INTRODUCTION
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The banking sector in India has undergone drastic changes by the application of information and communication technologies in the workplace. Information technology sets new business standards and is increasingly playing a predominant role in the growth and development of banking system in our country. The application of internet and wireless technologies brought a paradigm shift in the banking workplace from brick and mortar system to click and portal banks. The entry of new generation banks and foreign banks has changed the face of the entire banking system in India. The advent of internet has modified the way organizations communicate, how they share information with business partners, and how they buy and sell (Damanpour, 2001). With the penetration of the use of personal computers, internet service and World Wide Web (WWW), the commercial banks began using internet as a distribution channel for delivering their high value added products and services to their customers. Internet banking refers to the practice of conducting financial transactions of customers over the internet through a bank’s website (Shao, 2007). Nowadays, internet banking is gaining more popularity because of its 24 hour accessibility and low transaction costs. Internet banking enables banks to provide low cost and value added products and services to their customers without any geographical limitations. Internet banking provides a competitive advantage to banks by giving them an unlimited distribution network. For the purpose, banks have expanded the scope of competition to an electronic environment with internet banking.

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Pikkarainen, Pikkarainen, Karjaluoto, and Pahnila, (2004) defines internet banking as an internet portal through which customers can use different kinds of banking services ranging from bill payment to making investments. The adoption of technology by the banking industry in many countries around the world has been at a very high level, the process has been slow in India over the last several years.

However, the emergence of new private-sector banks in the country has changed the scenario drastically, as the business model of these new banks revolved around a strong IT backbone. Their emergence and success over the last decade has put competitive pressure on many of the state-owned banks to look at IT as a strategic necessity to remain competitive.

Customer service is very necessary for the success of any business organization. It is very essential to understand the key success factors in terms of customer satisfaction so as to survive in penetrating competition and to increase the market share. In the global banking scenario, cost savings potential and speed of transmitting information are a sudden reason to change internet banking scenario in India. Today, banks in India are introducing internet banking service to their customers in order to retain their existing customers as well as attract new customers.

1. STATEMENT OF THE PROBLEM

The blending of information and communication technologies in the banking workplace has created a major shift in the way of conducting banking transactions. A remarkable increase of internet banking service happened in the 1990’s because of

the immense popularity of internet technology. Nowadays, banks have adopted internet as trusted medium for delivery of their wide range of services to the customers. So the banks have been shifted from conventional banking to modern system of banking. In conventional system of banking a customer have to visit the branch in person for conducting banking activities. The global banking platform experienced a massive change due to the emergence of internet banking system and India is not an exception to that. The introduction of internet banking service has motivated many banks to focus on information and communication technology strategies in order to stay competitive. Internet banking has plenty of merits which create value to customer satisfaction in terms of offering high quality services and also facilitates the banks to increase their income and achieve competitive edge. Internet banking provides wide variety of services to the customers which includes, balance enquiry, view or download account statement, transfer of funds, payment of utility bills, recharge of mobile phones, e-ticketing, application for online loan, request for debit/credit cards etc.

According to internet world stats\(^4\), total number of internet users in India is 462.1 million as on June 30, 2016. This clearly indicates the habit of the people towards the use of internet based services. However, the penetration of internet is not well adopted by the banking customers in India due to number of reasons.

Hence, the purpose of present study is to obtain the answers for the following important questions.

• Which are the factors influencing the adoption of internet banking?

• Which are the various applications of internet banking?

• What is the most preferred application of internet banking among the customers?

• How service quality dimensions relates to customer satisfaction?

• Are there any demographic differences in the internet banking adoption?

• What are the reasons for the non-adoption of internet banking?

In the light of above conditions, the researcher has made an attempt to bring out solution for the research problem through this research.

The source of identification of the problem is mainly based on literature. The researcher has reviewed large number of literature in the field of self-service banking technology particularly; internet banking and found that relatively, a few empirical studies has been carried out in India particularly in Kerala in relation to internet banking. Therefore, the researcher felt that there is a greater need to have a holistic study from the perspective of bank customers using internet banking services. Therefore, the present study has made an attempt to bridge this gap to some extent.

2. **REVIEW OF LITERATURE AND THEORETICAL FRAMEWORK**

An extensive literature survey was carried out by the researcher in order to identify and describe related works that has already been done and summarizes the state of knowledge about the research. The review of literature aims to comprehensively evaluate the existing research conducted in the area of customer
satisfaction in internet banking services. The survey and review of literature in the relevant area helped the researcher to frame the theoretical background of the study and also facilitated to identify the research gap. The relevant and available literature is classified and presented under the following three main headings: 1) Internet banking studies conducted outside India, 2) Internet banking studies conducted in India, 3) Internet banking studies conducted particularly in Kerala.

**Internet banking studies conducted outside India**

Ahangar, (2011)\(^5\) investigated the determinant of customers’ choice and satisfaction of internet banking in Iranian banking industry. The aim of the present study was to understand the various service quality dimensions and its effect on customer satisfaction. The study also assessed the impact of various demographic variables on customer satisfaction. The analysis of the study resulted in five variables such as reliability, responsiveness, efficiency and privacy of information and easiness to use. It was found that all the variables have a strong impact on customer satisfaction.

Akinci, Aksoy, & Atilgan, (2004)\(^6\) conducted a study titled “Adoption of internet banking among sophisticated consumers segments in an advanced developing country”. The purpose of this study was to understand the adoption and attitude of the highly educated consumers with respect to internet banking. During the stage of data collection, the samples were collected from both users and non-users of internet banking. The result of the study discovered that there exist

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significant differences between the users and non-users of internet banking with regard to attitude and the service delivery choice of the consumer. The study also contributes some insights to the banking institutions and their officials in order to improve the customer service.

Al-Ajam & Md Nor, (2013)\(^7\) studied the factors influencing behavioural intention to use internet banking among customers in Yemen. Here, an extended Technology acceptance model (TAM) was used by the researchers in order to develop a new research model. The new variables were added in to the existing TAM model namely, compatibility and trialability. The results indicated all the variables having positive relationship towards intention to use internet banking. The study also found variables like perceived ease of use, perceived relative advantage, compatibility and trialability have played an important role in customers’ decision to adopt internet banking.

Aldas-Manzano, Ruiz-Mafe, Sanz-Blas, & Lassala-Navarré, (2011)\(^8\) in their study investigated the role of satisfaction, frequency of use, trust and perceived risk on consumer loyalty towards internet banking websites. The study also tried to examine the moderating effects of trust, frequency of use of the service, and perceived risk on the relationship between customer satisfaction and loyalty. The study observed that trust, satisfaction and less amount of risk were the key inputs for increasing the customer loyalty in banks.


Amin, (2009)\(^9\) conducted a study titled “An analysis of online banking usage intentions: an extension of the technology acceptance model”. The study followed Technology Acceptance Model (TAM) as the base model to examine the internet banking acceptance towards banks customers. The study showed those factors like, perceived usefulness, perceived ease of use, perceived credibility and social norm creates positive impact on customer adoption of internet banking services while perceived enjoyment was proved to be statistically insignificant. The study suggested that, the results were helpful to the banks in order to frame suitable policies and standards for online banking.

Arezou, T, Wallstrom, & Omid, (2009)\(^10\) in their study examined the factors affecting adoption of internet banking by Iranian customers. The study constituted samples from both users as well as non-users of internet banking. They observed that security issues and ignorance about the use of technology was the main reason for the non-adoption of internet banking among the customers. Another major observation of this study was that gender and occupation plays vital role in the acceptance of internet banking. The empirical evidence shows that, in Iran many of the government employees are using internet banking services. The outcome of this study suggest that, better customer service and persuasive customers about the use and benefits of internet banking will contribute more number of adopters in to this segment.

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Bente, (1994), conducted a study titled “Concepts of service quality measurement in banks”. In this study, the researcher used SERVQUAL model in order to measure the service quality of Raiffeisen bank in Romania. The purpose of the study is to explore the relationship between service quality, customer satisfaction and loyalty. The study found that ‘Trust’ have positive impact on service quality. That means, banks provides quality services to the customers by handling customers service delivery issues quickly and promptly and another major outcome from this study was variables like ‘Responsiveness’ and ‘Empathy’ creates negative relationship towards service quality and customer satisfaction.

Chen, Hsiao, & Hwang, (2012) conducted a study to measure the customer satisfaction in Taiwan. The purpose of the study was to develop and validate a standardised model for measuring customer satisfaction in the context of internet banking. The study developed eighteen items instrument with sub scales which includes accuracy, content, format, ease of use, timeliness and safety. The result of the study indicates that content and format have the highest influence on the customer satisfaction of internet banking. The study recommends that the researcher can adopt this instrument for evaluating the customer satisfaction of internet banking.

El-Kasheir, Ashour, & Yacout, (2009) studied about the customers continued intentions to use internet banking among Egyptian customers. Their study

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was based on renowned theories of behavioural intentions such as theory of planned behaviour, theory of reasoned action, theory of decomposed planned behaviour, the technology acceptance model and the theory of diffusion of innovation. The study found that perceived ease of use is the powerful predictor of customer’s intention to use internet banking and variables like, perceived risk and demography had no effect on customers’ continued usage of internet banking services.

Fatemeh, Afshari, & Esmaili, (2014)\textsuperscript{14} in their study identified the impact of service quality on customer satisfaction in internet banking in Iran. The conceptual framework followed for this study was based on the variables like, reliability, efficiency, responsiveness, fulfillment, privacy or security and website design. The study discovered that all the six factors have significant influence on customer satisfaction among which reliability has the most significance and website design has the least influence on customer satisfaction.

Hong, Teh, Vinayan, & Hooi, (2013)\textsuperscript{15} studied about the factors influencing adoption of internet banking services in Malaysia. The study concluded that, the factors like complexity, security and customer experience were the most significant reasons to adopt internet banking among the customers and individual characteristics found to be a partial influence in the customer adoption of internet banking.


Ismail & Osman, (2012)\textsuperscript{16} in their study “Factors influencing the adoption of e-banking in Sudan: perceptions of retail banking clients” aims to identify the factors influencing the adoption of e-banking in Sudan. The main objective of this study was to examine the usage level of e-banking among the customers of Sudan and to measure whether there is any relationship between demographic features and usage level of e-banking. The study results show that ATM is the most widely used channel of e-banking. The output of the study also indicates that usage of e-banking largely depends on customers’ income, type of account, computer and internet knowledge. The study suggests that demographic features like, gender, marital status, education and occupation do not keep significant relationship with e-banking adoption.

Jahangir & Parvez, (2012)\textsuperscript{17} in their study investigated the factors determining customer adaptation to internet banking in Bangladesh. The study developed a theoretical model based on the literature available in the relevant area. They identified four independent variables viz, convenience, compatibility, importance of internet banking needs and communication. The study revealed that all the mentioned variables are significantly associated with the customer’s intention to use internet banking services. The study suggested that bankers should run the internet banking on a trial basis for making awareness among the customers. The results from this study can be used by bankers for preparing new policies and standards for internet banking.


\textsuperscript{17} Jahangir, N., \& Parvez, N. (2012). Factors determining customer adaptation to internet banking in the context of private commercial banks of Bangladesh. \textit{Business Perspectives \& Research, 25–36}. 
Jenkins, (2007)\textsuperscript{18} in his study titled “Adoption of internet banking: Evidence from France” examined the factors influencing the adoption of internet banking in France. The study has used a combination of both quantitative and qualitative methodology for identifying the important variables. The present study was carried out on the basis of previous study conducted in Mexico regarding internet banking adoption. The important variables identified in this study was difficulty, compatibility, autonomy, trust, security, third-party concerns, pragmatism and reference group influence. The study ended with a conclusion that the variables identified from Mexico and France are similar except the variables like, autonomy and pragmatism. These two variables were not in Mexican case; instead they have variables like, human contact and computer proficiency.

Laura Bradley & Kate Stewart (2002)\textsuperscript{19} in their study titled “A Delphi study of the drivers and inhibitors of internet banking” examined the important drivers and inhibitors of industry and future level of adoption of internet banking. The methodology used by the researcher was based on Delphi technique which is a tool for exploring the future. The study established that internet banking will become a popular electronic delivery channel in the near future.

Liao & Cheung, (2008)\textsuperscript{20} developed a model for measuring consumer satisfaction in internet banking. The proposed model includes six variables such as usefulness, ease of use, reliability, security, responsiveness and continuous improvement.


Lichtenstein & Williamson, (2006) conducted a study titled “Understanding consumer adoption of internet banking: An interpretive study in the Australian banking context”. In this study, researchers listed out many variables which affect consumer adoption of internet banking services like convenience, attention, accessibility, self-efficacy, risks, cost, trust, security, privacy, financial, procedural, relational, usability, relative advantage, knowledge and support. The study concluded that convenience is the strongest motivator for consumers to adopt internet banking. The output of the study also suggests that, banks should educate the consumers on the use and benefits of internet banking services.

Maditinos, Sarigiannidis, & Dimitriadis, (2007) studied about the Greek consumers’ e-shopping behaviour by using an extended Technology acceptance model (TAM). The study proposed a new model for predicting consumers’ intention to purchase online by incorporating additional variables in to original TAM model. The study revealed that variable such as perceived ease of use has a strong relationship towards the use of online shopping. The variables like perceived usefulness and perceived risk have significant influence on the online purchase intention of the customers.

Maduku, (2013) made an empirical study among the internet banking users of South Africa. The study extended TAM model by incorporating additional variables like, subjective norm, trust and demographic variables. The output of the


study indicates that perceived ease of use, perceived usefulness and trust having positive relationship with attitude. Another major observation of this study was that demographic features are not significant predictor of internet banking adoption. He recommended that the findings of this study enables the banks to attract new customers to adopt internet banking and it also increases the use of internet banking among existing customers.

Mansumitrchai & Chiu, (2012)\textsuperscript{24} in their study indentified the reason for the adoption of internet banking among the UAE consumers. The study observed that adopters and non-adopters of internet banking differed on the aspects of attitudes toward three important factors which include compatibility, human contact and trust. Another significant finding was that human or physical contact and trust were the significant factors for non-adopters.

Margaret & Mauchi, (2013)\textsuperscript{25} in their study examined the impact of socio-demographic factors on internet banking adoption. The purpose of the study was to establish the relationship between various socio-demographic variables such as age, occupation, educational level and income with the adoption of internet banking. The result of the study reveals that all the mentioned variables have significant positive relationships with internet banking adoption.


Minjoon Jun & Shaohan Cai (2001)\textsuperscript{26} in their study examined the problems associated with internet banking service quality. The study examined seventeen dimensions of internet banking service quality, under three broad heads like, customer service quality, banking product service quality and online systems quality. The study found that reliability, responsiveness, access and accuracy were the main requirements for the satisfaction and dissatisfaction of the customers using internet banking.

Munusamy & Run, (2012)\textsuperscript{27} studied about the adoption of retail internet banking services among the consumers of Malaysia. The results from the study revealed that only age have significant influence on the adoption of internet banking. The other variables like, gender, race, income, education and occupation were not found as significant influences on the adoption. The study also suggests that consumers’ belonging to the age group of 25 years shows more inclination towards the adoption of internet banking. The study recommends that bank should take necessary initiatives for encouraging the use of internet banking among other age groups.

Muzividzi, Mbizi, & Mukwazhe, (2013)\textsuperscript{28} in their study titled “An analysis of factors that influence internet banking among intellectuals: Case of Chinhoyi University of technology” identified the significant factors that impose hurdle and way to adoption of internet banking. The major variables identified in this study are

\begin{thebibliography}{9}
\bibitem{27} Munusamy, J., & Run, Ernest Cyril de. (2012). Adoption of Retail Internet Banking: A Study of Demographic Factors. \textit{Journal of Internet Banking and Commerce}, 17(3).
\end{thebibliography}
security, internet experience factor, internet prestige, marketing exposure, internet skills factor, reliability and demographic profile of the respondents. The summary of the hypotheses testing shows that there is significant association between education and the adoption of internet banking. But in the case of age there is no significant relationship with the adoption of internet banking. The main suggestion of this study was the bank should take necessary initiatives to promote internet banking among the customers of the bank.

Nor & Dunarea, (2011)\textsuperscript{29} studied about the internet banking adoption among Romanian customers. The study was developed on a new research model based on different theories such as innovation diffusion theory, technology acceptance model, trust and security, and decomposed planned behaviour. The variables drawn from these theories are perceived usefulness, perceived ease of use, compatibility, self-efficacy, technical resources, security and cost. The outcome of this study evidenced that compatibility is the strongest predictor of customer’s intention to use online banking services. The study also discovered that factors like, security, cost, perceived usefulness, and technical resources have medium effect on customers’ adoption of internet banking.

Padachi, (2008)\textsuperscript{30} in their study tried to explore the most important application of internet banking services. The study found that, internet account transfer, payment to other personal accounts, recharge of mobile phones, transfer to credit card accounts, standing order instructions etc., are the most preferred


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application of internet banking among the customers of the bank. Another major outcome of the study was ease of use is the most significant factor affecting internet banking adoption followed by other variables like, reluctance to change, trust and relationship in banker, cost of computer, internet accessibility, convenience to use and security features.

Polasik & Wisniewski, (2009)\textsuperscript{31} in their study titled “Empirical analysis of internet banking adoption in Poland” found the factors which fundamentally influence the internet banking adoption in Poland. According to the researchers, the key factors underlying the decision to adopt internet banking includes, perceived security, internet experience, type of internet connection used, marketing exposure, use of other banking products and demographic features. The results of the study indicate that there is significant relationship between the decision to open an internet banking account and the level of security associated with such transactions. It was found that the experience with internet and certain demographic attributes also played inevitable role in the prediction of internet banking.

Qayyum & Ali, (2012)\textsuperscript{32} conducted a study titled “Factors determining customer’s adoption of internet banking: A quantitative study of Swedish customers”. The study discovered that the foremost factors determining the adoption of internet banking includes security, quality of information, service quality, trust and privacy.


R. A. Gbadeyan (2011)\textsuperscript{33} conducted a case study among selected banks in Sierra Leone. The purpose of the study was to assess the customers’ preference for e-banking services on the basis of quality of the services or product offered. The study has pointed out the important drawbacks of using e-banking services. The study observed that there is an increased concern about security and privacy aspects of e-banking services due to the transmission of data through computers or internet.

Radomir, L., Nistor, (2013)\textsuperscript{34} in their study identified the factors which influence the adoption of internet banking among Romanian bank customers. The structural equation modeling has been employed for establishing the relationship between the variables in the proposed model. The study found that the variables like perceived usefulness, perceived ease of use, perceived security/privacy and image have significant influence on the intention to continue to use internet banking among the customers.

Ramseook-Munhurrun & Naidoo, (2011)\textsuperscript{35} conducted a study on the customers’ perspectives on service quality in internet banking in Mauritius. The study observed four important dimensions of service quality such as reliability-responsiveness, security, ease of use and accessibility. It was found that accessibility had the greatest impact on customer satisfaction followed by reliability-responsiveness. Another significant finding of this study was that security plays vital role in the customer decision to use internet banking.


\textsuperscript{34} Radomir, L., & Voicu Cosmin Nistor. (2013). An application of technology acceptance model to Internet Banking services. 251–267.

Santouridis, Trivellas, & Reklitis, (2009) in their study looked at internet service quality and customer satisfaction. The study was conducted in Greece and the sample respondents were picked up from the six largest Greek banks which hold 73% of total market share. The purpose of this study was to identify various dimensions of internet banking and its effect on customer satisfaction. The theoretical framework used for this study was based on SERVQUAL model propounded by Parasuraman et al. The study found six important dimensions of service quality in relation to customer satisfaction such as assurance, quality of information, responsiveness, web assistance, reliability and empathy. The results of the study indicate that reliability is the most powerful dimension of service quality in internet banking.

Sathye, (1999) conducted an empirical study about the adoption of internet banking among the Australian customers. The primary data were collected from the individual residents and business firms in Australia. The study found that lack of awareness and security concern were the major obstacles for the development of internet banking.

Shah Alam, Khatibi, Solucis Santhapparaj, & Talha, (2007) examined the factors influencing adoption of internet banking services among Malaysian customers. The study proposed a model which consisted of six independent variables namely, ease of use, awareness, security, cost, reluctance to change and

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accessibility. The outcome of this study proves that awareness, security, cost and accessibility are much important to the adoption of internet banking. They observed that factors like ease of use and reluctance to change are not significant in terms of customer adoption of internet banking.

Siu & Mou, (2005)\(^{39}\) conducted a case study for measuring service quality of internet banking among the customers of Hong Kong. The study also investigated the impact of service quality dimensions on customer satisfaction and future consumption intentions. Credibility, efficiency, problem handling and security were the significant variables identified through this research. The study found that all the variables have significant influence on customer satisfaction except efficiency. Besides, security and efficiency were significantly associated with future consumption behaviour of the customers.

Spathis, Petridou, & Glaveli, (2004)\(^{40}\) studied about the service quality based on the customer perceptions and also examined the effect of gender on various service quality dimensions such as effectiveness and assurance, price, access, tangibles, reliability and service portfolio. The analysis of the study found that gender has significant relationship with various service quality dimensions.

Thulani, Tofara, & Langton, (2009)\(^{41}\) in their study investigated the extent of adoption and usage of internet banking in Zimbabwe. The study revealed that majority of the customers use internet banking for checking the account balance,

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payment of bills and account transfers. The study concluded that majority of the commercial banks in Zimbabwe adopted internet banking system but the usage levels have remained comparatively low. The study recommends that the bank should conduct awareness programs in order to increase the use of internet banking.

Wu Yu-Lung et al., (2010)\textsuperscript{42} conducted a study on the subject “Learning from the past and present: measuring internet banking service quality”. The aim of the study was to give a holistic reading of e-service quality embedded with cultural factors. Based on exploratory factor analysis and confirmatory factor analysis method, five important variables were identified such as efficiency, contact, reliability, privacy/security and responsiveness. The study projected an in-depth procedure for the scale development and purification which is applicable to areas aside from electronic banking.

Zhengwaei Ma et al., (2011)\textsuperscript{43} studied about the e-banking quality in the China commercial banking sector. The aim of the study was to investigate the factors affecting e-banking quality in the China commercial banking sector. In this study, the researcher pointed out number of independent variables such as reliability, efficiency, comfort, serviceability, security, privacy, product differentiation, reputation, assurance, convenience and customization. The results of the study showed that, all the independent variables were significantly related to online banking service quality and among these, customer services is the most important variable influencing online banking service quality.


Internet banking studies conducted in India

Anand & Selvaraj, (2012)\textsuperscript{44} in their study examined the relationship between the demographic variables and its impact on customer satisfaction. Another important objective of this study was to describe the profile of the bank customers. The analysis indicates that there is no significant association between the demographic variables of the sample respondents and the level of customer satisfaction except preference of the bank and the residential area of the respondents.

Gupta & Bansal, (2012)\textsuperscript{45} in their study developed a valid instrument for measuring the service quality of internet banking in India. The study also examined the impact of service quality dimensions on overall internet banking service quality and customer satisfaction. Based on the results of factor analysis five important variables were identified which include reliability, security/privacy, efficiency, responsiveness and site aesthetics. The confirmatory factor analysis technique was used to validate the discovered variables. The analysis of the primary data showed that all the variables have significant impact on overall internet banking service quality as well as customer satisfaction. Even though, security/privacy and efficiency aspects carry a strong impact on the overall internet banking service quality and customer satisfaction respectively.

Kamakodi & Khan, (2008)\textsuperscript{46} studied about the perception on technology enabled services and customer preference in banking. According to the study, the

main indicators of the service quality are access, web interface, trust, attention and creditability. The study recommends that the bank should try to understand the expectations of customers and deliver the services according to their needs and preferences.

Kamini Singh (2011)\textsuperscript{47} in her study looks at the various innovated services offered by the banks such as internet banking, mobile banking, card banking, phone banking and inter branch banking. The purpose of this study was to understand how innovated banking technology affected the banking services. The outcome of the study revealed that there are differences in the innovated services offered by the banks based on goodness. Based on factor analysis technique two important factors were identified namely, quick and variety of value added services and bank location in terms of security and convince which are highly influencing the respondent toward choosing the bank.

Kaura, (2013)\textsuperscript{48} conducted a study titled “Service convenience, customer satisfaction and customer loyalty: study of Indian banks”. The study explores the different dimensions of service convenience which includes; access convenience, decision convenience, transaction convenience, benefit convenience and post benefit convenience. The study found that decision convenience is the most influential factor affecting customer satisfaction.

\textsuperscript{47} Kamini Singh. (2011). Innovated technology in Banking services. \textit{Journal of Internet Banking and Commerce}, 16(2).

Kesharwani & Radhakrishna, (2013)\(^{49}\) conducted a study to identify the drivers and inhibitors of internet banking adoption in India. The study investigated seven factors such as perceived benefit, hacking and fraud risk, performance risk, computer self-efficacy, technology complexity, social influence and pricing concerns which influence the adoption of internet banking in India.

Khan, Mahapatra, & Sreekumar, (2009)\(^{50}\) in their empirical study evaluate the service quality of internet banking services among the customers. According to the study, internet banking provides large number of benefits to the customers in the way of conducting banking activities. They opined that internet banking removes the complexity of conventional banking system. The present study was carried out from the perspectives of customers as well as bankers. From the customer’s point of view, service quality contains sought quality and perceived quality. Sought quality implies the customer expectations from the service providers and perceived quality indicates the overall experience of the customer about the quality after service realisation. The provider’s perspective includes both target quality and delivered quality. The study concluded that customers were well satisfied with the reliability of the services offered by the banks and unsatisfied with the user-friendliness and security / Privacy aspects of internet banking.

Khurana, (2009)\(^{51}\) studied the customer preference for internet banking and identifies the various dimensions of service quality that affect customer satisfaction.

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in internet banking in India. The study inferred that the most important service quality dimensions are responsiveness, fulfillment, privacy of personal information, efficiency and easiness to use.

Kumar, V.V., Ravi, Bose, S.K., Raghavan, (2011)\(^{52}\) in their study identified the factors influencing the intention to use internet banking among post graduate students. For the purpose, they have applied Technology acceptance model (TAM) in an extended format. The variables included in this study were perceived ease of use, perceived usefulness, security and privacy, and access to computers and internet. Factor analysis was used to measure the convergent validity of the scales. The result of the study reveals that the variables like perceived usefulness and security and privacy had a significant association with the intention to use internet banking while the factors like, perceived ease of use and access to computers and internet was not statistically significant in the intention to use internet banking. The research pointed out that internet banking provides lot of benefits to the customers in the form of easy access and cost effective delivery channel. They concluded that in India, the youth are in the forefront of technology adoption and its usage. The study also found that there is a need for strong security and privacy system for the smooth functioning of internet banking service in our country.

M.D Mahatab Alam, (2012)\(^{53}\) in his doctoral thesis titled “Customer satisfaction measurement of internet banking” identified that the users of internet banking in India is less as compared to developed countries. It has been noticed that

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dissatisfaction is the most significant reason for the poor growth of internet banking in our country. The study pointed out that factors like reliability, customer expectation, customer secrecy and tangible had positive relationship towards customer satisfaction of internet banking. On the other hand, service delivery system and efficiency had negative influence on customer satisfaction of internet banking.

Nautiyal, (2014)\textsuperscript{54} evaluates the impact of service quality dimensions on customer satisfaction in the retail banking sector in India. The theoretical framework used for this study was based on the SERVQUAL model in which 22 items were grouped in to five major heads such as, tangibility, reliability, assurance, responsiveness and empathy. The outcome of this study revealed that all the five items identified in this study demonstrate positive relationship with customer satisfaction.

Safeena, Date, & Kammani, (2011)\textsuperscript{55} in their article studied the adoption of internet banking in India. The variables considered for this study was based on Technology acceptance model. Apart from, perceived usefulness and perceived ease of use, an additional variable was incorporated to the original TAM model. The study found that all the three variables have significant influence on the adoption of internet banking. The outcome of this study reveals that ATM was the most popular banking technology used by the customers. They opined that the growth of internet banking is comparatively slow in our country due to number of reasons like, lack of knowledge about the use of technology, security issues, complexity etc.


Sawant, Kulkarni, & Mundhe, (2013)\textsuperscript{56} made an attempt to study the impact of electronic services on customer satisfaction. The study conjointly presents how information and communication technologies (ICT) affects the e-services of selected public and private sector commercial banks. The study put forward an important suggestion that the bank should enhance the quality of services and keep the bank’s website updated because the web pages is considered as one of the best marketing tool for promoting the product and services of the bank.

Singhal & Padhmanabhan, (2008)\textsuperscript{57} in their study discovered the important factors contributing towards the adoption of internet banking on the basis of respondents’ perception on different internet banking applications. The major factors include utility request, security aspects, utility transactions, ticket booking and transfer of funds. The researcher has also made an effort to check whether there is any significant relationship that exists with demographic factors such as age, gender and respondents’ perception about internet banking and whether user and non-user perception differs.

Uprit Vivek, (2012)\textsuperscript{58} conducted a study on satisfaction and effectiveness of virtual banking in comparison with real banking. The study opined that technology plays a key role in the overall development of an economy. The study also tried to bring out the various risks involved in virtual banking in comparison with real

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\textsuperscript{58} Uprit Vivek. (2012). Satisfaction and effectiveness of virtual organization in excess of real organization: a study of selected commercial banks in India. \textit{Journal of Internet Banking and Commerce}, \textit{17}(1).
banking. The study concluded that customer prospective use of virtual banking is differing as the use of real banking.

**Internet banking studies conducted Particularly in Kerala**

Aneeshkumar, Fernandez, & G.S Gireeshkumar, (2013)\(^{59}\) in their study assess the risks and trust of internet banking in Kerala. The aim of this study was to describe the profile of internet banking users in Pathanamthitta district in Kerala. Another important objective of this study was to identify the various applications of internet banking among the bank customers. The study found that the most widely used application of internet banking was balance enquiry followed by recharge of mobile phones and payment of utility bills. The study concluded that there is no significant difference between gender of the respondents and risk in internet banking. The study discovered that there is significant difference between gender of the respondents with trust towards e-banking services.

George & Kumar, (2014)\(^{60}\) in their research “Impact of service quality dimensions in internet banking on customer satisfaction” explains the various dimensions of service quality of internet banking and its effect on customer satisfaction. The study observed different dimensions of service quality like website attributes, reliability, responsiveness, fulfillment, efficiency, privacy and security. The outcome of the study revealed that variables like website attributes and efficiency showed a negative influence towards service quality and customer satisfaction. The study recommends that, the findings of this study will help the

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banks to boost their internet banking services through elevating these service quality dimensions.

George, (2013)\textsuperscript{61} in his thesis titled “A customer centric study on internet banking in Kerala” examined the customer perception in various aspects of the use of internet banking. The study found that the customers are satisfied with the quality of services provided and their satisfaction depends on various service quality dimensions. The outcome of the study recommended that there is urgent need for creating awareness among the customers about the security aspects of internet banking.

Kumar, Bijoy, & George, (2012)\textsuperscript{62} in their study investigated the effect of service quality dimensions on the adoption of internet banking among the bank customers in Kerala. The purpose of this study was to establish an interrelationship between the service quality dimensions and the adoption of internet banking. The study identified following important variables such as reliability, website attributes, responsiveness, fulfillment, efficiency, privacy or security. The study found that website attribute was a robust predictor of internet banking followed by security/privacy. The study concluded that, in Kerala the growth of internet banking is at slow pace due to many reasons. The study suggests that banks should design suitable strategies and policies in order to improve the customer service.


Sudeep, S. (2007)\textsuperscript{63} in his thesis titled “Internet banking and customer acceptance: the Indian scenario” identified various factors influencing customers intention to use internet banking. The study proposed a model based on the theory of Technology acceptance model. According to the study, the variables such as perceived usefulness, perceived ease of use, quality of facilities, consumer awareness and subjective norm had positive influence on internet banking use. Similarly, the variables like, consumer security concerns and trust and privacy had negative impact on the use of internet banking. The study suggests that the outcomes of present study would be helpful for banks to improve their internet banking services.

V. P. Raju (2014)\textsuperscript{64} conducted a research “Influence of technology in banking- A Customer centric study with special reference to Kerala”. According to his study, the customer satisfaction in electronic environment is determined by the website, efficiency, competency and information given by the bank. The study also found that these factors are influenced by the gender, income and computer knowledge of the respondents. The study brought out various factors influencing the adoption of various self-service banking technologies among the customers and also identified the barriers which limit the use of various delivery channels.


Theoretical Framework

Theories on innovation adoption

The “Theory of Reasoned Action (TRA)” originally propounded by Fishbein and Ajzen in 1975, is probably regarded as one of the best influential theory used to enlighten human behaviour (Venkatesh et al., 2003). The theory argues that the behavioural intention can be assessed by the attitude towards subjective norm and behaviour. Here, the attitude towards behaviour is described as individual’s positive and negative feelings about performing the target behaviour (Fishbein & Ajzen, 1975). Subjective norm refers to the person’s perception that most people who are important to him think that he should or should not perform the behaviour in question. The “Theory of Planned Behaviour” (TPB) was developed by Ajzen in 1985. The aim of this theory was to improve the predictive power of the theory of reasoned action (TRA) by incorporating additional variable namely, perceived behavioural control. TPB is a social psychology theory that links beliefs and behaviour. The perceived behavioural control reflects how individual perceive the internal and external limitations of their behavior. Another important theory in this series is Innovation Diffusion Theory (IDT) by Rogers, in 1983. This theory states that individuals will collect and synthesize information regarding the technology before they adopt. The process of synthesizing information forms certain beliefs and it will determine whether to accept or reject a particular

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technology. According to Rogers (1983)\textsuperscript{68}, the important beliefs associated with individuals to adopt an innovation are compatibility, relative advantage, trialability, complexity and observability. Relative advantage means the degree to which an innovation is perceived as being better than its antecedent. The term compatibility refers to the degree to which an innovation is perceived consistent with individual values and beliefs. Trialability means the degree to which an innovation is tried out on a limited basis before the decision to be adopted. Complexity is concerned with the difficulty to learn or understand particular technology. Observability means whether the outcome of the innovation is visible to others. The theory \textbf{“Decomposed Theory of Planned Behaviour (DTPB)”} was propounded by Taylor and Todd in 1995\textsuperscript{69}. The theory states that an individual decision to adopt or use a technology is associated with three significant variables such as attitude, subjective norm and perceived behavioural control.

\textbf{Technology Acceptance Model (TAM)}

The theory \textbf{“Technology Acceptance Model”} has been modified from the \textbf{“Theory of Reasoned Action”} which elucidates individual behaviour based on the factors like intentions and beliefs. Today, TAM has been widely used in the area of information technologies and systems. The TAM is considered to be the sound, well-established, parsimonious and prominent system in explaining information system behaviour. According to the theory, two beliefs are very essential for the acceptance of a technology namely, Perceived ease of use and Perceived usefulness.


In order to achieve the objective of the study, researcher has employed the TAM for identifying the factors influencing the adoption of internet banking among the banking customers in Kerala. The theoretical framework with regard to adoption of internet banking is based on Technology Acceptance Model (TAM).

**Measurement of adoption variable and Hypotheses development**

In the words of Loudon and Della Bitta (2002)\(^{72}\) the term “adoption” means the acceptance and continued use of a product by an individual. It is clearly evident from the literature that frequency of use and duration of use of internet banking by the customers are found to be important measures to predict the usage of internet banking (Eriksson et al., 2005).\(^{73}\) In this study, the researcher has been analyzed respondent’s frequency and duration with regard to the usage of internet banking. Thereafter, the composite score computed and their summated scores are used to build up a measure for extent of adoption (adoption level).

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Based on the extensive literature review and the results from the exploratory factor analysis technique, the following important variables were identified. These are as follows:

- Perceived usefulness
- Perceived ease of use
- Self-efficacy
- Bank trust worthiness and prompt service
- Importance of internet banking needs

**Perceived usefulness**

Perceived usefulness refers to the “degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989). The earlier studies in internet banking have noticed the significance of perceived usefulness in internet banking adoption (Amin Hanudin, 2009; Radomir et al., 2013; and Pikkarainen et al., 2004). On the basis of these findings, the following null hypothesis is formulated.

$H_0$: There is no significant relationship between perceived usefulness and the adoption of internet banking.

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**Perceived ease of use**

Perceived ease of use is defined as the “degree to which a person believes that using a particular system would be free of effort (Davis, 1989). It is evident from the literature that perceived ease of use is widely used in the adoption studies in the context of internet banking (Rawashdeh Awni, 2015; Maduku D.K 2013). Based on these findings, the below null hypothesis is proposed.

**H₀₂:** There is no significant relationship between perceived ease of use and the adoption of internet banking.

**Importance of internet banking needs**

The importance of internet banking is often expressed as effectiveness, time and effort savings, immediacy of the reward or as a decrease of discomfort and social prestige (Jahangir et al., 2012). It is evident from the literature that internet banking is formed with the purpose of offering banking services at lower transaction cost. Hence, the researcher posit

**H₀₃:** There is no significant relationship between importance of internet banking needs and the adoption of internet banking.

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Self-efficacy

Self-efficacy refers to an individual’s belief in his/her capability to use internet banking services successfully (Bandura, 1977\textsuperscript{82}; Dinev et al., 2009\textsuperscript{83}). Hence, the researcher hypothesize

\textbf{H}_{0.4}: \text{There is no significant relationship between self-efficacy and the adoption of internet banking.}

**Bank trustworthiness and prompt service**

Bank trustworthiness and prompt services indicates the interpersonal trust: customer’s perception of it, such as its ability, integrity and benevolence (Almohaimmeed, 2012).\textsuperscript{84}

\textbf{H}_{0.5}: \text{There is no significant relationship between bank trustworthiness and prompt service with the adoption of internet banking.}

**Development of conceptual model**

It is proposed that perceived usefulness, perceived ease of use, self-efficacy, importance of internet banking needs, bank trustworthiness and prompt service are very significant in the context of their relationships with customer adoption of internet banking. On the basis of the preceding literature review, the conceptual framework illustrates the measured variables and their relationships in the current study.


Measurement of service quality, Customer satisfaction, Customer loyalty and Hypotheses development

The service quality means the customers’ judgment of overall service offered by the service provider. It can be defined as the gap between customer expectations and actual service perceived (Parasuraman et al., 1985). In simple words, the service quality is the difference between expectations and perceptions of the customers. In practice, the SERVQUAL is one of the widely used models for identifying the gap between customer expectations and perceptions. SERVQUAL

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model has been evolved in a series of steps starting from “Gronroos”\(^ {86}\). According to him, the service quality means the difference between customer expectations and perceptions about the service provided. It was the first study to conceptualize service quality from the viewpoint of the customers. Later on number of studies was carried out by Parasuraman et al., (1988\(^ {87}\), 1991\(^ {88}\)) in the domain of service quality. According to them, the Gaps model plays a significant role in the determination of service quality of a firm. They suggest that service provider should manage the gaps more effectively in order to provide quality services to the customers. According to Parasuraman et al., 1988\(^ {89}\), service quality is measured with 22 items categorized in to five dimensions such as reliability, tangibility, responsiveness, assurance and empathy. On the other hand, SERVPERF is another important model recommended by Cronin and Taylor in 1992\(^ {90}\). The author opined that service quality is a predecessor towards consumer satisfaction. In the words of “Caro and Garcia” (2007)\(^ {91}\), the measurement of service quality consider only the perceptions of the customers.

Based on extensive literature reviews the following important variables were identified. These are as follows.

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• Reliability

• Efficiency

• Responsiveness

• Fulfillment

• Privacy/security

• Website design

**Reliability**

The reliability dimension of service quality is concerned with the technical aspects of the websites. In other words, the information provided in the website is accurate.

**Efficiency**

The efficiency dimension of the service quality indicates the ability of a customer to get a website, and easy to find the product and services through the website.

**Responsiveness**

The responsiveness of the bank indicates the willingness to help customers in the form of solving their complaints or queries.

**Fulfillment**

The fulfillment dimension of the service quality is associated with accuracy and promptness in the delivery of products and services to the customers.
Introduction

Privacy/security

The privacy/security aspect of service quality indicates the safe use of internet banking and keeping the customers’ information highly confidential.

Website design

The website dimension of service quality indicates the attractiveness of the website including the provision of customized search functions, easy access etc.

Customer Satisfaction

Kotler (2000)\textsuperscript{92} defined satisfaction as “a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his or her expectations”. In the perspective of internet banking, customer satisfaction indicates electronic customer satisfaction. According to Anderson and Srinivasan (2003)\textsuperscript{93} “E-customer satisfaction refers to the contentment of the customer with respect to his/her prior purchasing experience with a given electronic firm. Cronin and Taylor (1992)\textsuperscript{94} argued that service quality is an antecedent of consumer satisfaction. The higher the perceived service quality, indicates the higher the customer satisfaction and vice versa.

Measurement of customer satisfaction

The current study measured customer satisfaction by using a three- item scale developed by Cronin et al., (2000)\textsuperscript{95}. Response categories were on a five-point


Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’. These items include,

- My choice to avail this bank service is a wise one
- I did the right thing when I choose this bank for its services.
- Services of this bank are exactly same as what I need

**Customer loyalty**

Customer loyalty means the commitment of the customer to repurchase or repatronize a favourite product or service consistently in the future. It can be defined as repeat purchasing and referral of a company to other customers (Heskett, Sasser and Schlesinger, 1997)\(^96\), generating positive and measurable financial results (Duffy 2003)\(^97\).

**Measurement of customer loyalty**

Customer loyalty was measured using a five item scale developed by Parasuraman et al., in 1996\(^98\). These items are rated in five-point Likert scales varying from “strongly disagree” to “strongly agree”. The items are; I say positive things about this bank to other people, I recommend this bank to others, I encourage friends and relatives to do business with this bank, I consider this bank my first choice to avail banking services and I will do more business with this bank in next few years.

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Development of conceptual model

On the basis of preceding works, Saha and Zhao’s model (2005) and Zeithaml, Parasuraman and Malhotra (2002), the researcher has developed a conceptual model consisting of six service quality dimensions such as Reliability, Responsiveness, Efficiency, Fulfillment, Privacy/Security and Website Design. The Website Design factor added and examined influence of this variable to customer satisfaction in internet banking.

![Conceptual model of service quality of internet banking](image)

Source: Compiled by the researcher

**Figure 3: Conceptual model of service quality of internet banking**

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3. SIGNIFICANCE OF THE STUDY

Internet plays a key role in transforming banking services into electronic form. Nowadays, internet technologies are extensively used in the service industries and internet banking is a well-known example. In India, internet banking was first introduced by ICICI bank, a new private sector bank in the year 1998. Following this, a large number of banks initiated internet banking service as a vehicle for delivering their products and services to the customers without any geographical restrictions. The advent of internet banking system has made a revolutionary change in the banking sector in our economy. Internet banking enables the customers to perform most of the banking services by sitting at their office or home through personal computer, laptop or mobile phone. The most highlighted features of internet banking is that it is echo-friendly due to paperless transactions and it also reduce pollution as people do not have to travel physically to the bank.

Research Gap identified

The purpose of this study is to examine the customer satisfaction towards internet banking services of select commercial banks in Kerala. The reason for selecting this topic is based on the fact that so far no studies have been carried out to understand the non-adoption of internet banking among the bank customers. In that perspective, the present study explains the reasons for the non-usage of internet banking service. Apart from the non-adoption, the study also made an attempt to list out the various factors influencing the adoption of internet banking and also tries to identify the various service quality dimensions of internet banking and its effect on customer satisfaction.
After the survey and review of an extensive literature, it was found that however, many studies were conducted in international scenario regarding the service quality and the adoption of internet banking but there exist only very few studies happened in India particularly in Kerala. Therefore, the current study has made an attempt to bridge this gap to some extent.

4. SCOPE OF THE STUDY

The scope of present study is limited to retail internet banking users and non-users of selected commercial banks in Kerala. The study is confined only to internet banking service and other electronic delivery channels such as ATMs, Telephone banking, Mobile banking etc. was not considered in the current study. The reason for choosing the state Kerala is mainly due to the existence of wide network of banks, increasing trend of literacy rate and high usage of internet. Only respondents from the public sector banks, old private sector banks and new private sector banks were considered for the present study. The customers of foreign banks were not included because of their limited number of branches in Kerala.

5. OBJECTIVES OF THE STUDY

The objectives of the study are:

- To assess the service quality of internet banking and its effect on customer satisfaction.

- To study the various applications of internet banking service provided by select commercial banks in Kerala and to identify the most preferred internet banking application by the bank customers.
• To identify the factors influencing the adoption of internet banking services among the customers of the bank.

• To study the relationship between demographic factors and customer adoption of internet banking

• To identify the reasons for the non-adoption of internet banking among the customers.

6. HYPOTHESES OF THE STUDY

The important hypotheses formulated for the study are:

- There is significant relationship between the factors influencing the adoption of internet banking and the extent of adoption of internet banking.

- There exists significant relationship between the service quality dimensions and the customer satisfaction of internet banking.

- There is significant difference between demographic factors and the customer adoption of internet banking.

7. RESEARCH METHODOLOGY

Research is a process to search or discover new knowledge. It involves systematic and scientific investigation about a phenomenon. The purpose of any research is to develop or contribute something new to the existing body of knowledge. There is difference between the term research methods and methodology. The research methods include all those techniques and methods that are essentially required for conducting a research work. On the other hand, the research methodology refers to the systematic and scientific way of solving the
The scope of research methodology is broader than research methods that involve the statement of the problem, research design and arrangement for data collection, data processing, analysis and interpretation of data, drawing logical conclusions and finally writing the report. The following sections provides a detailed explanation and justification for the methodology adopted for the present research work.

7.1 RESEARCH DESIGN

Research design means the overall strategy adopted by the researcher for the purpose of completing the research in a logical way. It involves the sampling design, collection of data, measurement and analysis of the data required for the study. In simple words, the research design is a document of the research study which contains detailed outline or blue print for how a research study is to be completed.

In the initial stage of the research, an exploratory design was carried out by survey and review of literature for the purpose of stating the research problem, identifying the variables and to formulate the working hypotheses. In the next level, a descriptive research design was undertaken for describing the characteristics of the respondents. In the last stage, an explanatory research design was adopted for establishing the relationship between the variables used in the present study.

7.2 PILOT STUDY

The researcher has conducted a pilot study for assessing the feasibility of the proposed study. The pilot study helped the researcher to check the adequacy of

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research instruments applied for the current study. At the initial stage, the research problem and geographical scope were identified and relevant studies gathered for review. After preparing the draft questionnaire, a pilot study was done with 90 respondents equally from three zones in Kerala. Accordingly, Kozhikode were selected from north zone, Ernakulum symbolize central zone and Trivandrum from south zone for convenient sampling method. The results of the pilot study helped the researcher to purify the scale items of the questionnaire and also checked whether the questions are adequate for the purpose and well understood. For this purpose, the face and content validity of the questionnaire were measured. The results of the pilot study enabled the researcher to reframe and rearrange the questions and make necessary modifications and changes to the draft questionnaire. After having considered all these drawbacks, a new questionnaire was developed for primary data collection.

Table 0.1
The Cronbach alpha Value (Internet banking adoption)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank trust worthiness and prompt service</td>
<td>.741</td>
</tr>
<tr>
<td>Importance of internet banking needs</td>
<td>.757</td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td>.729</td>
</tr>
<tr>
<td>Perceived ease of use</td>
<td>.810</td>
</tr>
<tr>
<td>Self- efficacy</td>
<td>.740</td>
</tr>
</tbody>
</table>

Source: Direct Survey

The above table 0.1 shows that all the independent variables have got the Cronbach alpha value above 0.7, which show good strong internal consistency. Therefore the questionnaire was further used for the main study.
Table 0.2

The Cronbach alpha Value (Service quality and Customer satisfaction)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>0.916</td>
</tr>
<tr>
<td>Fulfillment</td>
<td>0.947</td>
</tr>
<tr>
<td>Efficiency</td>
<td>0.935</td>
</tr>
<tr>
<td>Privacy/Security</td>
<td>0.875</td>
</tr>
<tr>
<td>Website Design</td>
<td>0.955</td>
</tr>
</tbody>
</table>

Source: Direct Survey

The above table 0.2 displays that Cronbach alpha value was greater than 0.7 which show good strong internal consistency. Thus the questionnaire was further used for the main study.

7.3 DIMENSIONS OF QUESTIONNAIRE

The purpose of designing questionnaire is to collect important information required to achieve the objectives of the study and to test the hypotheses. The researcher has taken utmost care to develop the questionnaire by ensuring proper wording, layout, sequence, use of simple language and clarity in statements. For collecting the primary data, the researcher has used two types of self- administered questionnaire based on the existing relevant literature.

Questionnaire development for internet banking users

The questionnaire for the research is divided in six sections. In the first section, the demographic profile of the respondents was included such as age, gender, locality, zone, educational qualifications, occupation and monthly income. The second section deals with the respondents’ proficiency in using computer and
internet. In the third section, general banking habit of the respondents was presented. Section four deals with the respondents’ experience with respect to internet banking and knowledge of various internet banking applications were asked. Section five is used to measure the service quality and customer satisfaction of internet banking. Section six contains the questions relating to various factors influencing the adoption of internet banking.

Questionnaire development for internet banking non-users

The aim of this questionnaire is to collect information regarding the non-adoption of internet banking among the bank customers. The questionnaire comprises of four major heads. The first section comprises the demographic profile of the respondents like age, gender, locality, zone, educational qualification, occupation and monthly income of the respondents. The next section contains the questions relating to respondents’ proficiency in using computer and internet. The third section talks about the general banking habit of the respondents. The last section aimed at identifying the reason for the non-adoption of internet banking among the bank customers.

All variables are measured by using Likert scale with five anchor points, specifically strongly agree, Agree, Uncertain, Disagree and strongly disagree. In order to ensure accurate responses from the respondents the researcher has promised to keep the confidentiality of the personal data and assured that such information would be utilised only for academic purpose. The copy of questionnaire is given in the appendix 1 and 2.
7.4 PRIMARY AND SECONDARY DATA COLLECTION

The researcher has used both primary and secondary data for present study. The primary data were directly collected from the sample respondents through structured questionnaire and formal and informal discussions with the bank officials. The secondary information plays significant role in this research which was collected from various sources such as journals, articles, working papers, e-resources, published books, study reports committees, newspapers and other published and unpublished sources. The secondary information was also collected from the official websites of RBI, Commercial banks, IAMAI etc.

7.5 SAMPLING DESIGN

The population of this study comprises the retail internet banking users and non-users of internet banking in Kerala. The multi-stage sampling technique was adopted in the study for the collection of primary data. The selection of the sample respondents were identified through various phases.

- In the first stage of sampling, the banks were divided into three categories namely, public sector banks, old- private sector banks and new- private sector banks or new generation banks, based on the classification made by RBI. The banks were selected from each category accordingly and SBI, SBT and Canara Bank were selected from public sector banks. SIB and Federal Bank were chosen from old- private sector banks and finally ICICI Bank and HDFC Bank were from new private sector banks. The selection of above mentioned banks were based on dual criteria; the banks which are in forefront in banking technology and got recognition for their excellence in banking technology from Indian Banks Association(IBA) and Institute for
Development and Research in Banking Technology (IDRBT), and highest number of bank branches in the state.

- In the second stage of sample selection, Kerala was divided into three different zones like North zone, Central zone and South zone based on the geographical difference. Further, two districts from each zone were chosen randomly. Accordingly, the south zone was represented by Thiruvananthapuram and Kottayam, the central zone by Eranakulam and Idukki, and the North zone by Kozhikode and Wayanad.

**Selection of Internet Banking Users**

Due to security and privacy issues and confidentiality in the nature of business, the details about the internet banking users could not be obtained from the bank. Therefore, the researcher approached respondents from the ATM outlets of the selected banks. The simple random sampling by lottery method was adopted to identify the ATM outlets. Finally, the respondents who are internet banking users visiting ATM outlets on the days of survey were chosen to participate in the survey.

**Selection of Internet Banking Non-Users**

This constitutes the customers who visit the ATM counters, but not maintaining internet banking account was selected to participate in the survey.

- In the third stage of sample design, a total of 1008 respondents were selected which includes, equal number of internet banking users (504 each) and non-users (504 each).
Sample size determination

The minimum sample size required for the study was calculated by using the formula given by C. R. Kothari (2004)\textsuperscript{103}. As per the formula, the minimum sample size required for this study is 387, which also shows that selected sample size of 1008 is adequate.

Andy Field (2009)\textsuperscript{104} states that 300 as good sample size, 100 as poor and 1000 as excellent. Therefore, it confirms that the sample size (1008) selected for this study is adequate.

8. RELIABILITY AND VALIDITY

Reliability and validity are the two important criteria for evaluating the goodness of measures used in a research instrument. The reliability shows whether an instrument can be interpreted consistently across different situations. Validity of a scale indicates the degree to the research instrument measure with what we actually intended to measure. In other words, validity tests what is supposed to measure.

**Face validity:** Face validity indicates the logical link between the research questions and the objectives of the study. In order to check the face validity of the questionnaire an initial draft was prepared and given to the panel of experts consisting three from academic backgrounds, and two from commercial banks (Bank Officials). They were asked to respond to the questionnaire and few comments were received back. After considering all these suggestions, necessary modifications and changes were done in order to enhance the clarity.


**Introduction**

**Criterion-related validity:** It shows the instrument’s capability to measure an item precisely and analyze it. In this study the researcher has used five-point Likert-type scale which is commonly used in management research. The criterion validity was ensured by using a common scale throughout the questionnaire.

**Content validity:** Content validity measure whether the procedure followed for the preparation of the measurement scale is appropriate (Peter & Churchil, 1986)\(^\text{105}\).

**Construct validity:** Construct validity is established with the theoretical relationship between one variable with other variable. If both constructs are related, it is called convergent validity and if both are unrelated, it is said to be discriminant validity. The convergent validity of a scale is measured by exploratory factor analysis technique.

**Reliability**

The researcher has computed Cronbach’s alpha coefficient for all the multi item scale used in the questionnaire and the alpha values calculated was above 0.7 which means the reliability of the questionnaire is within the acceptance level.

9. **ANALYSIS OF DATA**

The appropriate statistical tools were applied for the analysis of primary data. The primary data were analyzed with the help of Statistical Package for Social Sciences (SPSS 21). The statistical tools applied in this research as follows.

- Frequency descriptive analysis
- Pearson chi-square test

• Cramer’s V

• Contingency table/ Cross tabulation

• Kolmogorov- Smirnov test

• Sharpio- Wilk test

• One-way ANOVA

• Levene’s test

• Correlation analysis

• Logistic regression analysis

• Factor analysis

10. CHAPTERISATION

The study is presented in the following five chapters.

• Introduction

• Chapter - 1:

  The Indian banking system – An overview

• Chapter - 2:

  Electronic banking in Indian banking sector

• Chapter - 3:

  Customer satisfaction towards internet banking services: Analysis and discussion
The questionnaire was the major tool used by the researcher for the collection of primary data from the respondents. So, there is probability to get answers being influenced by respondents’ moods and cognitive limitations.

The present study is empirical in nature. So all the limitations of social science research like, personal bias in responses of the respondents are inherent.

The present study is confined to internet banking services only. The delivery channels such as ATMs, Phone banking, Mobile banking were not included in the present study.

Considering the objectives and scope of the study, these limitations, however, do not seriously affect the quality of the research findings. The researcher has made an attempt to bring a practical contribution through this research.