Shoki Md Ariff, et al., (2012)\textsuperscript{56} in their paper try to determine the acceptance of internet banking system amongst potential young users in internet banking. Specifically, it has been attempted to examine the effects of Computer Self- Efficacy (CSE) and extended Technology Acceptance Model (TAM) on the Behavioural Intention (BI) to use the internet banking systems. Their research revealed that CSE, and PU, PE and PC of the extended TAM had significant effect on users' BI to use internet banking systems. This indicated that the higher the magnitude of CSE, PU, PE and PC by customers; the higher will be their intention to use the systems. The inclusion of PC with PU and PE in the TAM model contributed to a better understanding on how individuals react, in term of exerting their intention, to use information technology systems. In their study, CSE serve as indirect impetus, through TAM, to enhance users' PU, PE and PC of internet banking systems. Thus, CSE is very influential in facilitating users’ acceptance of the systems.

Kamal Ghalandari (2012)\textsuperscript{57} in his study investigated the effects of performance expectancy, effort expectancy, social influence and facilitating conditions on acceptance of e-banking services in Iran by considering the role of age and gender. The results from analysis based on simple linear regression showed that all four variables i.e. performance expectancy, effort expectancy, social influence and facilitating conditions had a positive and significant effect on users' behavior and intention to use e-banking services and variables of age and gender moderated the relationships between these variables.
Therefore in order to achieve effective acceptance of e-banking services, extensive, attractive and insightful activities should be done to raise users' awareness of these advantages and e-banking services should be designed in a way that users face no problems while using them. Also with respect to positive and significant effect of facilitating conditions on using e-banking services, it is recommended that infrastructure e.g. computers and high-speed and affordable internet required in this field is provided to all social classes.

**Shumaila Y. Yousafza, et al., (2010)** in their study assessed e value of technology for users and to understand the factors that determine this value in order to deploy IT resources better. This paper uses structural equation modeling to ascertain the extent to which 3 popular models of users’ behavior—theory of reasoned action (TRA), theory of planned behavior (TPB), and technology acceptance model (TAM)—are predictive of consumers’ behavior in the context of Internet banking. Unlike other tests of these models, this paper employs independent measures of actual behavior, as well as behavioral intention. The results indicate that TAM is superior to the other models and highlights the importance of trust in understanding Internet banking behavior.

**David H. Wong, et al., (2009)** in their study examine perceived risk as a moderator between consumer’s trust of a bank’s e-banking website and their willingness to use e-banking. The role of perceived risk as a moderator was not supported. The results also found that specific trust in a bank’s e-banking website has a positive moderating influence on the relationship between perceived risk and the willingness to use e-banking. Consumers who have low perceived risk of transacting on the internet are generally more willing to use e-banking. Their willingness to use e-banking is also shown to be more
pronounced in cases where the consumer also has trust in their bank’s e-banking website. It highlights that a consumer’s willingness to use e-banking primarily depends on their perception of risk in transacting on the internet and the trust of the specific e-banking website is secondary.

Avinandan Mukherjee and Prithviraj Nath (2003) in their article “A model of trust in online relationship banking” discussed the role of trust that encompasses the exchanges and interactions of a retail bank with its customers on various dimensions of online banking. They developed a structural equation model and established all hypotheses. They observed that shared value is most critical to developing trust as well as relationship commitment. Communication has a moderate influence on trust, while opportunistic behaviour has significant negative effect. Also they found higher perceived trust to enhance significantly customers’ commitment in online banking transaction. An important contribution concerns how trust is developed and sustained over different levels of customer relationship on online banking.

Ragnvald Sannes (2001) in his paper argues that most banks have failed to exploit the potential of self-service banking because they base their service design on an incomplete business model for self-service. A framework for evaluation of self-service banking concepts is developed on the basis of Stabell and Fjeldstad’s three value configurations. The value network and the value shop are consistent with self-service banking while the value chain is inappropriate. The impact of the value configurations on information exchange and self-service functionality is discussed, and a framework for design of such services is proposed. Self-service functions for cross-selling and service bundling are beyond the scope of these studies, but our experience indicates that these are
exceptional. It is therefore concluded that current practice does not match a value network based concept. The main conclusion is that current self-service banking is too narrow to be a complete business concept, and that banks have failed to address the functions that create customer value.

Murugan Anandarajan et al., (2000) in their article entitled “Technology acceptance in the banking industry: A perspective from a less developed country” said that IT is a major enabler of today's globalization efforts. However, many MNCs are finding it difficult to employ these technologies effectively in their subsidiaries. The study addresses this issue by examining the factors which motivate bank employees to use microcomputers in a less-developed country. A structural model is proposed and tested, examining the role of three different motivators on promoting microcomputer usage by bank employees. Perceived usefulness and perceived enjoyment are not factors which motivate bank employees to use microcomputers, while social pressure is a strong motivating factor of microcomputer usage. In addition the antecedent variable perceived ease of use has strong influence on perceived usefulness as well as microcomputer usage. The results of the study have far-reaching implications for MNCs. Research has shown that many global MNCs view the world as a single market and attempt to control their subsidiaries regardless of national culture. This study indicates that microcomputer usage behavior is influenced by national culture; thus, incorporating IT without regard to local culture could lead to detrimental results.
2.5 OTHER REVIEWS RELATED TO THE STUDY

Rajiv Sindwani and Manisha Goel (2015)\textsuperscript{63} in their study discussed the overall effect of key TBSSB service quality attributes. The TBSSB service quality index is calculated by using fuzzy along with graph theory and matrix methods. Broad attributes affecting TBSSB service quality are identified. The banking sector which keeps on experimenting with new technologies can adopt this methodology to evaluate their technology. Banks may conduct the survey and find TBSSB quality index for their respective organisations. Banks may assess themselves by comparing their automated service quality index with maximum and minimum computed value of TBSSB. At a particular period of time, similar banks may be compared and rated by computing TBSSB indices. Index value can be computed for different modes of automated banking and values may be used for the purpose of inter banking mode comparison. Index may also be calculated for branch banking service quality. By calculating this index, banks will be in a position to compare their automated banking quality with that of branch banking. By doing this, they may justify their investments in technology based services. In short, this will helps bank managers to make decisions related to various aspects of automated banking including future investments which ultimately will result in better quality, higher customer satisfaction, loyalty and profitability.

D'ames, adeeb and Abu Rumman as'ad (2014)\textsuperscript{64} The aim of their study is to investigate the impact of Self-Service Technology on Continuous Behavioral Intentions, Consumer Readiness as a Moderate Variable on Sample of E-Banking users in Jordan. The study has addressed the special variables related to evaluating the self-service technology: Ease of use, perceived usefulness, perceived risks, continuous behavioral
intention, and taking customer readiness variable as moderate variable for the research. Academically, this work aims to focus on academic attention on a much neglected domain such as what user should know about the electronic service that banks provide, making them pay attention and motivate them to use. Many banks don’t paying attention to SST and how this subject will attract users.

R. Melba Kani and A. Merlin Thanga Joy (2014) in their article entitled “Issues and challenges faced by ATM customers of Commercial Banks in India” provide information regarding the satisfaction level, awareness level and problems faced by customers (32 districts of Tamilnadu) while using ATM services. The study found that ATM services of commercial banks in Tamilnadu are well received and utilized by the customers. It was discovered that withdrawing money through ATM was terribly convenient and majority of the respondents used ATM services frequently. The study has demonstrated that a substantial variety of customers have access to the present machine and are consequently utilizing them for multi-purpose transactions, despite its challenges and shortcomings. The result also shows that majority of the people using the machine are young persons.

Ludfi Djajanto, et al., (2014) in their study examine the relationship among Self-service technology (SST), service quality and relationship marketing on customer satisfaction and loyalty. The results of their study indicate that self-service technology, service quality and relationship marketing have a significant effect on customer satisfaction. Similarly, relationship marketing has a significant effect on customer loyalty, but self-service technology and service quality do not have significant effect on customer loyalty.
Mohammad Rokibul Kabir (2013) in his study investigated the factors that influence the users of banking services to use mobile banking in Bangladesh. The results showed that only 65.6% people of age between 20 to 35 years (this range of age is the best users of mobile banking as shown in earlier studies) are currently using mobile banking services while the rest of the 34.4% are not enjoying such facilities even though they have an interest to use it in future. The findings of this study revealed that perceived risks (except social risk), trust, convenience and comparative advantages are the factors affecting the behavioral intention of mobile users to adopt mobile banking services in Bangladesh. Moreover, inclusion of factor like cultural orientation of the user of banking service might have important influence on the use of mobile banking which is not incorporated in this study. Still it can be concluded that the mobile banking service providers which are willing to provide useful and cost effective products stand to gain substantial market share.

Sunita Agrawal and Ankit Jain (2013) in their article titled “Technological Advancement in Banking Sector in India: Challenges Ahead” studied about financial innovation in banking in India. The study also highlights the benefits and challenges of innovative banking trends. Banks boost technology investment spending strongly to address revenue, cost and competitiveness concerns. The purpose of their study was to analyze such effects of innovation in banking on growth and development of India.

HRD Abadi and Fatema (2012) in their paper investigated the level of user's acceptance of electronic banking among some customers of banks in Iran. Extended TAM model was conducted as a conceptual framework in this paper. 188 questionnaires were analyzed based on correlation and regression analyses and independent sample t-test
using the statistical package for social sciences (SPSS). Result has showed that customers have found e-banking system enjoyable, convenient, and easy to use; however, there is low level of reliability in the security measure of e-banking technology.

R. K. Uppal (2011) in his article titled “E-Delivery Channels In Banks-A Fresh Outlook” exhibited the growth of information technology in various bank groups. The study concluded that more developments in technology are taking place. In the face of the new competitive pressures, inherent rigidities in public sector banks to enhance serious challenges. The gap between partially using IT in banks and fully using IT in banks has widened. Financial sector reforms experienced that as compared to new private sector banks and foreign banks, in public sector banks very less IT has taken place. This IT in new private sector and foreign banks is becoming a threat and also motivation for Indian public sector banks. Thus in this competition those banks will survive in future which will manage technology infrastructure.

Ravinder Vinayek and Preeti Jindal (2011) in their paper titled “Diffusion of e-banking in India: A critique” attempted to examine the pace and patter of diffusion of IT enabled products and services among banks in India. In addition, it pinpoints the key issues that need to be addressed on the priority basis in order to harness the full potential of e-banking technologies in India. It was found that many banks have started making foray into the arena of E-Banking solutions with the introduction core banking solution and new IT enabled channels such as ATMs, internet banking and mobile banking. But it will be of no use to make huge investment in ebanking solutions until and unless customers make use of these technology-driven products and services actively. Indeed, the level of actual utilization of digital channels by individual and companies is still low
in India when compared to other countries across the globe. Recent data from Economic Intelligence Unit (2010) suggests that India scored low (2.88) when compared to other emerging markets like Argentina (4.83), Brazil (4.93), Mexico (5.68) and developed markets like U.S. (8.60), U.K. (8.00), and Japan (8.04) with regard to customer and business adoption of digital channels.

Fauziah Esman, et al., (2010)\textsuperscript{72} in their study examined the levels of intention to use the self-service technologies (SSTs), in particularly the ATMs and internet banking among the postgraduate students in the Universiti Teknologi Mara (UiTM), Shah Alam. In essence, the e-debit system consists of automated teller machines (ATMs), internet banking and cash transaction, but this study focuses on the usage of ATMs and online banking other than the cash transaction. Therefore, the research model proposed six variables, which are (a) perceived usefulness, (b) perceived ease of use, (c) perceived enjoyment (d) need for interaction, (e) security and privacy, and (f) demographic characteristics (such as gender, age, level of education, mode of study and faculty enrollment) for measuring the behavioral and intention to use the SSTs. This study showed that the majority of the postgraduate students’ intention to use SSTs is at a moderate level. Statistical analysis revealed that perceived usefulness, perceived ease of use, perceived enjoyment, and security and privacy are the factors that affect students’ intention to use the SSTs. Furthermore, the results from stepwise multiple regressions demonstrate that perceived enjoyment is the best variable to predict students’ intention toward the usage of the SSTs.

Dalia El-Kasheir, et al., (2009)\textsuperscript{73} in their research aim to understand and explain customers continued intention to use internet banking in Egypt. The research
starts with reviewing well-known theories of behavioural intentions such as the theory of reasoned action, the theory of planned behaviour, the theory of decomposed planned behaviour, the technology acceptance model, and the diffusion of innovations theory as well as the use of these theories in self-service technologies such as internet banking. The study has attempted to describe and analyze the factors that can affect customers' intention to continue using internet banking services. Novice customers or those considering first-time adoption of internet banking may be influenced by perceived usefulness, perceived ease of use, and subjective norms. Once the customer uses the service, the effect of these variables may diminish and ease of use may become salient. Thus, the finding that perceived ease of use is the only predictor of continued usage intentions and the fact that other variables suggested by behavioural intentions theories were not significant predictors opens the door for reconsideration of using these theories in examining continued intentions to use SSTs such as internet banking.

**Kent Eriksson and Daniel Nilsson (2007)** study was to conceptualize, develop, and validate independent variables that convey continued usage of Internet banking, an SST. The study found that Internet usage in a multichannel context is influenced not only positively by the potential users’ perception of its usefulness but also negatively by their overall satisfaction with the service provider and their additional distribution channels. This study has shown that perceived usefulness is a crucial determinant whether buyers will continue their usage or not. If buyers perceive Internet banking to be useful, they will be more likely to use it. However, buyers’ satisfaction with traditional interaction channels in the bank may restrict their usage of Internet banking. The study shows that buyers’ satisfaction with traditional banking may serve as
an obstacle to their continuance of Internet banking. Buyers’ perception of Internet banking as useful results in their continuance of Internet banking usage, but if buyers are also satisfied with traditional banking, they seem to prefer traditional banking channels. The study shows that the perception of a channel as useful does not guarantee loyalty. Even though buyers perceive it to be advantageous to continue their Internet banking usage, they yield to their overall satisfaction with traditional banking. The conclusion might be that satisfaction alone is secondary when it concerns choice of provider; however, when it concerns choice of interaction channel, satisfaction is number one and the perceived usefulness is secondary.

Rajagopal and Ananya Rajagopal (2007)\textsuperscript{75} in their paper attempts to analyse critically the available literature on the subject, discuss a model that provides a managerial framework for analyzing the variables associated with customer value, and to identify potential research areas. The discussion draws conceptual impetus from new technologies in banking services through self service technologies in banking as a tool for optimizing profit. The discussion in the paper also analyzes the main criteria for successful internet-banking strategy and brings out benefits of e-banking from the view of banks, their technology and customer values and tentatively concludes that there are increasing returns to scale in the bank services in relation to the banking products, new technology and customer value.

Hans H. Bauer et al., (2005)\textsuperscript{76} in their article discussed the case of e-banking portals six main quality dimensions related to three generic service categories were identified: security/ trust-worthiness and basic services represent the basic demands of portal users and form the core service category. Attractive cross-buying services and
added value constitute a second dimension representing the additional services that facilitate the use of the core products. A third dimension used for quality assessment consists of transaction support and responsiveness of the service provider which are assured by personalized offers and content as well as interactive decision tools.

Chang-tseh Hsieh (2005)\textsuperscript{77} in his paper examines what a firm should consider in order to encourage customers to at least try, and eventually adopt, the SST offered by a firm into the customer's regular routine. Factors that encourage the customer to try a new self-service technology for the first time and factors impact customer satisfaction and dissatisfaction will be addressed. Simply automating an already flawed customer-service function will not improve wait times, or gain any new permanent customers. Self-service is just another channel by which to serve the customer. Customers want what they have always wanted. They want reliable, affordable, quality service that is convenient and easy to acquire. If your firm can't provide an SST that is at least as reliable, if not more so, as your no-technology customer service, then your firm isn't prepared to properly implement SST. The customer's ability to acquire quick and easy service will influence the choices they make. Make it easy and reward customers for using your SST and they will keep coming back. Remember, the SST isn't just for the firm's benefit; it's intended to provide value to the customers.

Mark Durkin (2004)\textsuperscript{78} in his article reported a study into Internet banking that focuses on the extent to which 480 retail-bank customers can be clustered according to an adapted decision-making framework. How such clusters can help influence the adoption of the Internet-banking interface is explored. Findings showed an encouraging match between the four sample clusters identified from the case bank and a priori classification
of decision styles. This raises opportunities for the case bank’s marketing strategy in terms of offering greater insight into the motivations for the adoption of e-banking solutions within the customer base. High levels of Internet use at work are seen to positively influence e-banking registration. The results represent preliminary findings of a possible match between elements of Driver’s decision styles and the clusters identified in the case bank’s sample.

**S.J. Barnes and B. Corbitt (2003)** in their paper examined the strategic implications of m-banking and the strategic positioning of m-banking services in different markets. From a strategic perspective, the m-banking marketplace involves a complex interplay between banks and their existing banking channels, the consumer, and the suppliers of related competencies, technical infrastructure and network services and some of which pose a potential threat in developing competing services. The successful adoption and use of m-banking services are dependent on a number of factors, including existing banking channels, market conditions and customer perceptions. They examined the adoption of m-banking services using technology acceptance theory, underlining some of the key aspects of the technology and user behaviour that are likely to play a role in the future adoption of m-banking services. The issue of reach and richness of m-banking services is one that needs careful management, even if a market existed, m-banking cannot fully replace the rich and richness of other banking platforms. However, the analysis has shown that it provides a significant potential for a channel to enable or extend electronic banking for consumers, depending on the prevailing market conditions.

**Laura Bradley and Kate Stewart (2002)** presented their empirical research that investigated the factors driving and inhibiting Internet banking. The main component
of the research was a Delphi study of expert opinion. External factors seemed to be the key drivers, while factors internal to the retail banks inhibit further diffusion of Internet Banking. The key inhibitors are mainly internal issues such as lack of enhanced ability to deal with customers, resistance to change, attitudes within the bank to this innovation, resources available and the existing legal system. Finally, research concluded that 85 percent of retail banks have adopted Internet Banking.

**Arif A. Al-Ashban and Burney (2001)**[^81] in their article entitled “Customer adoption of tele-banking technology: the case of Saudi Arabia” examined the adoption of tele-banking in Saudi Arabia. The field finding revealed that customers increasingly extend their support for the use of tele-banking as their experience grows with the system. The result also indicated that in general Saudi customers’ income levels and education play a vital role in their adoption and usage of tele-banking technology. The results also raise the question whether customers’ demographics have a significant impact on tele-banking usage in general. Findings revealed that customer tend to increase their usage of tele-banking services as a function of their past experience (exposure).

**Hurter and Craig, (1998)**[^82] in their article titled, “Global Automated Teller Machine Banking: Casting the Net” discussed that Automated Teller Machines are the most visible form of electronic banking throughout the world. There are three types of Automated Teller Machine systems in use. The first and best type of Automated Teller Machine was proprietary systems that were operated by the institutions that purchased or leased the equipment. Today, they are less prevalent as shared/regional systems and national/international systems have become increasingly popular.
Kathria (1996) in his article entitled, “Technology Imperatives in Banks” has highlighted the technological imperatives in banks which are the factors that drive the banks to upgrade technology such as liberalization, new plans in the market, Customers’ growing expectations, housekeeping problem, and the increased need for faster communication. He also stated that the average number of clients served in India was around two crores and inter-branch entries were more than 50,000 per day. He had also highlighted various benefits of computerization both from the customers’ point of view and from the bankers’ point of view.

James F. Devlin (1995) in his article titled “Technology and innovation in retail banking distribution illustrated how the main influences on the delivery system mix have developed during a period of significant change in the modus operandi of financial services markets which began about two and a half decades ago. Innovations in financial services products are easily copied and as a result it is difficult for organizations to maintain a competitive advantage through product differentiation. With the emergence of more heterogeneous consumer preferences regarding delivery of retail banking services, then the issue of distribution of the service offering has become increasingly important to the competitive process. Pressure for change has also come from the supply side and the result has been significant changes in the distribution of retail banking services. Branch networks are subject to changes in role and emphasis, becoming more welcoming and marketing oriented.

Robert Rugimbana (1995) in his study titled “Predicting automated teller machine usage: the relative importance of perceptual and demographic factor” aimed to discriminate users and non-users of automated teller machines (ATMs) using both
demographic characteristics of respondents as well as their perceptions of ATM attributes, with a view to assessing the relative importance of these predictor variables. By assessing ATM usage patterns in relation to perceptual and demographic factors the study found that perceptual variables are far more powerful and, therefore, concludes that a strategy of stressing the most important perceived attributes, in particular relative advantage (convenience), is crucial to the success of the efforts of banking marketers which are aimed at increasing ATM usage. At an operational level, the convenience of ATMs, i.e. 24-hour interstate distribution service outlets, should be stressed. While perceptual profiles provide electronic bank managers with answers to how and why consumers perceive ATMs the way they do, they do not address the question of who the customer is. Hence demographic and psychographic profiles cannot be ignored.

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