COMPARATIVE STUDY OF CUSTOMER'S PREFERENCE TOWARDS E-BANKING SERVICES

BY

S.GAYATHRI (17PEC003)

THESIS SUBMITTED TO THE DEPARTMENT OF ECONOMICS AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN, COIMBATORE - 641 043

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE MASTER DEGREE IN ECONOMICS

APRIL 2019

COMPARATIVE STUDY OF CUSTOMER'S PREFERENCE TOWARDS E-BANKING SERVICES

BY

S.GAYATHRI (17PEC003)

THESIS SUBMITTED TO THE DEPARTMENT OF ECONOMICS AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN, COIMBATORE - 641 043

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE MASTER DEGREE IN ECONOMICS

APRIL 2019

Signature of the	**Signature of the**
Head of Department	**Guide**

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

The researcher places her deepest sense of gratitude and indebtedness at the feet of **God Almighty.**

The researcher is grateful to **Dr. P. R. KRISHNAKUMAR**, Chancellor, Avinashilingam Institute for Home Science and Higher Education for women, Coimbatore, for providing the opportunity to conduct the research in this esteemed University.

The researcher express her gratitude to **Dr. PREMAVATHY VIJAYAN**, Vice Chancellor, Avinashilingam Institute for Home Science and Higher Education for women, Coimbatore, for providing facilities to carry out the study.

The researcher wish to thank **Dr. S. KOWSALYA**, Registrar, Avinashilingam Institute for Home Science and Higher Education for women, Coimbatore, for her administrative support given for the study.

The researcher is immensely pleased to express her sense of gratitude to **Dr. K. T. GEETHA**, Dean, School of Arts and Social Sciences, Avinashilingam Institute for Home Science and Higher Education for women, Coimbatore, for her guidance and help in the conduct of the study.

The researcher records her sincere gratitude and thanks to **Dr. M. MANONMANI**, Professor and Head of Department of Economics, Avinashilingam Institute for Home Science and Higher Education for women, Coimbatore, for her valuable support rendered throughout the study.

The researcher owe her reverential thanks to her guide **Dr. MALARVIZHI. V**, Assistant Professor, Department of Economics, Avinashilingam Institute for Home Science and Higher Education for women, Coimbatore, for supervising the research work. Her constant benevolent help, valuable advice, immense patience and warm encouragement evinced throughout the study period are highly commendable.

LIST OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER- I

INTRODUCTION

CHAPTER-II

REVIEW OF LITERATURE

CHAPTER-III

METHODOLOGY

CHAPTER-IV

RESULTS AND DISCUSSION

CHAPTER-V

SUMMARY AND CONCLUSION

ANNEXURE-1

QUESTIONNAIRE

BIBLIOGRAPHY

LIST OF TABLES

LIST OF FIGURES

CHAPTER-I

INTRODUCTION

"We need banking but we don't need banks anymore.

Do you think someday we can open bank account or ask for loan without physically have to come to the bank?"

- ***Bill Gates, Founder of Microsoft***

In today's era, one cannot think about the success of any service industry including banking industry without information technology. It has increased the contribution of banking industry in the economy. Financial transactions and payments can now be processed quickly and easily in friction of seconds. Every second development in Information Technology (IT) and its acceptability by the commercial banks in India has enabled them to use IT extensively to offer their products and services to customers apart from just back office processes. Banks with latest information technology techniques are more successful in the cut throat competitive market in these days. Further, they can generate more and more business opportunities resulting in greater profitability. Information technology revolution in banking sector has not only provided improved service to the customers, but also reduced the operational cost (Talwar,1999).

Latest Developments in Information Technology have also brought along a whole set of challenges to deal with. Speedy changes in technology, complexities, high costs, security and data privacy issues, new rules and regulations and lack of trained manpower are some challenges faced by commercial banks in India. According to Nehmzow (1997), traditional banking methods (e.g. back office processes such as paper filling, paper work processing, sorting cheques and cash handling) from both banks and customers perspective, has become most costly. Regular requests from customers for bill payment (telephone, mobile, electricity, insurance and credit card bills), cash withdrawals, loan applications, cheque clearings, money transfer were huge tasks for traditional banks, thus

there was a clear need to adopt information technology equipment to automate back office work (Keyes, 1999).

The banking environment of today is rapidly changing and the rules of yesterday are no longer applicable. Most of the banks in India have adopted core-banking solutions (CBS) in a fully networked environment. Back office functions have been taken away from branches to a centralized place. While physical branches would continue to be relevant in the Indian scenario, the real growth driver for reducing the cost would be virtual branches i.e. Automated Teller Machines (ATMs), internet banking, mobile banking, kiosks, phone banking etc., which is made possible by few persons and run on 24 x 7 basis to exploit the real potential of these information technological utilities. New technologies cannot completely replace the branch network but it can support old methods of delivering the services to their customers.

Information Technology has brought drastic change in the day to day functioning of banking operations. It not only brings improvements in their internal functioning and daily routine work but also enable them to provide better customer service efficiently and effectively. By directing various banking transactions through electronic channel and by providing customers direct access to their account without visiting the branch, banks now offer quick service along with transparency and incentives to their customers for using e-banking services. Because of all this, work load of banks employees has reduced has consequently improved the quality of customer service in branches.

E-banking services started in New York in 1981 when four of the city's major banks (Citibank, Chase Manhattan, Chemical and Manufacturers Hanover) offered home banking services using the videotext system. Later on, the concept of videotext became popular in France. In UK, first home online banking services were set up by the Nottingham Building Society (NBS) in the year 1983. It was based on the UK's Prestel system and used a computer, such as the BBC Micro, or keyboard (Tandata) connected to the telephone system and television set. It provided customer an option to make bill payment for gas, electricity and

telephone companies and accounts with other banks. It was Stanford Federal Credit Union which offered online internet banking services to all of its customers.

With growing popularity and benefits of e-banking, lot of banks have realized the importance, competition and challenges brought forth with this new technology and are adapting to this new-age banking. It has seen a number of changes due to technology and innovation. Arrival of card, introduction of Electronic Clearing Service (ECS), introduction of Electronic Funds Transfer and concept of online banking and mobile banking are the various novelties which took place in banking sector. Now all the banks have started with the concept of multi-channels, like ATMs, credit cards, debit cards, telephone/mobile banking, internet banking, etc., E-banking has broken the barriers of branch banking.

E-BANKING IN INDIA

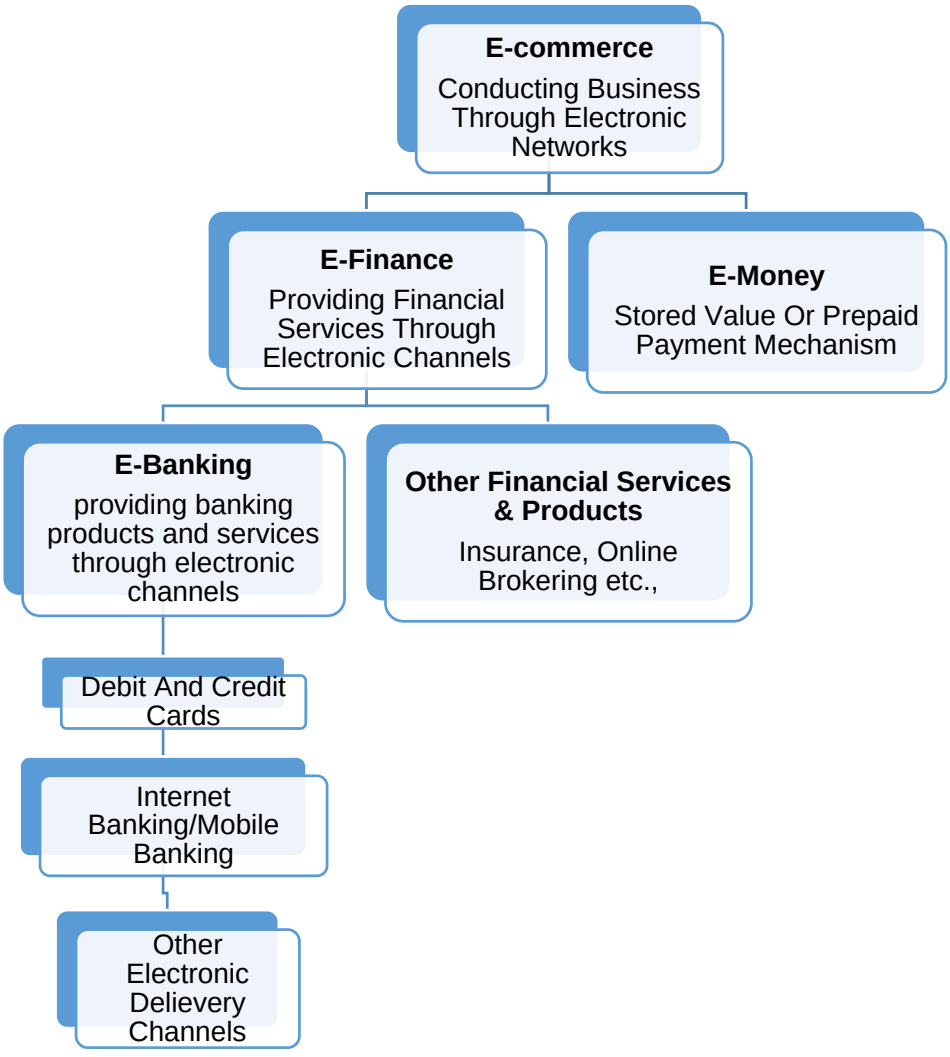
In India e-banking is of fairly recent origin. The traditional model for banking has been through branch banking. Only in the early 1990s there has been a shift towards non-branch banking services. The good old manual systems on which Indian Banking depended upon for centuries seem to have no place today. The credit of launching internet banking in India goes to ICICI Bank. Citibank and HDFC Bank followed with internet banking services in 1999. Several initiatives have been taken by the Government of India as well as the Reserve Bank to facilitate the development of e-banking in India. The Government of India enacted the IT Act, 2000 with effect from October 17, 2000 which provided legal recognition to electronic transactions and other means of electronic commerce.

The Reserve Bank is monitoring and reviewing the legal and other requirements of e-banking on a continuous basis to ensure that e-banking would develop on sound lines and e-banking related challenges would not pose a threat to financial stability. A high level Committee under chairmanship of Dr. K.C. Chakrabarty and members from IIT, IIM, IDRBT, Banks and the Reserve Bank of India prepared the IT Vision Document- 2011-17, for the Reserve Bank and banks which provides an indicative road map for enhanced usage of IT in the banking sector. To cope with the pressure of growing competition, Indian

commercial banks have adopted several initiatives and e-banking is one of them. The competition has been especially tough for the public sector banks, as the newly established private sector and foreign banks are leaders in the adoption of e-banking. The following figure-1 depicts the services offered by the banking sector in India.

Figure-1

E-banking Services



SERVICES OFFERED BY E-BANKING

Indian banks offer to their customers following e-banking products and services:

- Automated Teller Machines (ATMs)
- Internet Banking
- Mobile Banking
- Telebanking
- Electronic Clearing Services
- Electronic Clearing Cards - debit/credit cards
- Electronic Fund Transfer – NEFT/RTGS
- Others (including Google pay, PayTM etc.,)

Automatic Teller Machine (ATM)

Automatic Teller Machine is the most popular devise in India, which enables the customers to withdraw their money 24 hours a day 7 days a week. It is a device that allows customer who has an ATM card to perform routine banking transactions without interacting with a human teller. In addition to cash withdrawal, ATMs can be used for payment of utility bills, funds transfer between accounts, deposit of cheques and cash into accounts, balance enquiry etc.

E Cheques

Nowadays we are hearing about e-governance, e-mail, e-commerce, e-tail etc. In the same manner, a new technology is being developed in US for introduction of e-cheque, which will eventually replace the conventional paper cheque. India, as harbinger to the introduction of e-cheque, the Negotiable Instruments Act has already been amended to include; Truncated cheque and E-cheque instruments.

Real Time Gross Settlement (RTGS)

Real Time Gross Settlement system, introduced in India since March 2004, is a system through which electronics instructions can be given by banks

to transfer funds from their account to the account of another bank. The RTGS system is maintained and operated by the RBI and provides a means of efficient and faster funds transfer among banks facilitating their financial operations. As the name suggests, funds transfer between banks takes place on a 'Real Time' basis. Therefore, money can reach the beneficiary instantaneously and the beneficiary's bank has the responsibility to credit the beneficiary's account within two hours.

Electronic Funds Transfer (EFT)

Electronic Funds Transfer (EFT) is a system whereby anyone who wants to make payment to another person/company etc. can approach his bank and make cash payment or give instructions/authorization to transfer funds directly from his own account to the bank account of the receiver/beneficiary. Complete details such as the receiver's name, bank account number, account type (savings or current account), bank name, city, branch name etc. should be furnished to the bank at the time of requesting for such transfers so that the amount reaches the beneficiaries' account correctly and faster. RBI is the service provider of EFT.

Electronic Clearing Service (ECS)

Electronic Clearing Service is a retail payment system that can be used to make bulk payments/receipts of a similar nature especially where each individual payment is of a repetitive nature and of relatively smaller amount. This facility is meant for companies and government departments to make/receive large volumes of payments rather than for funds transfers by individuals.

Point of Sale Terminal

Point of Sale Terminal is a computer terminal that is linked online to the computerized customer information files in a bank and magnetically encoded plastic transaction card that identifies the customer to the computer. During a transaction, the customer's account is debited and the retailer's account is credited by the computer for the amount of purchase.

Tele Banking

Tele Banking facilitates the customer to do entire non-cash related banking on telephone. Under this devise Automatic Voice Recorder is used for simpler queries and transactions. For complicated queries and transactions, manned phone terminals are used.

Electronic Data Interchange (EDI)

Electronic Data Interchange is the electronic exchange of business documents like purchase order, invoices, shipping notices, receiving advices etc. in a standard, computer processed, universally accepted format between trading partners. EDI can also be used to transmit financial information and payments in electronic form.

Internet banking

Online banking, also known as internet banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's websites.

Mobile banking

Mobile banking is a service provided by a bank or other financial institution that allow its customers to conduct financial transactions remotely using a mobile device such as a smartphone or tablet. Mobile banking is usually available on a 24-hour basis. Some financial institutions have restrictions on which accounts may be accessed through mobile banking, as well as a limit on the amount that can be transacted. Mobile banking is dependent on the availability of an internet or data connection to the mobile device.

Others

Now a days banks provide us the application for money transactions such as Google pay, PayTM and so on. It typically includes obtaining account balances and lists of latest transactions, electronic bill payments, remote check deposits, P2P payments, and funds transfers between a customer's or another's accounts.

Some apps also enable copies of statements to be downloaded and sometimes printed at the customer's premises.

Features of E-banking

The features of E-Banking are as follows:

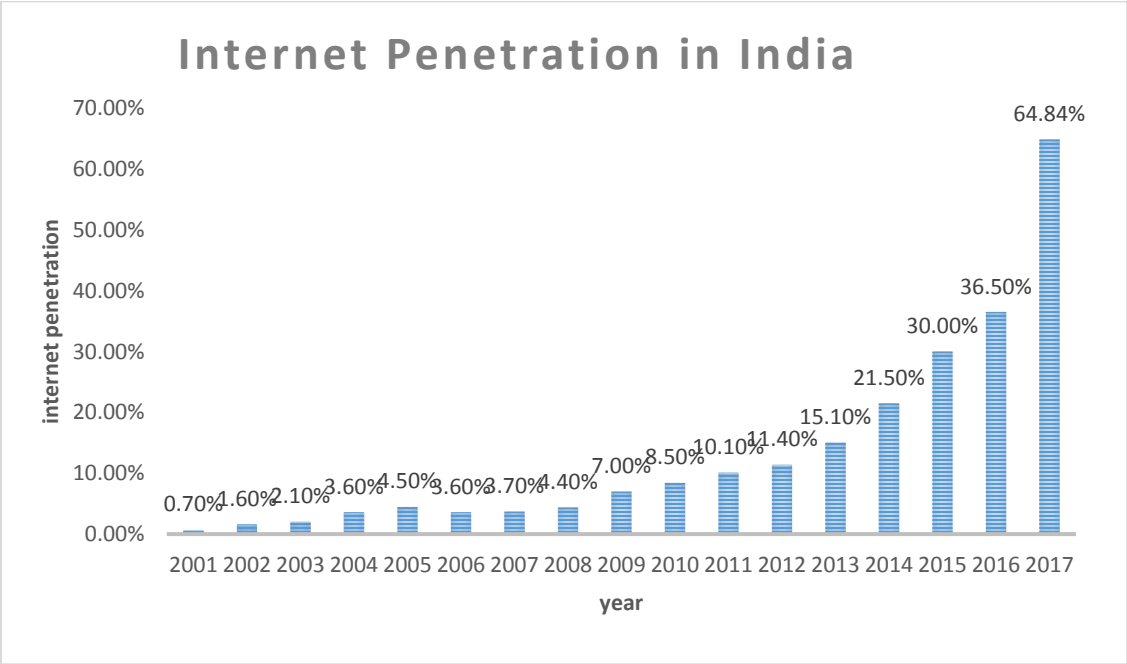
- E-banking can be accessed 24x 7
- There is no geographical barrier for using E-banking services
- Electronic Fund transfer becomes easier through E-banking
- E-banking ensures better efficiency in Customer relationship management.
- Making the Payments of bills like electricity, telephone bills, and mobile recharge.
- It can view of balance of accounts and statements.
- E-banking can bring doorstep services.
- It helps to order mini statements.

Trends in E-Banking

An important driver of electronic banking Internet is considered to be an important driver of electronic banking. With the advent of internet, the usage of electronic medium in every field, including banking has increased. Figure 2 given below depicts how internet penetration in India has increased over a period of time.

Figure-2

Internet Penetration in India



Source: Jesdeep Kaur (2017)

The above figure indicates that the internet usage is showing positive trend. The above figure shows that the internet penetration in India was 0.70% in 2001, it increased to 64.84% in 2017. It represents that the internet plays an important role in the growth of electronic banking. The table indicates the electronic transaction in India from 2013-18.

Table-1

Electronic Transaction in India

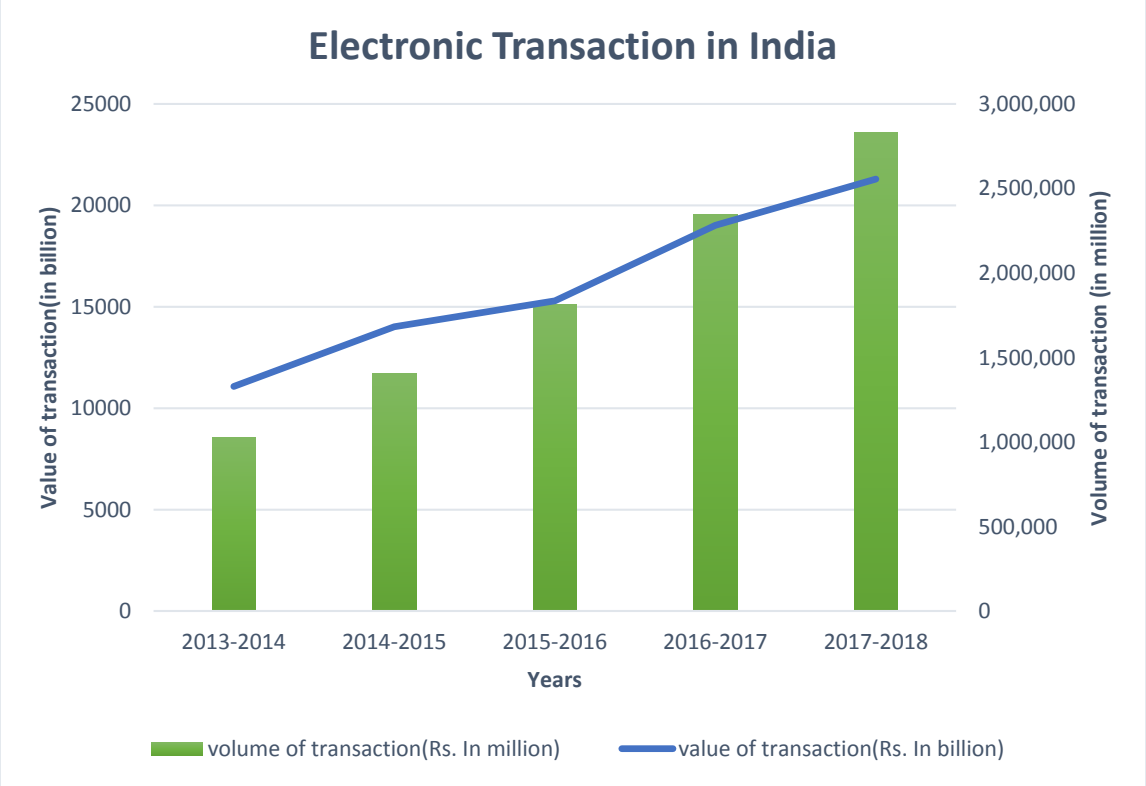
Year	Volume Of Transaction (In Millions)	Value Of Transaction (Rs. In Billion)
2013-2014	8543.6	13,29,020
2014-2015	11718.19	16,82,461
2015-2016	15126.04	18,35,103
2016-2017	19542.66	22,82,337
2017-2018	23584.2	25,55,510.68

Source: RBI, 2018

The above table shows the growth of electronic transaction in India since 2013. The value of transaction was Rs. 8543.6 million in 2013-2014, it increased to Rs. 23584.2 million in 2017-2018. It indicates that volume and value of transaction shows positive trend tremendously over the period of time. It depicts in the below figure-3.

Figure 3

Electronic Transaction in India



Source: RBI, 2018

PROSPECTS OF E BANKING

Despite of various problems that are prevailing in context with e-banking in India, the following opportunities are motivating the marketers for implementing e-banking:

Untapped Rural Markets

Contributing to 70% of the total population in India is a largely untapped market for banking sector. In all urban areas banking services entered but only few big villages have the banks entered, so that the banks must reach in remaining all villages because majority of Indian still living in rural areas.

Multiple Channels

Banks can offer so many channels to access their banking and other services such as ATM, Local branches, Telephone/mobile banking, video banking etc. to increase the banking business.

Worthy Customer Service

Worthy customer services are the best brand ambassador for any bank for growing its business. Every engagement with customer is an opportunity to develop a customer faith in the bank. While increasing competition customer services has become the backbone for judging the performance of banks.

Internet Banking

It is clear that online finance will pick up and there will be increasing convergence in terms of product offerings banking services, share trading, insurance, loans, based on the data warehousing and data mining technologies. Anytime anywhere banking will become common and will have to upscale, such up scaling could include banks launching separate internet banking services apart from traditional banking services.

Retail Lending

Recently banks have adopted customer segmentation which has helped in customizing their product folios well. Thus retail lending has become a focus area particularly in respect of financing of consumer durables, housing, automobiles etc., Retail lending has also helped in risks dispersal and in enhancing the earnings of banks with better recovery rates.

Indian Customers

The growing Indian banking sector with its strong home country linkages, seek a unique combination of Indian ethnicity and global standards that offers a valuable nice opportunities for Indian banks. The biggest opportunity for the Indian banking sector today is the Indian costumers. Demographic shifts in terms of income level and cultural shifts in terms of life style aspirations are changing the profile of the Indian customer. This is and will be a key driver of economic growth going forward.

Increasing Internet Users & Computer Literacy

To use internet banking it is very important or initial requirement that people should have knowledge about internet technology so that they can easily adopt the internet banking services. The fast increasing internet users in India can be a very big opportunity and banking industry should encash this opportunity to attract more internet users to adopt internet banking services.

Initiatives taken by Government agencies for financial literacy

Financial literacy and education play a crucial role in financial inclusion, and inclusive growth. A study reported that there is significant impact of financial literacy on use of internet banking, If customers are not financially educated they will simply avoid using new online services and not change their traditional way of banking, thus banks will not be able to convert users into their new online banking strategies. Various government institutions like RBI, SEBI, IRDA and various other market players have taken a number of initiatives on financial education. They have prepared a school curriculum along with various topics including internet banking, banking product and services, net banking to educate the school students, college students, working executives, middle income group, home makers, retired personnel, self-help groups etc.

Competitive Advantage

The benefit of adopting e-banking provides a competitive advantage to the banks over other players. The implementation of e-banking is beneficial for bank

in many ways as it reduces cost to banks , improves customer relation , increases the geographical reach of the bank, etc. The benefits of e- banking have become opportunities for the banks to manage their banking business in a better way.

Despite the benefit of e-banking technology in improving service quality, productivity and efficiency, some banks have struggled to adopt and integrate information technology related services in their current banking system. This might be due to bank staff's resistance to new technologies (Khalfan and Alshawaf, 2004) or due to lack of fund that is needed to install and upgrade the current banking system. Private and foreign banks have added multiple technological up-gradation in their various branches. Even though public sector banks followed the private banks in their technological initiative and services but still they are far behind from their competitors due to constraint of financial resources required to upgrade e-banking services.

Various developments have taken place in Indian Banking. Among the various developments, technology has influenced the way customer interacts with banks. Electronic channels and products such as ATMs, cards, internet banking and mobile banking are offered along with traditional branch channel. Differences in the usage of channels exist between developed countries and developing countries. Evidence suggests that there is a shift from traditional channel to electronic channels. For example, usage of digital banking in developed countries is more than 90 percent and diffusion of digital channels in developing countries range from 11 percent to 25 percent. The study by Capgeminiin his report "World Payments Report 2014" indicate that non-cash transactions have reached 334 billion transactions. There is greater propensity of customers to move towards digital channels. Banks which develop digital capabilities are going to benefit. Customers recognize greater convenience through digital channels. However, banks will need to cope up with issues of customer service and frauds which are associated with digital channels.

In India, Reserve Bank of India outlined the mission to ensure that payment and settlement systems are safe, efficient, interoperable, authorized, accessible, inclusive and compliant with international standards. The Vision is to proactively encourage electronic payment system for ushering in a less cash society in India. Regulation is keen to promote innovation and competition with an intention to help payment system achieve international standards. Various initiatives by Reserve Bank of India, in mid-eighties and early-nineties, resulted in offering technology based solutions. The need evolved to provide cost effective alternative system.

Electronic Clearing Service (ECS) was launched in 1990s to cater to bulk and repetitive payments. By September 2008, a new avatar in the form of National Electronic Clearing cell was launched to handle multiple credits to beneficiary accounts. National Electronic Clearing Service (NECS) rides on core banking solution of member banks. The retail funds transfer system was introduced in 1990s to allow electronic transfer of fund for people to people payment. In November 2005, a robust system was launched to allow one to one funds transfer requirement of individuals and corporates. Prepaid instruments allow transaction for goods and services against the value stored on payment instrument. It may be in the form of smart cards, magnetic stripe cards, internet wallets, mobile accounts, mobile wallets and paper vouchers. Consequent to the guidelines in mobile banking, selected banks were permitted to offer the service after receipt of necessary permission from Reserve Bank of India.

Indian Retail payments pose significant challenges and opportunities. Based on Payment system vision document released by Reserve Bank of India, the number of non-cash transactions, at 6 per person, is low in India. It is estimated that Government subsidies alone constitute more than Rs.2.93 trillion and electronification has a potential to translate 4.13 billion electronic transactions in a year. Based on the report of Internet and Mobile Association of India (IAMAI), internet commerce is expected to reach Rs.465 billion by the year 2012.

The Indian banking system consists of 27 public sector banks, 21 private sector banks, 49 foreign banks, 56 regional rural banks, 1,562 urban cooperative banks and 94,384 rural cooperative banks, in addition to cooperative credit institutions. As on December 2018, the total number of Bank Branches in Tamil Nadu is 10576 branches. According to RBI report on January 2019, ATM centres in India there were 1,05,819 onsite and offsite 97,639. Total number of Credit cards and debit card issued in India were 4,51,71,042 and 93,12,61,931 respectively.

NEED FOR THE STUDY

In the modern days, banking has become a necessity for the people. The need for the banking has developed rapidly and its wider use can be seen all around the world. E-banking service providers fulfil the consumers' expectations from their service. They are the biggest banking service providers in India and also in the study area of Tiruppur district. In Tiruppur most of the customers are using E-banking services in recent times due to digitalisation. In this regard **"Comparative study of customer's preference towards E-banking services**" has been chosen to identify the customer's attitude towards the services.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

- To study the socio-economic profile of the customers of e-banking services
- To analyse the customers opinion towards the e-banking services in Tirupur District.
- To know the satisfaction level and motivational factors to attract customers towards E-banking services.
- To identify the problems faced by the respondents while using e-banking services
- To provide suggestions to overcome the problems faced by the customers in Tiruppur District.

HYPOTHESIS OF THE STUDY

- There is a significant relationship between Annual income and number of usage of E-banking services.
- There is a significant relationship between regularity of changing passwords and the time gap between changing passwords.
- There is a significant relationship between problems faced by the customers related to bank account in last one year and how quickly the problems addressed by the bank
- There is significant difference between the satisfaction of E-banking customers towards the Public and Private sector banks.
- There is a significant difference between the satisfaction of E-banking services towards the Public and Private sector banks regarding easy to understand and operation, safety and security and user friendly websites.
- Intention to use has a positive effect on tangibility and overall satisfaction of the E-banking service.

CHAPTER-II

REVIEW OF LITREATURE

Earlier studies on banking sector are discussed under the following heads:

- Peoples attitude towards E-banking
- Customer satisfaction towards banking services
- Other related studies

PEOPLES ATTITUDE TOWARDS E-BANKING

Renuka & Karthik (2017) analyzed that banks act as the backbone of economic development. They inculcate the habit of saving. The share of banking and insurance within the service industry is very significant. The latest development in information and communication technology, internet has become indispensable tool for today business. Every business organization sings it in some way or another these days. It has emerged as the leading medium, and innovative distribution channel for businesses. In India, there are 6, 40,867 villages and about 83.3 crores of Indian population lives in these villages. For economic development Indian Government and RBI realized that rural development is the key for country's development. RBI guides the banks to start their branches in villages those which are not having their banks. After the central Government efforts of demonetarization the usage of payments via electronics is getting more. Therefore the study aims to analyzes the banking opportunities to rural customers

Jasmine & Pavithra (2018) examined that in the last two decades, the banking services have been growing through the information technology across the world. Interconnectivity of personal computers across the country and intercontinental relationship through the internet has opened a wealth of opportunities in every meadow of life. Online banking services is a web based service that enables bankers and bank customers' to access their account. The study has taken effort to study together the customer's attitude towards online banking services in Tirupur City. It is a contribution to examine the impact of an

online banking service on customer attitude and satisfaction in bank. The study also offers awareness about online banking services and customer's facing problems in the banking institution through this online banking service. The study selected 500 respondents purposively who were using online banking services in various banks for her convenience. The tools and techniques were utilized for the analyses like Descriptive Analysis, Chi-square Test, Regression Analysis and Step-wise Analysis.

Ahmad & Al-Zubi (2011) discussed the most recent channels of distribution to be used in the financial services organizations is electronic banking. The study aimed to explore the adoption of e-banking functionality and investigates the impact of e-banking on the outcomes of customer satisfaction namely, loyalty and positive word of mouth within the Jordanian Commercial Banks with the help of purposive sampling technique. The study revealed that adoption of e-banking (accessibility, convenience, security, privacy, content, design, speed, fees and charges) had a positive effect on Jordanian Commercial Bank customers' satisfaction, loyalty, and positive WOM.

Jaroslav et.al (2017) examines the selected attributes of commercial banks security in relation to customer satisfaction. The data was collected from primary and secondary sources. The study found more than 70% of respondents in Slovakia believed that their bank takes a proper care of their money and also found that electronic forms of banking are utilised by more than 90% of clients, most frequently by university educated ones. The trust in the payments via electronic banking is at average levels as there appear hacking attacks and bank frauds from time to time. The study confirmed that security issues currently influencing the customer satisfaction and loyalty that have become a crucial element of bank activities.

Botchwey (2014) analysed that to determine the adoption, challenges and some critical successes of electronic banking in the Ghana. A sample of 10 members of staff was purposively selected from the population and a cross section of 50 customers of ECOBANK was randomly selected. Secondary data

was also collected from research reports. The study found that the advantages of e-banking such as easy access to money, account information 24-hours and time saving for customer's to carry out other duties, eradication of long queues as associated with the traditional mode of banking. The study recommended that the education on marketing of e-banking products should be encouraged in the bank to attract more customers and also more ATMs should be placed at vantage locations within the city to reduce distance and time in accessing the facility.

Roozbahani aet.al (2015) studied the increasing development of information and communication technologies has brought many achievements for human society and greatly influenced people`s lives and their behaviours and social events. The study aimed to investigate the role of e-payment tools and e-banking in customer satisfaction. Data was collected through questionnaire. The study indicated that there is a positive and significant relationship between e-payment tools and e-banking. Therefore, the results can help to identify effective factors of customer satisfaction and in turn providing competitive advantage for this and similar organizations.

Fozia (2013) analysed that the fast advancing global information infrastructure including information technology and computer networks such as the Internet and telecommunications systems enable the development of electronic commerce at a global level. The study expected to determine the customer's perception towards the e-banking services. The study revealed that the different age group of customers have different perception towards the e-banking services and the usage level. It has also seen that different occupation group of customers have different perception toward the e-banking services. There are good numbers of customers in every age group like student, service class, business class and professionals are shown keen interest in using the e-banking services. Hence, the study recommended that the banks should concentrate on all the age group of customers for betterment of using e-banking services.

Havasi et.al (2013) discussed that the electronic banking is the wave of the future. It provides enormous benefits to consumers in terms of the ease and

cost of transactions. But it also poses new challenges for country authorities in regulating and supervising the financial system and in designing and implementing macroeconomic policy. The main objectives of the study was to understand the E-Banking and its evolution, to recommend the government role on establishing E-Banking, to highlight the challenges of E-Banking and to suggest the policy implications to make E-Banking more effective. The result of the study revealed that the major challenges of Electronic banking is the security variability, lack of knowledge of end users, failure of bank transitions, user interface etc. The study recommended that the factors should be enhanced to improve Electronic banking.

Geetha & Malarvizhi (2017) examined that the rapid advancement in electronic distribution channels has produced tremendous changes in the financial industry in recent years, especially in banking industry. The study investigated the factors which are affecting the acceptance of e-banking services among the customers and also indicates level of concern regarding security and privacy issues in Indian context. Data was collected through a structured questionnaire. Descriptive statistics was used to explain demographic profile of respondents and Factor and Regression analyses were used to know the factors affecting e-banking services among customer in India. The findings of the study depicted that many factors like security, privacy and awareness level will increase the acceptance of e-banking services among Indian customers. The result of the study showed that if banks provide them necessary guidance and ensure safety of their accounts, customers are willing to adopt e-banking service.

Bauer and et.al (2005) discussed about portal services, which are explicitly demanded by the customer, consist of, e.g. the possibility of obtaining loans online and a selection of branded financial products such as brand funds or insurances. The study is based on primary data, collected from 280 respondents in Germany. The study identified that the convenience, interactivity, customer care services, decision support and information provision are the major factors determining the quality of E-banking portals. The Cronbach's alpha was used to test the reliability of the factors. The study suggested that banking management

can establish early warning systems by continuously measuring quality in e-banking and can foster appropriate improvements as soon as one of the dimensions falls below a tolerable level.

Kapoor (2015) studied the electronic banking offers different online services like balance enquiry, requests for cheque books, recording stop payment instructions, balance transfer instructions, payment services, account opening, form downloads etc., The study aim to examine the relationship between demographic variables of customers with customer satisfaction towards electronic banking offered by banks and to compare the satisfaction level of customers for Public, Private and Foreign banks with electronic banking. The findings of the study showed that all the dimensions had a mean score of more than 3, which signifies that, on an average the respondents have agreement with the statements presented before them. Highest score was found for the Reliability index (3.704), followed by Responsiveness index (3.696) and lowest mean score was found for Tangibility index (3.571) followed by Empathy index (3.648). The study revealed that the customers were satisfied with the internet banking services being rendered by their respective banks.

Kaur (2017) explored that banking system always has an important role to play in every country's economy. The study attempted to give an overview of ebanking, how it has evolved over a period of time in India. The study also throws a light on growth of different e-banking products in last five years which are significantly being used in Indian banking industry. The study found that the younger generation has already adapted to the changes in banking sector and perceive this changing banking system more as a convenience mode than a challenge.

Bhai (2018) assessed that banking sector plays an important role in the development of a country. The main objectives of the study were to found out the challenges faced in E-banking services and to study the opportunities existing in E-banking services in India. The study is purely based on secondary data. The study revealed that many financial innovations like ATMs, credit cards,

RTGS, debit cards, mobile banking etc. have completely changed the face of Indian banking. The result of the study shows that the challenges of the e-banking can be solved and opportunities can be availed efficiently by the banks in India.

Nidhi (2016) explored that E-banking is a generic term making use of electronic channels through telephone, mobile phones, internet etc. for delivery of banking services and products. The study aimed to analyse the current status of financial innovations in Indian banking sector and to identify various e-banking services/products adopted by India. The study revealed that there is a paradigm shift from the seller's market to buyer's market in the industry and finally it affected the bankers to change their approach from "conventional banking to convenience banking" and "mass banking to class banking". The shift has also increased the degree of accessibility of a common man to bank for his variety of needs and requirements. The study also found that the e-banking will not only be the acceptable mode of banking but will be preferred mode of banking.

Kumbhar (2011) studied that today, almost all banks are adopted ICT as a mean of enhance service quality of banking services. The state of satisfaction will vary from person to person, product to product and service to service. The study evaluated the major factors (i.e. service quality, brand perception and perceived value affecting on customers' satisfaction in e-banking service settings. The data was collected through customers' survey and analyzed using principle component (PCA) using SPSS. A result of principle component analysis indicated that, Perceived Value, Brand Perception, Cost Effectiveness, Easy to Use, Convenience, Problem Handling, Security/Assurance and Responsiveness are important factors in customers satisfaction in e-banking and it explains 48.30 per cent of variance. Contact Facilities, System Availability, Fulfilment, Efficiency and Compensation are comparatively less important because these dimensions explain 21.70 per cent of variance in customers' satisfaction**.**

Rahman et.al (2017) discussed that information technology is the major factor for future development of financial services industry**.** The study examines the present status, problems and prospects of E-banking in Bangladesh. Data

collected from primary and secondary sources and were summarized and analyzed by using SPSS version 22, MINITAB 17 and Microsoft Excel. The study revealed that the customers who were habituated with e-banking services relatively good than manual system, but they were not satisfied with the quality of services and bank personnel behaviour to that extent. The study showed that e-banking serves several advantages to Bangladeshi banking sector, however, the study also observed that the customers of DBBL have not enough knowledge regarding e-banking which is rendering by banking sector in Bangladesh.

Miranda et.al (2006) examined an objective investigation of the issue has been conducted by manually accessing and evaluating the web sites of Spanish private and saving banks. The quality of web home pages of E-banking was determined using an original Web Assessment Index, which focuses on four categories: accessibility, speed, navigability and content. The study proposed and tested a model, the Web Assessment Index (WAI), for evaluating the potential of e-banking web sites, allowing researchers and managers to compare attributes and components of Internet sites, in order to determine the drawbacks and opportunities.

Smadi (2012) studied that electronic banking enhances the development of the banking system, and it is considered as a strategic weapon for banks. The 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 behaviour model (TPB) and incorporates five cultural dimensions and perceived risk to propose a theoretical model. The primary data were collected through questionnaires which were distributed to random banking customers in all 26 licensed banks in Jordan. Multiple regression analysis was employed to test the hypotheses. The study found that the uncertainty avoidance has a positive and significant impact on perceived ease of use and perceived usefulness. Perceived risk has the stronger impact on customers' attitude, which in turn influences customers' intention to use electronic banking services.

Adam (2013) assessed that E-banking is one of the most successful online businesses, which save the individuals and companies time and money. The study investigate the problems and opportunities of the electronic banking in Sudan, whereas, the provision and use of financial services and products that conform to interest-free banking principles which pose many challenges. The data was collected from the Central Bank of Sudan, Shamik Company for eight years. The study found out many deficiencies, poor infrastructure, and lack of skilled and well-trained human resource force in banking sector and security, which remain the key factors that constrain the applicability of e-banking.

Bafna & Nahar (2017) analysed that E-banking offers services like by they can view their account balances, view recent transaction, downloading bank statements (in pdf format), viewing images of paid cheques, ordering cheque books, download periodic account statements, downloading application for E-banking, m-banking etc. The study scrutinizes the challenges and opportunities of E-banking for the Indian banking sector. The study found out the various challenges of E-banking such as system architecture and design, operational risk, security risk, less Internet penetration and also focused on various opportunities provided by E-banking.

Lal & Saluja (2012) studied that Indian banking industry has witnessed a tremendous developments due to sweeping changes that are taking place in the information technology. The study analyzes the progress made by Indian banking industry in adoption of technology. Secondary data was used in the study. The progress in e-banking in Indian banking industry is measured through various parameters such as computerization of branches, Automated Teller Machines, Transactions through Retail Electronic Payment Methods etc. Statistical and mathematical tools such as simple growth rate, percentages and averages etc., are used. The study revealed that the challenges faced by Indian banks in adoption of technology and recommendations are made to tackle these challenges. The study concluded that in years to come e-banking will not only be acceptable mode of banking but preferred mode of banking.

Shukla & Shukla (2011) examined that E-banking constitutes an electronic alternative network of payments and benefit of services. The study provide all the alternative providing banking service networks, but also to focus on the advantages and on the risks that the growth of electronic banking has brought about. The findings of the study revealed the problems of E-banking and concluded with some recommendations to overcome the problems of E-banking.

Krishna & Venugopal (2016) discussed that the spread of E-banking has also greatly benefited the ordinary customer in general and corporate world in particular. The study learn about various aspects of HDFC E-banking & how E- banking will helpful to increase customer base and to know about customer satisfaction levels by using E-banking services. The study concluded that all the e-banking services such as ATM, internet banking, phone banking through phone, play an important role in building satisfaction amongst the customers and increasing their preferences towards the emerging e-channel banking services. The study indicated that the latest technologies bring a large customer base for the banks and banks ensure complete security for the transaction made by customer.

CUSTOMER SATISFACTION TOWARDS BANKING SERVICES

Alagarsamy & Wilson (2013) examined that the banking sector has under gone many changes in the new economic policy based on privatization, globalization and liberalizations adopted by government of India. The study identify the working conditions of the customers in public sector banks at Sivagangai city, to verify the customer satisfaction towards the services given by banks, to analyze the recent banking technology and its repercussions on the quality of customer services and to analyze the problems involved in banking transactions, to suggest suitable remedial measure to improve their banking services. The primary data collected by interview method through the well-structured questionnaire. The study clearly indicated the problem of ATM services, service charge and improper behaviour of employees are more difficulties to the customer but the delay in banking function is the major difficulty faced by the customer.

Mohsan et.al (2011) discussed customer loyalty and retention is potentially one of the most powerful weapons that financial institutions of 21st Century can employ in their fight to gain a strategic advantage and survive in today's ever-increasing competitive environment. The study attempted to find the impact of customer satisfaction on customer loyalty and intentions to switch. The primary data were collected from 120 customers. The study revealed that customers are satisfied with their respective financial service providers and customer satisfaction was positively correlated with customer loyalty and negatively correlated with customer intentions to switch.

Gill & Arora (2013) with the entry of new generation tech-savvy private banks and the expansion of operations of foreign banks, the banking sector has become too competitive to ignore "customer satisfaction". The study explained the factors influencing customer satisfaction in both private and public banks in India confining the research to people of Punjab. The results of the study will be helpful to banking sector, in order to devise a better strategy to satisfy their existing customers and also to develop new schemes and promotions by understanding the demands and requirements of probable customers in the market. The study also revealed that public sector banks though bit behind in technology compare to private banks have more customer faith in their style of banking. Private Banks on the other hand satisfies customers by giving better technology and more options of investments.

Reddy & Ramana (2013) examined customer satisfaction plays a vital role in gearing up the banking sectors and their performance. The multivariate statistical techniques were used in the study. The results of the study gave a detailed picture about the performance with respect to each factor, which means that along with customer satisfaction and service quality, attitude of the bank employee in serving the customers, care and concern, physical facilities available in the bank and promptness in attending the customer needs are the most important key factors to be considered. The result of the study showed that the nationalized banks have received almost equal satisfactory response when compared with the private and public sector banks.

Singh & Gupta (2016) explored in today's fast moving life and highly competitive environment, the banking sector has to understand and analyze the customer's perception and requirements for service quality. The main objective of the study was to know the customer satisfaction levels of private and public sector banks. The three northern region states viz. Punjab, Haryana and Himachal Pradesh was selected for the primary survey. Well-structured questionnaire was used to collect data. Customer perception and satisfaction was studied through various parameters viz. effectiveness, accessibility, cost, tangibles, reliability and empathy. The result of the study revealed that the public sector banks were more cost effective whereas, private sector did better in terms of tangibles. Private sector banks were comparatively more reliable due to proficiency in service delivery.

Lohani & Shukla (2011) explained that banking is a key industry in the service sector and it will not be an exaggeration to call it the financial nerve centre of the economy. The objective of the study was to compare the customer perception towards services provided by public sector bank and private sector bank. The primary data was collected from 200 respondents. The findings of the study revealed that as compared to public sector, private sector bank customers' level of satisfaction is comparatively more in India. The study also revealed that the customer perception towards services provided by Bank of Baroda (BOB) and ICICI bank of Lucknow region has been discussed. The attributes like Internet banking, ATM service, timing, attitude of staff, etc. of both the banks have been compared. The study found that ICICI bank is providing better services to its customers than Bank of Baroda.

Sabir et.al (2014) discussed banking in Pakistan consists of a central bank named as State Bank of Pakistan (SBP), which is central bank of country and a combination of local and foreign banks. The objectives of the study were to understand the factors affecting Customer Satisfaction in Banking Sector of Pakistan and to find the relationship between Service Quality, Customer Satisfaction and Customer Loyalty. Data was collected through structured questionnaire of 72 respondents. The findings of the study showed that there is

significant relationship between service quality attributes and customer satisfaction. The study also revealed that positive relationship exists between customer satisfaction and customer loyalty. The study concluded that service quality leads to satisfied customers and customer satisfaction leads to customer loyalty.

Karim & Chowdhury (2014) Customer satisfaction is one of the important tools to run a business and to achieve the mission statement. The study endeavours to discover the impact of service quality on customer satisfaction in private sector banks in Bangladesh. Five dimensions in service quality such as tangibility, reliability, responsiveness, empathy, and assurance are considered in the study. A structured questionnaire has been used to collect the data by conducting survey. The study showed that tangibility, reliability, responsiveness, assurance and empathy significantly and positively influenced customer attitudes in terms of satisfaction that is service quality dimensions are crucial for customer satisfaction in private commercial banking sector in Bangladesh.

Ravi and Basavaraj (2013) discussed after liberalization, privatization and globalization (LPG) policy enactment, Indian banking industry has undergone tremendous qualitative changes. The objectives of the study were to determine the perceptions of customers regarding the service quality in banks and to analyze and compare the service quality perceptions of the customers in public and private sector banks. The primary data of 150 respondents were selected for the study. The result of the study indicated that the customer preference and satisfaction towards the public sector bank is higher than the private sector bank.

Mistry (2013) examined customer satisfaction has been considered the essence of success in today's highly competitive banking industry. The study aimed to know the various important service quality dimensions in banking industry and to know the satisfaction level of customers of bank in each service dimension. The study is based on Primary data consists of 120 respondents. The study depicted that the customer gives third preference to assurance factor, it include criteria like safety of transaction, consistency in service etc., The study identified the factors affecting customer satisfaction in Banks and analyzed their

effects on the level of customer satisfaction. Service qualities of private and public banks were measured by using SERQUAL method. The study provided evidence that the SERQUAL dimensions are useful tool to predict over all service performance of banks. The study also found that a customer gives highest impotence to reliability dimension.

Singh & Arora (2011) examined banks play a role of considerable economic significance as intermediaries in mobilizing public savings and channelizing the flow of funds for productive purposes, keeping on the process of the economic growth of the country. The study to assess various aspects of services provided by the public sector, private sector and foreign banks, to assess the extent of use of services especially the IT enabled services in these banks and to determine and compare the extent of customer's satisfaction with quality of banking services on the basis of different constituent factors. The primary data was collected from 60 respondents. The study proposed to be conducted in five zones (East, West, North, South, and Central) of Delhi. One branch of the above banks in any zone of Delhi was selected randomly. The study found that the customers of nationalized banks were not satisfied with the employee behaviour and infrastructure, while respondents of private and foreign banks were not satisfied with high charges, accessibility and communication.

OTHER RELATED STUDIES

Parmar et.al (2013) discussed about the role of the rural banks in Indian financial sector is important but not apparently pre-eminent. The rural banking system is clearly more inclusive of low income families than those provided by the commercial banks. The study is to identify factors affecting to rural consumer while selecting internet banking; to study the awareness related the internet banking facilities provided by the banks and to identify relation between demographic factor like Gender, occupation, education, income and choice of internet banking among rural consumers. The study revealed that comparing the traditional banking with internet banking it seems that most respondent are satisfying with internet banking, that internet banking provide the different types

of facility available to the respondent to use. The study suggest that the expectations of consumers towards Internet banking should be time saving and convenient to use, should be user friendly and best in security.

Maditinos et.al (2013) studied the recent advances in the technology of electronic banking have helped develop new ways of handling banking affairs, especially through online banking. Moreover, the rapid development of the internet has stimulated the banking sector towards encouraging customers to make their transactions online. Data were analysed using the “structural equation modelling” technique. The purpose of the study is to introduce an extended Technology Acceptance Model (TAM) as a tool for examining the factors that have a significant impact on customers’ online banking acceptance. The study provided overall support for the extended TAM model and confirm its robustness in predicting customers’ intention of adoption of internet banking and also the study underlined the important impact of perceived usefulness, security risk and performance risk on the intention to use internet banking. On the contrary, the impact of perceived ease of use and quality of the internet connection seemed to have only an indirect effect on internet banking adoption.

Narayana et.al (2013) explained the banking industry around the world has been undergoing a rapid transformation. The study is to investigate the factors that influence the level of satisfaction of online customers of selected retail banks in Bangalore city and to assessment of relative significance of these factors on overall satisfaction of these online banking customers in Bangalore city. The primary data collected from 120 respondents. The study resulted revealed the banking needs, followed by core services, problem resolution, cost saved, convenience and risk and privacy concerns were the major factors that strongly affect the overall satisfaction of online consumers.

CHAPTER - III

METHODOLOGY

The methodology adopted in the current study is discussed under the following heads:

- Locale of the study
- Selection of sample
- Data base of the study
- Period of study
- Techniques of analysis
- Limitations of the study

LOCALE OF THE STUDY

Tiruppur is a city located in the Indian state of Tamil Nadu. Tiruppur is the administrative headquarters of Tiruppur district and the fifth largesturban agglomeration in Tamil Nadu. Tiruppur is located at 11.1075°N, 77.3398°E on the banks of the Noyyal River. It has an average elevation of 295 metres (967 feet) and covers an area of 159.6 km^2 (61.6 sq mi). Tiruppur is administered by municipal corporation which was established in 2008 and the total area of the corporation is 159.6 km^2 divided into 60 wards. The total population of the city as per the 2011 census is 444,352 with a sex-ratio of 955 females for every 1,000 males, much above the national average of 929. The average literacy of the city was 78.17%, compared to the national average of 72.99%.The city had a total of 124,617 households. There were a total of 207,358 workers, comprising 490 cultivators, 721 main agricultural labourers, 3,492 in house hold industries, 191,882 other workers, 10,773 marginal workers, 89 marginal cultivators, 74 marginal agricultural labourers, 470 marginal workers in household industries and 10,140 other marginal workers. The area of Tiruppur was expanded in 2011 and the population was 877,778 as per the revised estimate.

The average annual rainfall is around 700 mm (28 in) with the North East and the South West monsoons contributing to 47% and 28% respectively to the total rainfall. The soil is predominantly black, which is suitable for cotton cultivation, but it also has some red loamy soil. Of the total area of 518 thousand hectare in the district, over 44 per cent is cultivable area. Agriculture is mainly dominated by cultivation of millets, paddy, pulses and oil seeds. Agriculture is predominantly food and commercial crops and the area covered under major crops is provided in the table below. Horticulture crops such as onion, mango is also grown in the district (especially in Dharapuram and Kangeyam taluk region. Agriculture production has shown an increasing and positive trend in the district since 2006-07.Thiruppur is also known as the knitwear capital of India, accounting for 90% of India's cotton knitwear export. It has spurred up the textile industry in India for the past three decades. It contributes to a huge amount of foreign exchange in India. In the Fiscal year 2013, exports were Rs.17,500. The city provides employment to around 400,000 workers, with the average salary per worker being around Rs.9,000 per month. Special Industrial Parks have been developed to support the textile industry.

Tiruppur has a good educational infrastructure. There are more than 1400 schools in the district. For higher education, there are about 17 arts & science colleges in the district and for technical education, there are 15 institutes (eight polytechnics and seven engineering colleges) in the district. The famous educational institutes in the district include Sainik School in Amaravathi Nagar and NIFT TEA College of knitwear fashion in Tiruppur. The city itself has only a few engineering colleges, but the proximal areas and nearby cities of Coimbatore and Erode augurs well. There are 7 Government hospitals at the taluk level with a total number of 896 beds and a total of 43 Primary Health Centre’s in the rural areas. Tiruppur, like any other industrial town, faces its share of environmental pollution complaints.As per the directive of Madras High Court,zero liquid discharge (ZLD) should be strictly followed in Tiruppur knitwear cluster during the effluent treatment process. Tiruppur became the first textile cluster in India to

achieve Zero Liquid Discharge in their units.Both the Common Effluent Treatment Plant and Individual Effluent Treatment Plant are in place to treat effluents.

Tiruppur is well connected by moffusil bus services to all major towns and cities across Tamil Nadu, Kerala, Karnataka and Andhra Pradesh. The city has two major bus stands Old bus stand and New Bus stand. The nearest airport is Coimbatore International Airport (45 km) which has regular flights from/to various domestic destinations like Ahmedabad, Bangalore, Bhubaneswar, Chennai, Delhi, Hyderabad, Kolkata, Kozhikode, Mumbai, Pune and international destinations like Sharjah and Singapore. Tiruppur railway station falls on the fully electrified and double tracked Erode - Coimbatore broad gauge line and is well connected by trains.

As on report of Indian Overseas Bank 2007-2019, there were 419 bank branches in and around Tiruppur District which includes public sector banks, private sector banks and foreign banks. The district has adequate banking infrastructure facility to promote economic growth in the region. Most of the nationalized and private banks have their banking operations in the district. They also offer facilities such as forex, letter of credit / guarantee facilities to support the export trade in the district. The advancements in technology have brought the mobile and internet banking services to the fore. The banking sector is laying greater emphasis on providing improved services to their clients and also upgrading their technology infrastructure, in order to enhance the customer's overall experience as well as give banks a competitive edge. In this context, a micro level study assumes immense significance to assess the consumer's reactions of e-banking services in Tiruppur district.

SELECTION OF SAMPLE

Multi stage sampling design was adopted in the study for selecting the sample. The population of the study initially consisted of all banks in Tiruppur city. The banks were divided into two categories namely public sector banks and private sector banks. From these selected banks 96 samples were selected by adopting incidental purposive sampling technique. The term incidental sampling

is applied to those samples that are taken because they are most readily available. The basic assumption behind purposive sampling is that with good judgement and an appropriate strategy one can handpick the cases to be included in the sample and thus develop samples that are satisfactory in relation to one's needs (Guilford, 1978). A common strategy of purposive sampling is to pick up cases that are judged to be typical of the population, in which one is interested, assuming that errors of judgement in selection will tend to counter balance each other if sufficiently large sample is taken.

E-banking services was gaining significance among bank customers in Tiruppur, there was not enough evidence of customers acceptance and their stance towards the use of the services. For one to accept that e-banking has fully gained prominence in Tiruppur, customer's acceptance, attitude and confidence in the system need to be validated, for which the views of customers need to be analyzed to identify factors that impact their intention to adopt e-banking services. Questionnaire was administered to customers within the branches of the banks. Every other customer entering the branches was asked to complete the questionnaire after identifying whether they were customers of e-banking services.

DATA BASE OF THE STUDY

Data pertaining to the study were collected by personal interview method. The interview schedule consisted of questions relating to the socio-economic background of the customers in various bank groups, the factors that motivated the customers to adopt the e-banking services, the benefits of e-banking, the problems faced while using e-banking services and level of satisfaction attained though operating e-banking services. The schedule was first pre-tested with few selected sample units and based on their responses the questions were reformulated and the final interview schedule used in the study is given in Annexure I.

PERIOD OF THE STUDY

Data for the study were collected from the sample units by administering a pre-tested interview schedule during the period December 2018 to January 2019.

TECHNIQUES OF ANALYSIS

Besides averages, percentages and graphs, the following techniques were applied.

Chi-square test

The χ^2 test is one of the simplest and most widely used non-parametric test in statistics. The quantity χ^2 describes the magnitude of the discrepancy between theory and observation and is symbolized as:

$$\chi^2 = \frac{\Sigma (O-E)^2}{E}$$

Where O refers to observed frequency and E refers to expected frequency.

In the present study, Chi-square test was applied to find the association between the problems faced in last one year and how quickly problems were solved and find the relationship between regularity of changing passwords and time gap between changing passwords

Garrett's Rating Scale

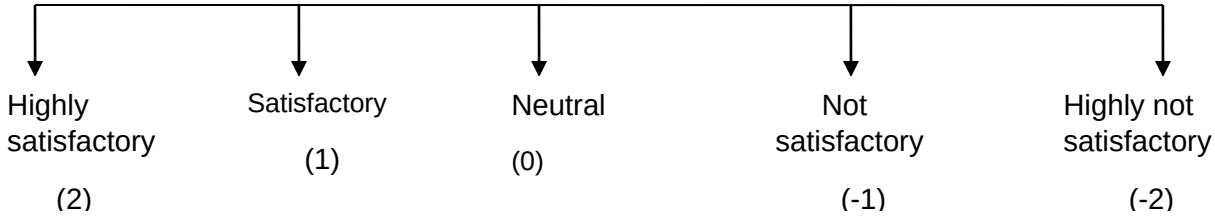
To find out the strength of factors ranked by the selected sample groups in relation to e-banking services, Garrett's rating scale technique was used. From the ranks given for each factor, percent positions were calculated by using the formula.

$$\text{Percent position} = 100 * (R-0.5)/N$$

Where R is the rank assigned and N is the number of items ranked. The percent position was then converted into scores using Garrett's scores table (Garrett H, 2005). Garret ranking scale technique was used in ranking the customer's opinion about e-banking services.

Likert's Summated Scale

The Likert summated scaling technique was used to scale the problems faced by the customers while using e-banking services. In the Likert scale, the respondent was asked to respond to each of the statements in terms of several degrees, usually five degrees of agreement or disagreement.



Each point on the scale carries a score. Response indicating the least favourable degree of satisfaction is given the least score (say 1) and the most favourable is given the highest score (say 5). These score values are normally not printed on the instrument but are shown here just to indicate the scoring pattern. The Likert scaling technique, thus, assigns a scale value to each of the five responses. The same procedure is repeated for each and every statement in the instrument. This way the instrument yields a total score for each respondent, which would then measure the respondent's favourableness toward the given point of view.

Factor Analysis

Factor analysis is a generic name given to a class of multivariate technique whose primary purpose is to define the underlying structure in a data matrix. Broadly speaking, it addresses the problem of analyzing the structure of the interrelationships (correlations) among a large number of variables by defining a set of common underlying dimensions, known as factors. With factor analysis, the researcher can first identify the separate dimensions of the structure and then determine the extent to which each variable is explained by each dimension. Once these dimensions and the explanation of each variable are determined, the two primary uses for factor analysis, namely summarization and

data reduction can be achieved. In summarizing the data, factor analysis derives underlying dimensions that, when interpreted and understood, describe the data in a much smaller number of concepts than the original individual variables. Factor analysis was used in the present study to identify the problems faced by customers while using e-banking services.

Pearson's Correlation Analysis

Correlation is a measure of the linear correlation between two variables *X* and *Y*. it has a value between +1 and −1, where 1 is total positive linear correlation, 0 is no linear correlation, and −1 is total negative linear correlation.

Karl Pearson's correlation coefficient

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2}\sqrt{\Sigma y^2}}$$

Where $\Sigma x = \Sigma(X - \bar{X})$ **and** $\Sigma y = \Sigma(Y - \bar{Y})$

To analyse the relationship between annual income and monthly usage of e banking, Pearson correlation analysis is employed.

Two Sample t-Tests

Two normally distributed but independent populations, σ is unknown. The following formula was used to estimate the two sample t test.

$$t = \frac{\bar{x}_1 - \bar{x}_2 - \Delta}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

where $\bar{x}_1$ and $\bar{x}_2$ are the means of the two samples, Δ is the hypothesized difference between the population means (0 if testing for equal means), s_1 and s_2 are the standard deviations of the two samples, and n_1 and n_2 are the sizes of the two samples. The number of degrees of freedom for the problem is the smaller of $n_1 - 1$ and $n_2 - 1$. Two sample test is conducted to compare the satisfaction level between public sector banks and private sector banks customers in Tiruppur district.

Path analysis

Path analysis is a straightforward extension of multiple regressions. In addition to being thought of as a form of multiple regression focusing on causality, path analysis can be viewed as a special case of structural equation modelling (SEM) – one in which only single indicators are employed for each of the variables in the causal model (i.e.,) path analysis is SEM with a structural model, but no measurement model. Other terms used to refer the path analysis include causal modelling, analysis of co-variance structures, and latent variable models. Its aim is to provide estimates of the magnitude and significance of hypothesized causal connections between sets of variables, which is best explained by a path diagram. To construct a path diagram the names of the variables are written, arrow is drawn from one variable to other variable which it affects. One can distinguish between input and output path diagrams. An input path diagram is one that is drawn beforehand to help plan the analysis and represents the causal connections that are predicted by the hypothesis. An output path diagram represents the results of a statistical analysis, and shows what was actually found. The objective of path analysis is to understand the pattern of correlations among the variables and explain the variations with the model specified. The path of the model is shown by a square and an arrow, which shows the causation. Regression weight is predicted by the model. The goodness of fit statistic is calculated in order to see the fitting of the model (Hair et al, 2006).

In the study, assurance and service quality was hypothesized to positively affect customer's level of satisfaction towards using e-banking services. The interaction between these variables was analyzed by using smart partial least square method.

LIMITATIONS OF THE STUDY

- The present study is based on primary data. It is a known fact that primary data has its own limitations.
- The present study relies only on the information gathered through surveys, observations and personal interviews, which are subject to bias.
- The survey is not representative of the whole Tiruppur District. The sample was collected only from the city.

CHAPTER-IV

RESULTS AND DISCUSSION

The findings of the current study are presented and discussed under the following heads:

- Socio-economic Profile of the respondents
- Banking Profile of the Respondents
- Sources of Awareness about E-Banking Services
- Purpose of using E-banking services
- Service Quality of E-Banking Services
- Motivational Factors to Induce E-Banking Services
- Satisfaction towards the Usage of E-Banking Services
- Suggestions to Improve E-banking Services
- Overall Service Quality of E-Banking

❖ SOCIO-ECONOMIC PROFILE OF THE RESPONDENTS

The social background and the economic position of person is taken as variables to study the social behaviour, attitude, prejudices of a person, as it governs the nature, forms perception of the social world and construction of social reality. According to Hirsch et al (2002) there are number of variables like occupation, education, income, wealth, and place of residence on which Socio-economic status depends. Banking has become a process of choice and convenience; better the service, higher the customer's inclination to a bank and vice-versa and e-banking is vital for both the banking industry and the customers. Hence an attempt was made in this section to explore the socio-economic profile of the customers of e-banking facilities were surveyed from 96 respondents in public and private sector banks as shown in table 1.

Table- 1

Socio-Economic Profile of the Respondents

S.no	Socio-economic status	Characteristics	Frequency	Percentage (%)
1.	Gender	Male	41	42.7
		Female	55	57.3
2.	Age (Years)	0-25	25	26.0
		26-50	59	61.5
		51-75	12	12.5
3.	Marital status	Married	68	70.8
		Unmarried	25	26.0
		Widow	3	3.2
4.	Educational Level	Primary Education	7	7.3
		Secondary Education	20	20.8
		Higher Secondary Education	14	14.6
		Graduation/Professionals	55	57.3
5.	Occupational Level	Government sector	6	6.2
		Private sector	27	28.1
		Own business	31	32.3
		Agriculturist	17	17.7
		Others	15	15.6
6.	Annual Income (Rs.)	Less than 1 lakh	20	20.8
		1-2 lakh	28	29.2
		2-3 lakh	23	24.0
		3 lakh and above	25	26
Total			**96**	**100**

Source: Field Survey, 2019

Gender: refers to the difference in the adoption and usage of new technology such as e-banking between male and female. In the present study, adoption of e-banking services indicated that female represent the segment with the highest use of e-banking (57 percent) compared to male (43 percent).

Sheshadri et al (2014) found that gender does not have an effect on the customer adoption of electronic banking. Both gender have a diverse knowledge on services presented by their banks. Therefore, they conclude that gender does not play a role in link with the technology adoption as both males and females are qualified in today's situation.

Age: is an indicator of a person physical and psychological maturity from biological perspective and social activities. It affects person's social, political, economic and institutional roles, responsibilities and status in the society. The present study represents, majority of the respondents (62 percent) belonging to the age category of 26 years to 50 years; followed by below 25 years (26 percent) and remaining 13 percent of the respondents belonging to 51 years to 75 years. Thus the maximum preference for the e-banking was seen among population aged 26-50 years (62 percent) which supports the earlier findings, that younger generation prefer e-banking compared to older age group Abenet (2010). Margaret et al (2013) shows that the young generation is more familiar with computer and internet, so they are more interested in using the e-banking system particularly ATM and online transaction rather than old and traditional banking services.

Marital status: Marriage and marital relations are related to a person's status and different roles and obligations are related to it in addition to social accountability and commitment. In the study, majority of them were married (71 percent). The next category comprised of unmarried persons (26 percent) and remaining 3 percent of them were widowed.

Educational level: is the strongest positive factor that influences the adoption level of e-banking where by the younger generations is highly educated. In the present study majority (57) of the samples were graduated; followed by 21 percent of them were finished secondary education; 15 percent were higher secondary education and 7 percent were got primary education. The study found that all the samples were educated and they prefer to use e-banking services. The findings of the above study supported by Tater et al (2011) on their study

identified that customers with post-graduate and graduate qualifications are mostly adaptors of IT banking services such as e -banking. This implies that higher qualification is associated with bringing attention towards new technology banking services and qualification is a factor found to be relevant.

Occupational level: A person's occupation also influences his or her consumption pattern. Annin et al (2013) on their study found a positive and significant relationship between occupation and e-banking adoption. In the present study occupation of the respondents included government services, own business, professionals, agriculturalists and other occupation (Beautician, cosmetic sellers, basket makers). Among the respondents, majority (32 percent) were doing own business; followed by private sector jobs (28 percent); nearly 18 percent were agriculturalist; nearly 16 percent of them were belongs other occupation and remaining of them were in government jobs.

Annual Income: With regard to the impact of income on consumers' e-banking adoption or usage practice, Ismail et al (2012) on their study investigated that e-banking usage is associated with clients' income, account type and computer and internet literacy. In the present study majority of the respondents were receiving annual income in the range from Rs.1 lakh to Rs. 2 lakhs; followed by 26 percent of them receiving annual income Rs. 3 lakhs and above; 24 percent of them receiving the income range from Rs. 2 to 3 Lakhs and remaining 21 percent of them receiving annual income less than one lakh. The study revealed that customers of e-banking users were generally belonging to higher income group.

- **BANKING PROFILE OF THE RESPONDENT**

With the advancement of science and technology the modern market has gone a customer oriented market. Banking institutions are one of the most important service industries which provide various products in the services marketing with the changing dimensions of service sector; bank customers also expect convenient and modern banking products and services. To convey with this customer' desire the banks to change towards the modern banking.

Information and Communication Technology (ICT) have changed means of business and methods of operations in various businesses. Hence an attempt was made in this section to examine bank accounts maintained by the respondents, holding different bank account, years of holding account in a bank and type of account and the extent to which these factors influence the consumer's decision to use e-banking. Table-2 shows the banking profile of the selected respondents.

Table-2

Banking Profile of the Respondents

Banking profile	Classification	Frequency	Percentage (%)
Bank account	Public sector banks	41	42.7
	Private sector banks	55	57.3
Different bank account	One	39	40.6
	Two	27	28.2
	Three	12	12.5
	Four	13	13.5
	More than 4	5	5.2
Years of holding account in a bank	Below 2 years	9	9.4
	2-4 years	15	15.6
	4-6 years	35	36.5
	6-8 years	14	14.6
	8-10 years	3	3.1
Type of account	Saving bank account	75	78.1
	Recurring deposit account	1	1
	Saving bank account + current account	16	16.7
	Saving bank account + fixed deposit	2	2.1
	Saving bank account + fixed deposit + current account	2	2.1
Total		**96**	**100**

Source: Field Survey, 2019

Bank Account

Among the customers in the present study, majority of the respondents (57.3 percent) have account in private sector banks and then in (42.7 percent) public sector banks. The age-old debate of a private sector bank versus a public sector bank continues even today. While the younger generation generally prefers private banks, the older generation tends to stick to public sector banks. Customer care, keen to adopt new technology and innovative products may be the major inducing factor which made the customers to keep account in a Private sector banks than in a public sector banks.

Different Bank Account

The above table shows, majority (40.6%) of the respondents having only one bank account in a bank, 28.1% of the respondents are having two types of different bank account, 12.5% each of the respondents are having three types of bank account, 13.5% of the respondents are having four types of bank account only 5.2% of the respondents are having more than 4 types bank account. Totally 59 percent of the respondents holding more than two types bank accounts. Hence, the study revealed that majority of them holding account in different banks for their transaction day to day life activities. This reflects in sanjeev Sinha (2017) article financial express, many people love to have multiple bank accounts owing to some reason. This may be a good idea in some cases, like if you are a businessman and your transactions are huge. However, for a salaried person or a normal human being, having multiple bank accounts hardly makes sense – particularly in the wake of growing bank transaction and maintenance charges as well as keeping in view the ineffective use of cash and hosts of other issues.

Years of Holding Account in a Bank

Majority (36.5%) of the respondents holding account on 4-6 years of experience with their respective bank; followed by nearly 29 percent of the respondents having more than 10 years of experience with the respective bank; 2-4 years of bank transaction experiences as assigned by nearly 16 percent; nearly 15 percent of them having 6-8 years of experience with their respective

bank; 9 percent of them having below 2 years of experience with the respective account holding bank and 3 percent of the respondents are having 8-10 years of banking experience of holding account with their particular bank. Therefore the study revealed that majority of the respondents holding their account with a few years back only.

Type of Account

Different types of bank accounts serve different needs. Depending on your goals, it's wise to put money into the best account and use the right tools for spending and saving. Doing so allows you to maximize the return from your bank, minimize fees, and manage your money conveniently. From the table, majority (78.1%) of the respondents having only saving account; nearly 17% of them having saving account and current account; 2 percent of the respondents operating the saving bank account & fixed deposit account; saving bank account & fixed deposit account & current account respectively and 1 percent of the respondents having the recurring deposit account. The study found that, out of 96 respondents, none of them used the fixed deposit account, NRI account, Demat account and current account alone.

Figure – 1

Bank Account

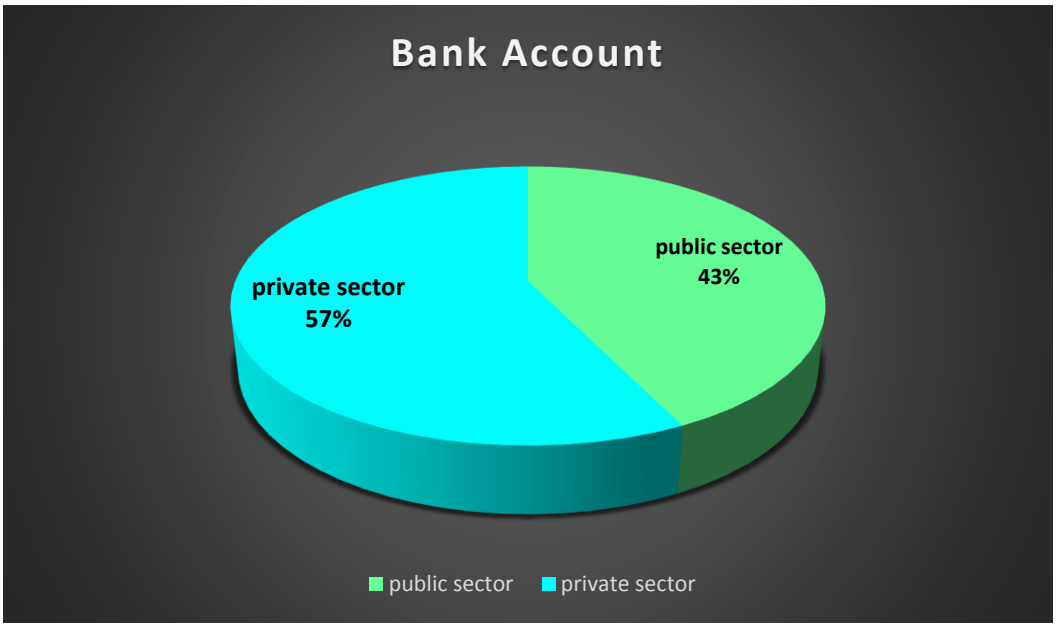


Figure – 2

Different Bank Account

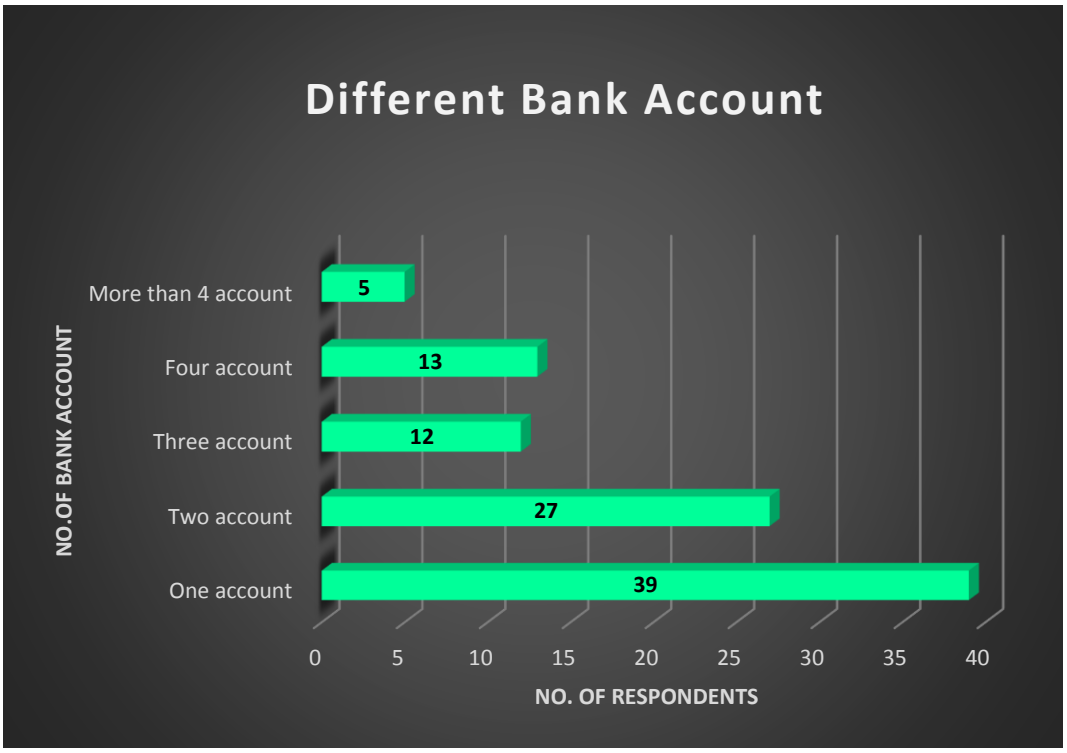


Figure - 3

Years of Holding Account in a Bank

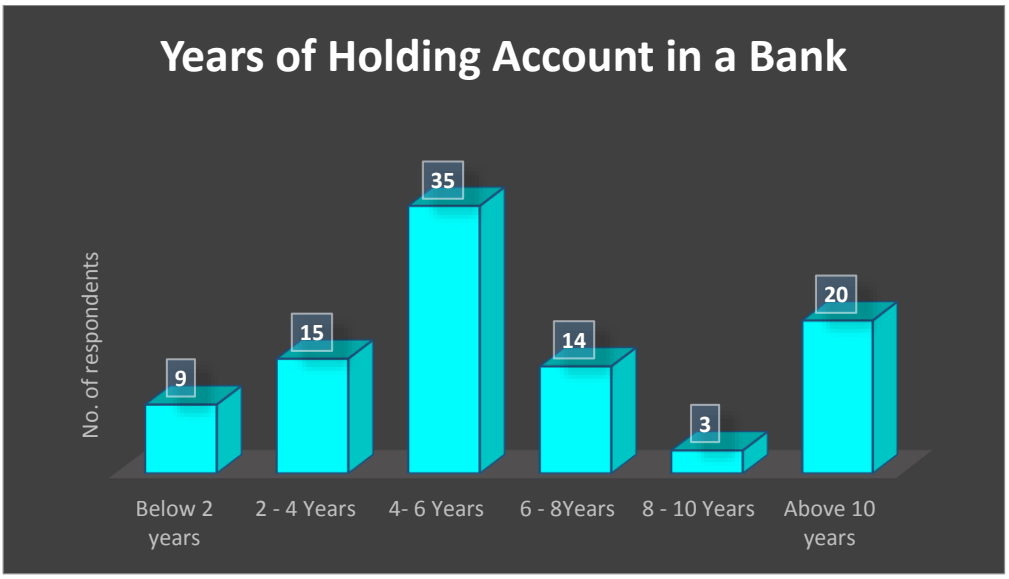
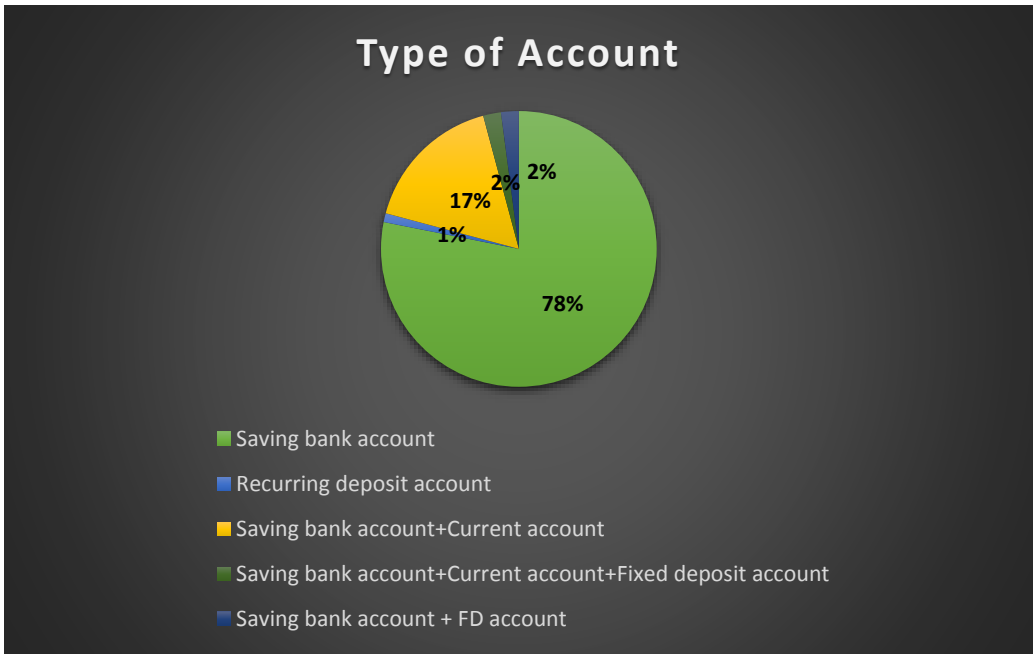


Figure-4

Type of Account



❖ SOURCES OF AWARENESS ABOUT E-BANKING SERVICES

E-banking has become a necessary weapon and is fundamentally changing the banking industry world-wide. In India, banks have tried to introduce internet-based e-banking systems to improve their operations and reduce costs. Despite all their efforts for developing better and easier e-banking systems, these systems remained largely unnoticed by the customers and certainly underused in spite of their availability. No doubt the main drawback in the Indian banking scenario is the lack of awareness about e-banking and lack of will to accept and adopt the changes among the people. This section is made an attempt to measure and analyse the level of awareness of e-banking services among the customers in public and private sector banks.

Table – 3

Sources of Awareness About E-banking Services

Sources of awareness	Public sector banks	Private sector banks	Total
Friends	14 (34.14)	16(29.09)	30(31.25)
Relatives	13 (31.7)	17(30.90)	30(31.25)
Neighbours	3 (7.31)	6(10.90)	9(9.38)
Media	8 (19.51)	11(20)	19(19.79)
Advertisement	3 (7.31)	5(9.09)	8(8.33)
Total	**41 (100)**	**55(100)**	**96(100)**

Source: Field Survey, 2019

The present study reveals that, irrespective of the bank respondents those who have got awareness about e-banking services from friends and relatives (31.25 percent) each respectively; followed by nearly 20 percent were got

awareness through media; 9 percent of them got awareness from neighbours and remaining 8 percent of them got awareness through advertisement. The study found that majority of the respondents were got awareness through friends in public sector banks and relatives in private sector banks and media also played an important role to create awareness among the usage of e-banking services from both the banks.

❖ FREQUENCY MODE OF TRANSACTION OF THE RESPONDENTS

In the light of the growing use and adoption of the Internet, it is evident that the use of the Internet for financial and banking services has been increased (Ibbotson and Moran, 2003). In the present study, which e-channels are frequently used by customers for their transaction purpose are summarised with the help of below table 4.

Table - 4

Frequency Mode of Transaction of the Respondents

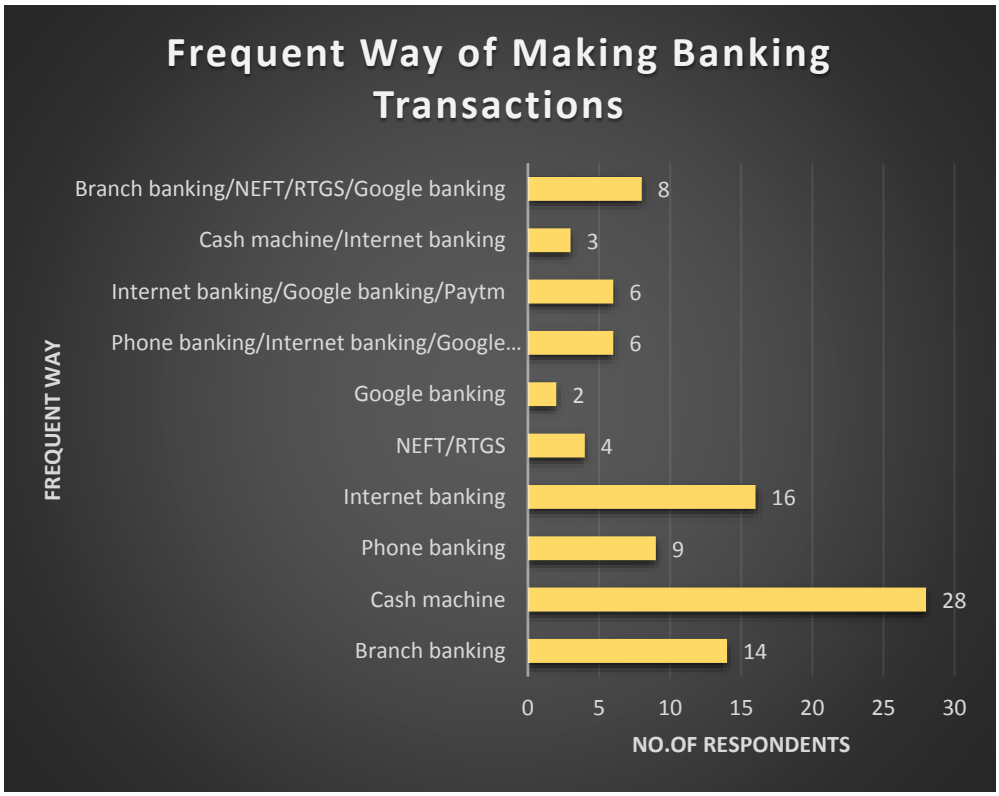
S.No	Frequency Mode of Transactions	Frequency	Percentage (%)
1.	Branch banking	14	14.58
2.	Cash machine	28	29.17
3.	Phone banking	9	9.38
4.	Internet banking	16	16.67
5.	NEFT/RTGS	4	4.17
6.	Google banking	2	2.08
7.	Phone banking/Internet banking/Google banking/Paytm	6	6.25
8.	Internet banking/Google banking/Paytm	6	6.25
9.	Cash machine/Internet banking	3	3.125
10.	Branch banking/NEFT/RTGS/Google banking	8	8.33
TOTAL		**96**	**100**

Source: Field Survey, 2019

From the table, majority (29 percent) of the respondents were frequently using cash machine (debit and credit cards); followed by 17 percent of them using internet banking; 15 percent of them were preferring branch banking; 9 percent of them using phone banking; 8 percent of the respondents were favouring branch banking, NEFT/RTGS & Google banking; each 6 percent of them using phone banking, internet banking & PayTM and internet banking, Google banking & PayTM respectively, 4 percent of them were using only NEFT/RTGS, 3 percent of them using only phone banking, 2 percent of the respondents are using Google banking and only 1 percent of the respondents are using branch banking and internet banking. The study found that, the most frequent way of transaction used by the customers were cash machine (debit cards & credit cards).

Figure – 5

Frequency Mode of Transaction of the Respondents



Chi-Square Analysis

In order to investigate the relationship between regularity of changing passwords and time gap between changing passwords, Chi-square test was done. The null hypothesis framed was

H_0: There is a significant relationship between regularity of changing passwords and time gap between changing passwords.

H_a: There is no significant relationship between regularity of changing passwords and the time gap between changing passwords.

Table-5

Association Between Regularity of Changing the Passwords and Time Gap Between Changing Passwords

Chi-square value	Degrees of freedom	Asymptotic significance (2-tailed)	Inference
89.116	4	0.000	Reject H_0

Source: Field Survey, 2019

From the table, it is evident that the association between the between regularity of changing passwords and the time gap between changing passwords is statistically significant at 1% level. Hence reject H_0. There is a significant relationship between the regularity of changing passwords and the time gap between changing passwords.

❖ **PURPOSE OF USING E-BANKING**

Information Technology has brought drastic change in the day to day functioning of banking operations. It not only brings improvements in their internal functioning and daily routine work but also enable them to provide better customer service efficiently and effectively. By directing various banking transactions through electronic channel and by providing customers direct access to their account without visiting the branch, banks now offer quick service

along with transparency and incentives to their customers for using e-banking services. The below table-6 summarizes the purpose of using e-banking services among the respondents.

Table-6

Purpose of Using E-Banking

S.no	Purpose of using e-banking	Frequency	Percentage (%)
1.	Basic account information	8	8.33
2.	Balance enquiry	13	13.54
3.	Inter account money transfer	33	34.38
4.	Making bill payments	3	3.13
5.	Inter account money transfer/balance enquiry/making bill payments	7	7.29
6.	Inter account money transfer/ making bill payments	6	6.25
7.	Basic account information/ making bill payments	8	8.33
8.	Basic account information/ making bill payments/ Inter account money transfer	7	7.29
9.	Inter account money transfer/making bill payments/others(online purchase/ticket booking)	11	11.46
Total		**96**	**100%**

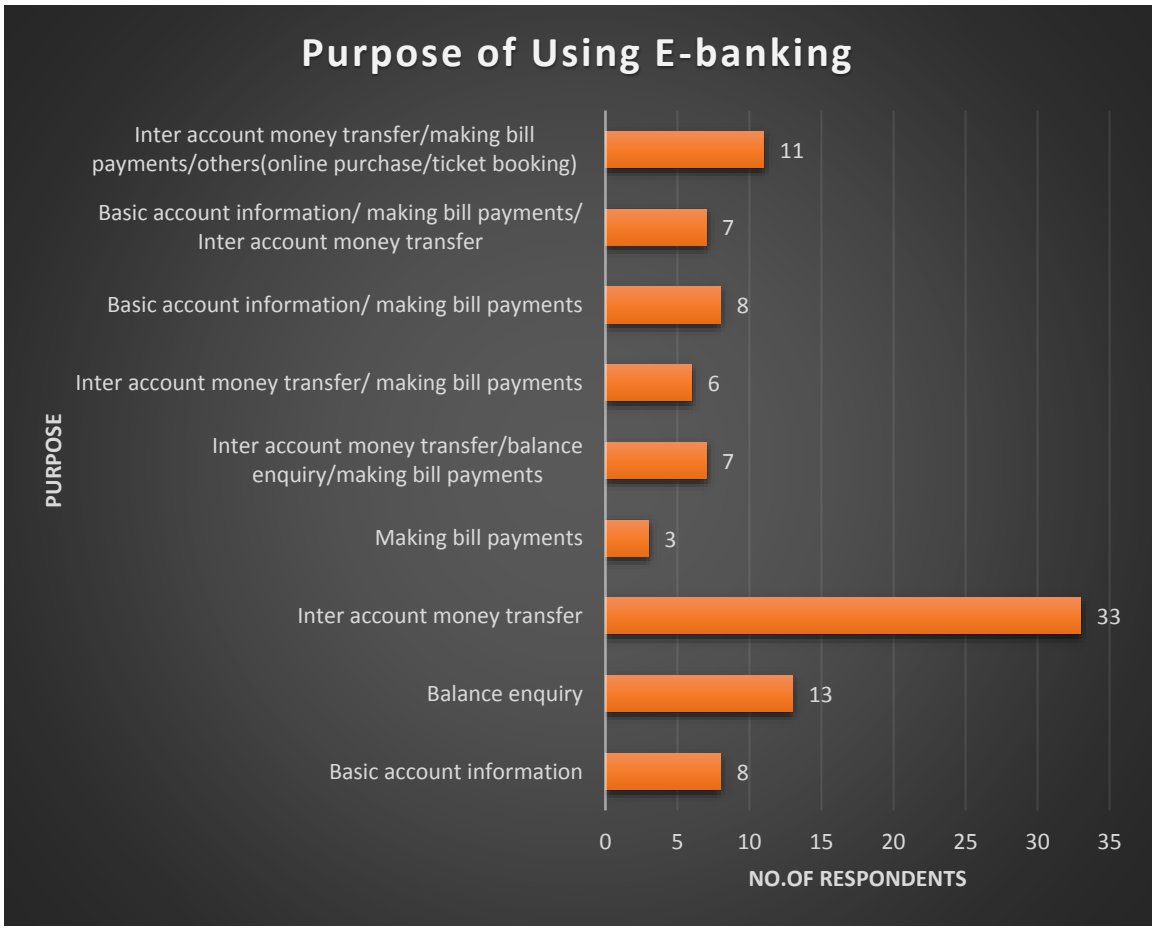
Source: Field Survey, 2019

From the above table, out of 96 respondents 33 percent of the respondents were using E-banking services for Inter account money transfer; followed by 16 percent of them were using for balance enquiry; 11 percent of them using for

making bill payments; 8 percent each of them were using for basic account information and basic account information & bill payments; 7 percent each of them were using E-banking for the purpose of inter account money transfer, making bill payments & cheque book and basic account information, making bill payments & inter account money transfer; 6 percent of the respondents are using for inter account money transfer and making bill payments and minimal of 3 percent of the respondents are using for other purposes such as ticket booking, online purchases etc. hence, the study revealed that majority of them used e-banking services for inter account money transfer.

Figure-6

Purpose of Using E-Banking



Pearson's Correlation Analysis

In order to investigate the relationship between Annual income of the E-banking users and usage of E-banking services, Pearson's correlation test was done.

H_0: There is a significant relationship between Annual income and number of usage of E-banking services.

Ha: There is no significant relationship between Annual income and number of usage of E-banking services.

Table – 7

Association Between Annual Income of Customers and Number of Usage of E-Banking Services Per Month

		Annual Income of the Respondents	How often use E-banking
Annual Income of the respondents	Pearson Correlation	1	.260*
	Sig. (2-tailed)		.010
	N	96	96
How often use E-banking	Pearson Correlation	.260*	1
	Sig. (2-tailed)	.010	
	N	96	96

Source: Field survey, 2019, *Correlation is significant at the 0.05 level (2-tailed).

From the table, it is evident that the association between the Annual income of the respondents and usage of E-banking per month is statistically significant at 5% level. Hence reject H_0. There is a positive degree of correlation between the variables. This means that when income increases, number of usage of e-banking per month also increases. The number of usage of E-banking per month is not independent of the annual income of the respondents.

❖ MOTIVATIONAL FACTORS TO INDUCE E-BANKING SERVICES

In the current scenario Indian customers are moving towards Internet banking, slowly but steadily. Most of the Indian banks have started providing Internet banking services. But success rate of electronic banking depends on the various aspects of banking services and motivating factors of consumers to choose internet banking. Adoption of internet banking showed there are several factors predetermining the consumer's attitude towards internet banking such as person's demography, motivation and behaviour towards different banking technology and individual acceptance of new technology. It has been found that consumer's attitudes towards internet banking are influenced by the prior experience and of computer and new technology (Laforet and Li, 2005). In the present study, to found out the motivational factors that induce to use e-banking services twelve statements were prepared and the respondents were asked to state their opinion on these statements. The opinions were classified on a five point scale with the designated attribute such as strongly agree/agree/neutral/disagree/strongly disagree. Specified numerical weights were assigned for each attribute as 5, 4, 3, 2 and 1 respectively and the mean score and standard deviation were computed for each statement as shown in table 8

The average scores and the ranks corresponding to motivational factors for both banks are shown in table 8.

Table - 8

Motivational Factors to Induce E-Banking Services-Average Score and Standard Deviation

Motivational factors	Public sector bank		Private sector bank	
	Mean	Standard deviation	Mean	Standard deviation
Convenience	4.585	.591	4.673	.517
Time saving	4.463	.596	4.473	.539
No need to stand in queue	4.317	.649	4.600	.564
Safety and security	4.551	1.182	3.964	1.201
Easy to maintain	4.463	.596	4.418	.629
Reliability	4.170	.892	4.291	.737
Transparency	4.073	.905	4.527	.634
No need to carry cash	4.463	.552	4.546	.662
Anywhere/Anytime(24x7)	4.414	.632	4.655	.474
Quick transaction	4.415	.806	4.491	.742
Innovative services	4.122	1.005	4.346	.699
Account can be managed more efficiently	3.268	1.517	4.400	.760

Source: Field Survey, 2019

The first and foremost motivational factor that induce to use e-banking services for public and private sector banks customers were ‘convenience’. For public sector banks next motivational factors were ‘safety and security’, followed by ‘Time saving’ and ‘Easy to maintain’. The least motivational factor were given to the factor ‘Account can be managed more efficiently’. For Private sector bank next highly motivated factors were ‘Anywhere/ Anytime (24x7)’, ‘No need to stand in queue’ and ‘No need to carry cash”. The least rank given to ‘Safety and security’. Thus, customers in both banks were motivated to use e-banking services were ‘Convenience’.

❖ SATISFACTION TOWARDS THE USAGE OF E-BANKING SERVICES - TWO SAMPLE T-TEST

The user satisfaction can be seen as the sum of the user's feeling and attitudes toward several factors that affect the usage situation (Bailey et al., 1983). A number of additional studies point out to a relationship between customer satisfaction and E-Banking services. Asiyanbi and Ishola (2018) demonstrated that the satisfaction degree of customers in the banking sector increases when using E-Banking services. Similarly, Ranaweera and Neely (2003) verified that the quality of E-service is the first step of customers' satisfaction.

An attempt was made in this section to determine the satisfaction level of customer's towards using e-banking services. Fourteen statements were prepared and the respondents were asked to state their opinion on these statements. The opinions were classified on a five point scale with the designated attribute such as strongly agree/agree/neutral/disagree/strongly disagree. Specified numerical weights were assigned for each attribute as 2, 1, 0, -1 and -2 respectively and the mean score and standard deviation were computed for each statement as shown in table 9.

Table- 9

Satisfaction Towards the Usage of E-banking Services

Variables	Bank account	Mean	Std. Deviation	t-Value	Df	Sig. (2-tailed)
Document formalities of opening E-banking	Public sector banks	2.16	1.116	4.040	145	.000
	Private sector banks	1.54	.721	3.830	101.955	.000
Account details are up-to-date	Public sector banks	1.88	.934	0.621	145	.535
	Private sector banks	1.80	.620	0.590	103.842	.556

Time taken for the operation	Public sector banks	1.86	.833	.788	145	.432
	Private sector banks	1.76	.709	.772	123.391	.442
Money is safe and secure	Public sector banks	1.92	1.028	-3.288	145	.001
	Private sector banks	2.58	1.317	-3.393	144.971	.001
Trustworthiness	Public sector banks	2.00	.959	-1.472	145	.143
	Private sector banks	2.23	.915	-1.463	132.337	.146
Easy transfer of money from one account to another account	Public sector banks	1.80	.596	.526	145	.599
	Private sector banks	1.73	.782	.545	144.984	.587
Easy to understand banking procedures	Public sector banks	1.92	.822	1.757	145	.081
	Private sector banks	1.72	.548	1.671	104.147	.098
Reliability	Public sector banks	1.80	.760	1.923	145	.056
	Private sector banks	1.59	.542	1.843	109.204	.068
Banks website provides information in understandable language	Public sector banks	1.92	.741	1.765	145	.080
	Private sector banks	1.73	.543	1.697	111.277	.092
Websites of the bank is user friendly	Public sector banks	1.94	.664	2.116	145	.036
	Private sector banks	1.69	.748	2.149	142.098	.033
User menus are clearly	Public sector banks	2.20	1.057	2.893	145	.004

categorised in the website	Private sector banks	1.78	.699	2.749	103.643	.007
Easy to understand the banking statements	Public sector banks	1.94	.941	2.507	145	.013
	Private sector banks	1.60	.680	2.406	110.206	.018
TDS enquiry	Public sector banks	2.05	.933	-1.130	145	.260
	Private sector banks	2.20	.761	-1.101	119.974	.273
Value added services of bank	Public sector banks	2.03	1.007	.613	145	.541
	Private sector banks	1.94	.802	.596	117.940	.553

Source: Field Survey, 2019

H_0: There is no significant difference between the satisfaction of E-banking services towards the Public and Private sector.

Variable 1:

On average, the respondents who are using E-banking services of public sector bank, opinioned that they have higher document formalities to open E-banking account (Mean=2.16) than in Private sector bank (Mean = 1.56), t (99) = 4.040, $p < .05$. Null Hypothesis is rejected and alternate hypothesis is accepted. It is concluded that there is a significant difference between the satisfaction of E-banking services towards the Public and Private sector regarding the document formalities to open the E-banking account.

Variable 2:

On average, the respondents who are using E-banking services of public sector bank, opinioned that they have better up to date account details (Mean=1.88) than in Private sector (Mean = 1.80), t (99) = 0.621 , $p > .05$. Null Hypothesis is accepted and alternate hypothesis is rejected. It is concluded that

there is no significant difference between the satisfaction of E-banking customers towards the Public and Private sector regarding the up-to-date account details.

Variable 3:

On average, the respondents who are using E-banking services of public sector banks, opinioned that the higher time taken for operation (Mean=1.86) than in Private sector (Mean = 1.76), t (99) =0.788, p > .05. Null Hypothesis is rejected and alternate hypothesis is accepted. It is concluded that there is significant difference between the satisfaction of E-banking customers towards the Public and Private sector regarding the time taken for operation.

Variable 4:

On average, the respondents who are using E-banking services of Private sector bank, opinioned that they have higher safety and security (Mean=2.58) than Public sector (Mean = 1.92), t (99) = -3.288, p < .05.Null Hypothesis is rejected and alternate hypothesis is accepted. It is concluded that there is a significant difference between the satisfaction of E-banking services towards the Public and Private sector regarding the safety and security of money.

Variable 5:

On average, the respondents who are using E-banking of Private sector bank, opinioned that they have lower trustworthiness (Mean=2.00) than in Public sector (Mean = 2.23), t (99) = -1.472, p > .05. Null Hypothesis is accepted and alternate hypothesis is rejected. It is concluded that there is no significant difference between the satisfaction of E-banking services towards the Public and Private sector banks regarding the trustworthiness.

Variable 6:

On average, the respondents who are using E-banking of Public sector bank, opinioned that they have easy transfer of money from one account to another account (Mean=1.80) than in Private sector (Mean = 1.73), t (99) = 0.526, p > .05. Null Hypothesis is accepted and alternate hypothesis is rejected. It is concluded that there is no significant difference between the satisfaction of

level customers towards the Public and Private sector banks regarding the easy transfer of money from one account to another account.

Variable 7:

On average, the respondents who are using E-banking services of Public sector bank, opinioned that they have (Mean=1.92) than in Private sector (Mean = 1.72), t (99) = 1.757, p > .05. Null Hypothesis is accepted and alternate hypothesis is rejected. It is concluded that there is no significant difference between the satisfaction of E-banking customers towards the Public and Private sector banks regarding the easy to understand banking procedure.

Variable 8:

On average, the respondents who are using E-banking of Public sector bank, opinioned that they have higher reliability (Mean=1.80) as in Private sector (Mean = 1.53), t (99) = 1.923, p > .05. Null Hypothesis is accepted and alternate hypothesis is rejected. It is concluded that there is no significant difference between the satisfaction of E-banking customers towards the Public and Private sector banks regarding the reliability.

Variable 9:

On average, the respondents who are using E-banking of Public sector bank, opinioned that they have provide information in understandable language (Mean=1.92) as in Private sector (Mean = 1.73), t (99) =1.765, p > .05. Null Hypothesis is accepted and alternate hypothesis is rejected. It is concluded that there is no significant difference between the satisfaction of E-banking customers towards the Public and Private sector banks regarding the banks website provides information in understandable language.

Variable 10:

On average, the respondents who are using E-banking of Public sector bank, opinioned that they have higher user friendly (Mean=1.94) than in Private sector (Mean = 1.69), t (99) = 2.116, p < .05.Null Hypothesis is rejected and alternate hypothesis is accepted. It is concluded that there is a significant

difference between the satisfaction of E-banking customers towards the Public and Private sector banks regarding user friendly.

Variable 11:

On average, the respondents who are using E-banking of Public sector bank, opinioned that they have higher (Mean=2.20) as in Private sector (Mean = 1.18), t (99) =2.893, p < .05.Null Hypothesis is rejected and alternate hypothesis is accepted. It is concluded that there is a significant difference between the satisfaction of E-banking customers towards the Public and Private sector banks regarding the user menus are clearly categorised in the website.

Variable 12:

On average, the respondents who are using E-banking of public sector, opinioned that they easy way of understanding statement (Mean=1.94) than in Private sector (Mean = 1.60), t (99) = 4.040, p > .05. Null Hypothesis is rejected and alternate hypothesis is accepted. It is concluded that there is a significant difference between the satisfaction level of E-banking customers towards the Public and Private sector banks regarding the easy to understand the banking statements.

Variable 13:

On average, the respondents who are using E-banking of private sector, opinioned that they higher TDS (Mean=2.20) than in Public sector (Mean = 2.05), p > .05. Null Hypothesis is accepted and alternate hypothesis is rejected. It is concluded that there is no significant difference between satisfaction of E-banking customers towards the Public and Private sector banks regarding the TDS enquiry.

Variable 14:

On average, the respondents who are using E-banking of public sector, opinioned that they higher Value added services (Mean=2.03) than in Private sector (Mean =1.94), p > .05. Null Hypothesis is accepted and alternate hypothesis is rejected. It is concluded that there is no significant difference

between satisfaction of E-banking customers towards the Public and Private sector banks regarding the Value added services.

To sum up, There is a significant difference between the satisfaction of E-banking services towards the Public and Private sector banks regarding easy to understand and operation, safety and security and user friendly websites. There is no significant difference between the satisfaction of E-banking services towards the Public and Private sector banks regarding Up-to-date services, Trust, Easy way of transfer, transaction procedures and understandable languages and Value added services.

Path Analysis

Rapid technology advancements have introduced major changes in the worldwide economic and business atmosphere. Research on consumer perception towards electronic banking showed there are several factors predetermining the consumer's satisfaction towards electronic banking. The pertinent factors which determines the customer's satisfaction towards e-banking can be summarized as intention to use (IU), assurance (AS), tangibility (TG), service quality (SQ) and Overall satisfaction of E-banking users (Overall).

- **Intention to use**

Intention to use is defined as the level to which an individual customers that he or she would benefit from using electronic banking. It depends on the tangibility and assurance provided by the banks to use E-banking services.

H_1: Intention to use has a positive effect on tangibility and overall satisfaction of the E-banking service.

- **Tangibility**

The tangible dimension refers to the quality of physical structure, the equipment available to make the service an agreeable experience. Customers prefer those banks which have technological up to date equipment and visually appealing pamphlets and bank statement or any other kinds of tangibles. More

appealing and up to date technology is greater will be the usage of the services by the customers.

H_2: Tangibility has a positive effect on overall satisfaction of the E-banking service.

- **Service quality**

TDS stands for 'Tax Deducted at Source'. It was introduced to collect tax at the source from where an individual's income is generated. In the telecommunications industry value-added services, add value to the standard service offerings.

H_3: Service quality has positive effect on the overall satisfaction of the E-banking service.

- **Assurance**

Assurance refers to financial coverage that provides remuneration for an event that is certain to happen. It also apply to the validation services provided by the banks.

H_4: Assurance has positive effect on Overall satisfaction

- **Overall satisfaction**

Overall satisfaction of E-banking services were classified into Excellent, Very good, good, average and poor.

A 5-point Likert scale was used for measuring the above constructs with end anchors 1 for “strongly disagree” to 5 for “strongly agree”. The convergent validity of each construct was checked by examining the Average Variance Extracted'(AVE) values. Constructs which have AVE values greater than 0.5 are said to have convergent validity or uni-dimensionality. In some cases, values up to 0.4 are also considered if they are central to the model (Chin, 1998; Chin and Newsted, 1999; Chin et al, 2003).

Table - 10

Reliability and AVE

Constructs	Public sector bank			Private sector bank		
	Composite reliability	AVE	Cronbach alpha	Composite reliability	AVE	Cronbach alpha
Intention to use	0.753	0.707	0.783	0.770	0.758	0.796
Assurance	0.802	0.779	0.828	0.811	0.753	0.805
Tangibility	0.778	0.871	0.748	0.769	0.804	0.837
Services Quality	0.913	0.839	0.809	0.826	0.862	0.841
Overall satisfaction	1.000	1.000	1.000	1.000	1.000	1.000

Source: Field survey, 2019

The composite reliability for internal consistency of the constructs was above 0.7, both in Public and Private sector banks. The convergent validity of each construct was checked by examining the Average Variance Extracted' (AVE) values. The AVE scores for all the constructs are greater than 0.4 indicating sufficient convergent validity. Cronbach alpha values of customer satisfaction in Public sector banks, showing the internal consistency of the constructs, varied from 0.74 to 0.82, which signifies acceptable level of reliability and validity measures for the constructs. Cronbach alpha values of customer satisfaction in Private sector banks, showing the internal consistency of the constructs, varied from 0.79 to 0.84, which signifies acceptable level of reliability and validity measures for the constructs.

Figure-7

Public Sector – Path Analysis

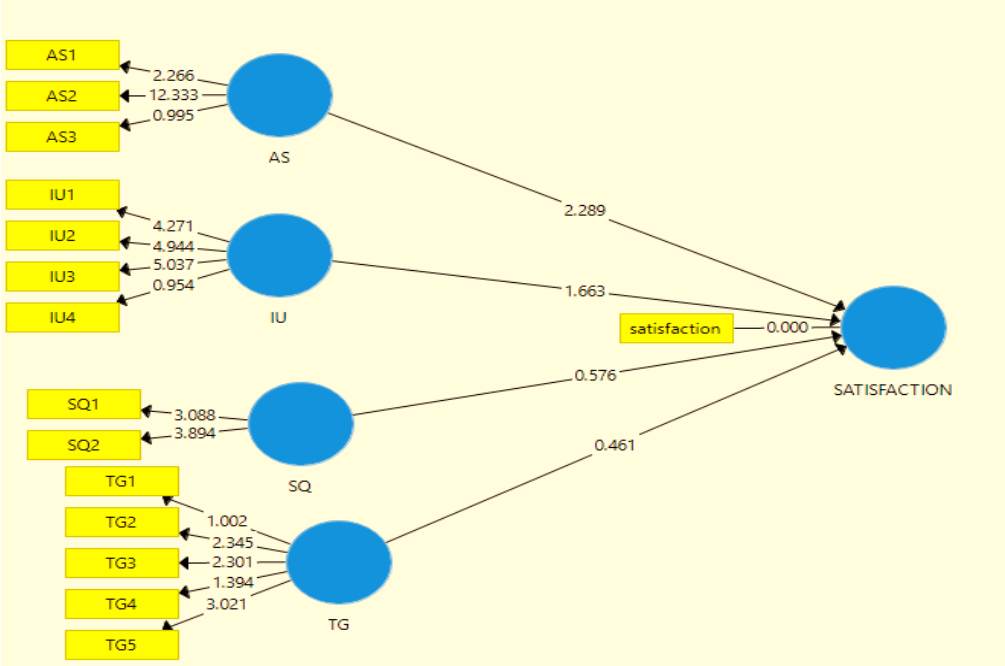
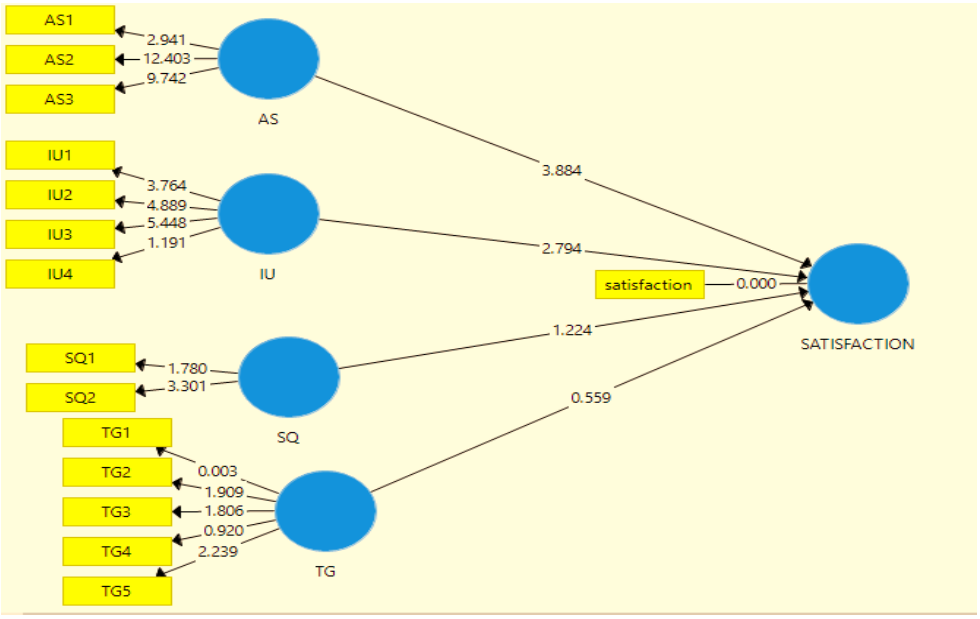


Figure- 8

Private Sector– Path Analysis



Above table gives the path co-efficient values and the related t-statistics which test the significance of the path co-efficient and the extent of relationship between constructs. A path to be significant, its t value needs to be greater than1.96.

Table 11

Estimated Structural Model- BOOTSTRAP

Construct	Public sector bank				Private sector bank			
	Sample Mean	Estimated Mean	Standard error	t-value	Mean	Estimated Mean	Standard error	t-value
IU→OA	0.275	0.442	0.012	1.745	0.279	0.277	0.058	3.873*
AS→ OA	0.466	0.243	0.010	2.202**	0.412	0.339	0.060	2.637**
SQ→ OA	0.194	0.182	0.013	0.549	0.356	0.344	0.016	1.586
TG→OA	0.126	0.491	0.019	0.472	0.407	0.292	0.027	0.651

Source: Field survey, 2019

Note: *and ** significant at 1 and 5 percent level respectively.

In private sector bank, Intention to use has the strongest relationship with Overall satisfaction of E-banking services as the standardization coefficient was equals to 0.279 and t-Statistic was 3.873, which was higher than the accepted rate 1.96. Assurance has positive relationship with Overall satisfaction of e-banking services as the standardization coefficient was equals to 0.412 and t-Statistic was 2.637, which was higher than the accepted rate 1.96.

In public sector bank, Assurance has positive relationship with Overall satisfaction of e-banking services as the standardization coefficient was equals to 0.466 and t-Statistic was 2.202, which was higher than the accepted rate 1.96

The study confirms the important effect of intention of use and Assurance has relationship with Overall satisfaction of E-banking services. Both Public and private sector bank, the customers were given higher priority to assurance, hence overall satisfaction is determined mainly by Assurance.

❖ PROBLEMS OF E-BANKING SERVICES

Now a day's Electronic banking is a norm rather than an exception for the banks. But in spite of it offers numerous assistance for the customer to make banking easy and convenient but there are many challenges which customers are facing in the adoption of Electronic banking. Al-Sukkar and Hassan (2005) identify potential disadvantages of deploying internet banking as indirect cost, cash availability and security concern. Thus in this section an attempt to made to identify the problems faced by the respondents while using e-banking services. The respondents were asked to state their views on the problems they faced while using E-banking services as either 'strongly agree' or 'agree' or 'neutral' or 'disagree' or 'strongly disagree'.

Factor analysis

Factor analysis was used to identify the underlying pattern of relationship between the various dimensions of problems faced by the customers while using E-banking services and whether the problems can be grouped in terms of composite variable. To determine the appropriateness of applying factor analysis, the KMO and Bartlett's test measures were computed and the results are presented in table 12.

Table – 12

KMO and Bartlett's Test Measures

Test measure	Public sector Bank	Private sector Bank
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.753	0.647
Bartlett's Test of Sphericity	335.440	101.530
Degrees of freedom	45	45
significance	0.000	0.00

Source: Field survey, 2019

KMO and Bartlett's test measures

KMO statistics for customers in public sector and private sector were 0.753 and 0.647 respectively signifying higher than acceptable adequacy of sampling. The Bartlett's test of Sphericity was also found to be significant at one percent level providing evidence of the presence of relationship between variables to apply factor analysis. The communalities for each variable were assessed to determine the amount of variance accounted by the variable to be included in the factor rotations. All the variables had a value greater than 0.50 signifying substantial portions of the variance accounted by the factors.

Table 13 enlists the Eigen values, their relative explanatory powers and factor loadings for 10 linear components identified within the data set.

Table- 13

Rotated Component Matrix- Private Sector Bank

Factors	Component			
	1	2	3	4
High transaction charge				.782
Long transaction procedure	.795			
Network problem during transaction	.866			
Website is not user friendly	.539			
Less transaction speed				
Less safety and security for money		.662		
Lack of proper customer service			.722	
Difficulty in understanding the transaction statement	0.726			
Difficulty in remembering password and user ID			.840	
Passwords is hacked	0.613			
Eigen values	2.750	1.395	1.227	1.025
Percentage of variance explained	27.502	13.946	12.270	10.247
Total variance explained	27.502	41.448	53.718	63.965

Source: Estimation based on Field Survey, Extraction method: Principal Component Analysis: Rotation Method: Varimax with Kaiser Normalization, rotation converged in 10 iterations

Table- 14

Rotated Component Matrix- Public Sector Bank

Factors	Component			
	1	2	3	4
High transaction charge	.785			
Long transaction procedure	.605			
Network problem during transaction		.699		
Website is not user friendly				
Less transaction speed				.517
Less safety and security for money	.645			
Lack of proper customer service			.698	
Difficulty in understanding the transaction statement		.846		
Difficulty in remembering password and user ID				.910
Passwords is hacked			.835	
Eigen values	2.630	1.719	1.3480	1.000
Percentage of variance explained	26.298	17.195	13.479	10.004
Total variance explained	26.298	43.493	56.972	66.976

Source: Estimation based on Field Survey, Extraction method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization, rotation converged in 10 iterations.

Table 13 and 14 enlists the Eigen values, their relative explanatory powers and factor loadings for 10 linear components identified within the data set. The Eigen value of the first 4 factors alone was greater than one indicating that these factors alone were appropriate for inclusion in the analysis for customers belonging to public sector banks and private sector banks. For customers in private sector banks four factors together accounted for nearly 64 percent of the variations in the factors while for customers in public sector the first four factors

accounted for nearly 67 percent of the variations respectively. The Kaiser rotated component matrix for private sector banks are presented in table 13.

For customers in private sector banks, factor 1 had significant loadings on three dimensions namely ‘Long transaction procedure’, ‘Network problem during transaction’, ‘Website is not user friendly’, ‘Difficulty in understanding the transaction statement’ and ‘Passwords is hacked’ (all together represents problems). These factors together accounted for nearly 28 percent of the total variance. Factor 2 had significant loadings on only one dimensions namely ‘Less safety and security for money’ (security) and explains nearly 14 percent of the total variance. Factor 3 had significant loadings on two dimensions namely ‘Lack of proper customer service’ and ‘Difficulty in remembering password and user ID’ (operational concerns) and explains 12 percent of the total variance. Factor 4 had significant loadings on only one dimensions namely ‘High transaction charge’ (indirect cost) and explains10 percent of the total variance. Hence the major constraints in using e-banking services for customers in private sector banks were difficulty, operational concerns, security and indirect cost.

For customers in public sector banks, factor 1 had significant loadings on four dimensions, namely, ‘High transaction charge (indirect cost), ‘Long transaction procedure’ (operation), and ‘Less safety and security for money’ (safety). Factor 1 explaining 26 percent of the variance. Factor 2 has significant loadings on two dimensions namely ‘Network problem during transaction’ and ‘Difficulty in understanding the transaction statement’ (together representing operation concerns) and explains only 17 percent of the variance. Factor 3 had significant loadings on two dimensions, which are very ‘Lack of proper customer service’ and ‘Passwords is hacked’ (together representing accessibility) and explains nearly 13 percent of the variance. Factor 4 had significant loadings on two dimensions namely ‘Less transaction speed’ and ‘Difficulty in remembering password and user ID’ (together tangibility) and explains nearly 10 percent of the variance. Hence, the major constraints in using e-banking services for customers in public sector banks were safety, operational concerns, accessibility, indirect cost and tangibility.

To sum up for e-banking users in private sector banks the major problems faced by them were difficulty, operational concerns, security and indirect cost. For users in public sector banks were safety, operational concerns, accessibility, indirect cost and tangibility. In general it was operation concern, security and indirect cost which were the major problems faced by the customers in both sectors. Hence if the banks were able to solve these problems, it can be to attract more customers to use e-banking facilities.

TIME TAKEN TO SOLVE PROBLEMS

In order to attract more customers, the banks should take initiative to solve the problems faced by the customers while using e-channels. How quickly the banks taken measures to solve the problems has explained in the following table 15.

Table – 15

Time Taken to Solve the Problems

Time taken Problems	Frequency	Percentage (%)
Immediately	8	8.33
Within 24 hours	7	7.29
Within 48 hours	12	12.5
Within 3-5 working days	7	7.29
More than a week	0	0
Not faced any problem	62	64.58

Source: Field Survey, 2019

From the above table 15, it is clear that nearly 13 percent of the respondents said that their problem regarding E-banking services were solved within 48 hours; followed by 8.33 percent of the respondent's problem were solved immediately; 7 percent each of the respondent's problems solved within 24 hours and 3-5 working days respectively and majority of the respondents (64.58 percent) were didn't faced any problem while using e-channels in last one year.

Chi-Square Analysis

In order to investigate the relationship between the problems faced by the respondents while using e-banking services and demographic profile (gender, age, marital status, education, occupation and monthly income) of the respondents, Pearson's chi-square test was done. The null hypothesis framed was:

H_0: There is significant association between the socio economic profile of the respondents and problems faced by the respondents while using e-banking in last one year.

H_a: There is no significant association between the socio economic profile of the respondents and problems faced by the respondents while using e-banking in last one year

The calculated chi-square values are shown in table 16

Table- 16

Relationship Between the Problems Faced by Respondents While Using E-banking Services and Demographic Profile

Variable	Chi-square value	Degrees of freedom	Asymptotic significance	Inferences
Age	10.881	8	0.209	**Accept H_0**
Gender	9.649	4	0.047	**Reject H_0**
Marital Status	15.493	8	0.050	**Reject H_0**
Education	13.653	12	0.323	**Accept H_0**
Occupation	28.115	16	0.031	**Reject H_0**
Annual Income	21.354	12	0.045	**Reject H_0**

Source: field survey, 2019

The study found no significant association between problems faced by respondents while using e-banking services in last one year and age of the respondents and education of the respondents. However, gender, marital status, occupation and annual income were found to have significant association with the problems. This implies that higher level of problems was found among the

variables such as gender, married respondents, persons with higher positions and having higher income.

❖ OPINION ON SERVICE QUALITY

The definition of service quality is based on customers led quality definition where quality is defined as satisfying customer's requirements relying on the ability of the organization to determine customer's requirements and then meet these requirements. An attempt was made in this section to ascertain the quality of e-banking facilities so as to identify the quality that affect the adoption of e-banking facilities. Customers were asked to rank the opinion towards their services quality of e-channels. The opinion were listed and the customers were asked to rank their opinion in their order of priority. The ranks were then converted into percent position and from the percent position the individual scores were determined on a scale of 100 points by using Garrett's Rating Scale. The average scores and the ranks corresponding to each opinion are presented in table 17.

Table – 17

Opinion on Service Quality- Mean & Rank

Service quality	Public sector bank		Private sector bank	
	Average score	Rank	Average score	Rank
Answer calls quickly	17.14	7	42.72	1
Well known about banking products	47.93	1	41.29	2
Quickly handling the issues	34.43	2	35.71	3
Good communication skill	20.43	6	30.29	4
Not responding properly	20.93	5	25.88	5
Lack of proper customer services	23.21	4	25	6
Behaves indifferently	33.71	3	19.23	7

Source: Field survey, 2019

The major quality of service is given by public sector bank customers were 'Well known about banking products' (1st rank), followed by 'quickly handling the issues' (2nd rank), 'Behaves indifferently' (3rd rank). Customers in private sector banks were given the first priority was 'Answer calls quickly' (1st rank), 'Well known about banking products' (2nd rank), 'Quickly handling the issues' (3rd rank). For both banks there was only one quality of service given same rank 'not responding properly' (5^{th} rank). The study revealed that in public sector bank the least rank given to 'answer calls quickly' and in private sector it was 'behaves differently'. Hence, the study found that both the banks should concentrate on the customer care services and improve their quality of services.

- **SUGGESTIONS TO IMPROVE THE SERVICES**

An attempt was made in this section to give suggestions to overcome the problems the customers faced while using e-banking services. Seven statements were prepared and the respondents were asked to state their suggestions on these statements. The suggestions were classified on a five point scale with the designated attribute such as strongly agree/agree/neutral/disagree/strongly disagree.

Factor analysis

Factor analysis was applied to determine the underlying pattern of relationship between various dimensions of suggestions to overcome the problems, the customers faced and find whether these factors can be grouped in terms of a composite variable. To determine the appropriateness of applying factor analysis the KMO and Bartlett's test measures were computed and the results are shown in table 18.

Table- 18

KMO and Bartlett's Test Measure

Test measure	Public Sector & Private Sector Banks
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.765
Bartlett's Test of Sphericity	273.064
Degrees of freedom	21
significance	0.000

Source: Field survey, 2019

KMO and Bartlett's Test Measure

KMO statistics for customers in both public and private sector banks were 0.765 signifying higher than acceptable adequacy of sampling. The Bartlett's test of Sphericity was also found to be significant at 1 percent level providing evidence of the presence of relationship between the variables to apply factor analysis. The communalities for each variable were assessed to determine the amount of variance accounted by the variable to be included in the factor rotations. All the variables had a value exceeding 0.5 signifying substantial portions of the variance in the variables accounted by the factors.

Table 18 enlists the Eigen value, their relative explanatory powers and factor loadings for 7 linear components identified within the data set. The results indicate for the sample data, the Eigen value of the first 2 factors alone was greater than 1 for both public and private sector banks indicating that these factors alone were appropriate for inclusion in the analysis. For both banks the first two factors together accounted for nearly 59 percent of the variations in the factors.

Table- 19

Rotated Component Matrix

SUGGESTIONS	Component	
	1	2
The transaction cost must be reduced by the bank		0.823
Website should be made user friendly		
Transaction Procedures should be made simple as much as possible		0.823
Websites must be updated regularly	0.866	
Improving the cyber security laws in banking sector	0.673	
Transaction speed must be increased	0.849	
Instead of Passwords, Biometrics can be used	0.711	
Eigen values	**3.090**	**1.027**
Percentage of variance explained	**44.149**	**14.677**
Cumulative percentage of variance	**44.149**	**58.827**

Source: Estimation based on Field Survey, Extraction method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization, rotation converged in 7 iterations

The Kaiser rotated component matrix presented in table 19 reveals that factor one had significant loadings on four dimensions namely, 'Websites must be updated regularly', 'Improving the cyber security laws in banking sector', 'Transaction speed must be increased' and 'Instead of Passwords, Biometrics can be used' and explains 44 percent of the variance. Factor 2 had significant loadings on three dimensions namely 'Transaction Procedures should be made simple as much as possible' and 'the transaction cost must be reduced by the bank 'and explains only nearly 14 percent of the variance. Hence to sum up, if the banks improve their services to overcome the problems faced by the customers such as security, speed, simple procedure and hidden cost, they can increase their number of customers to utilise the e-banking facilities for the near future.

❖ OVERALL SERVICE QUALITY OF E-BANKING

Quality itself has been defined as fundamentally relational quality is the ongoing process of building and sustaining relationship by assessing, anticipating and fulfilling stated and implied needs. This following table has shown the quality of services in E-banking.

Table – 20

Overall Service Quality for Both Banks (in numbers)

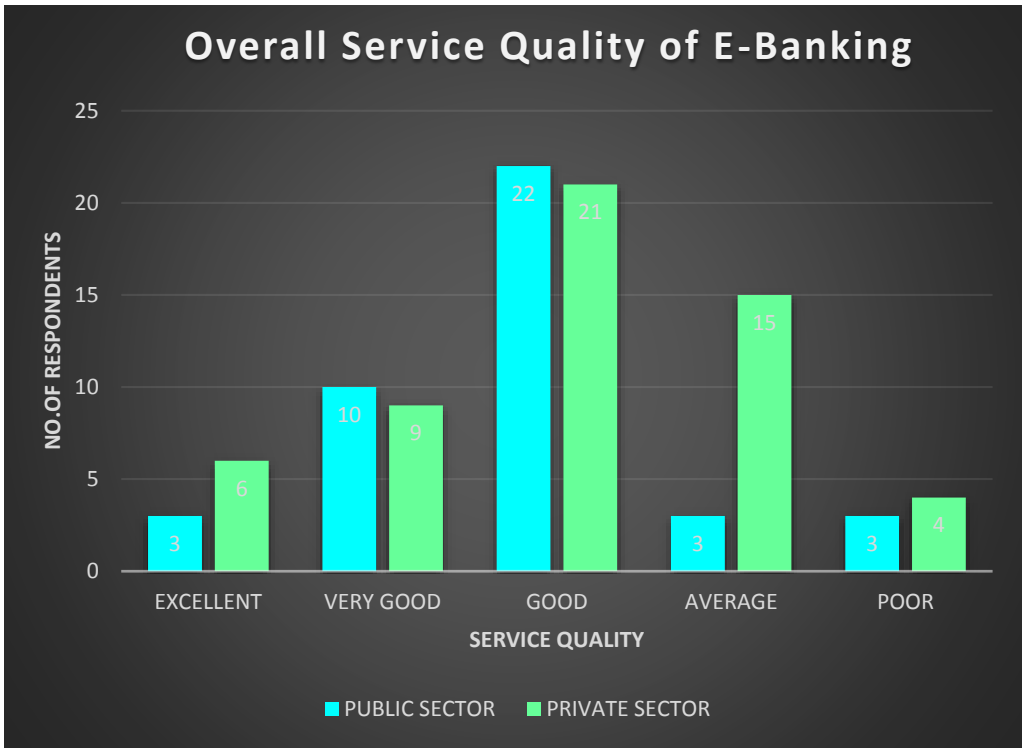
Service quality	Private sector bank	Public sector bank
Excellent	6	3
Very good	9	10
Good	21	22
Average	15	3
Poor	4	3
Total	55	41

Source: Field survey, 2019

From the above table 20, it is clear that, both in public and private sector banks 43 respondents were given opinion regarding the service quality is good. Nearly 18 respondents expressed their view on service quality on private sector is average and 9 respondents revealed their view on service quality is Excellent in Public and Private sector respectively and remaining 7 respondents given their view on the overall service quality of E-banking is poor in both sector respectively.

Figure- 9

Overall Service Quality of E-Banking



CHAPTER -V

SUMMARY AND CONCLUSION

The advent of Internet has initiated an electronic revolution in the global banking sector. The dynamic and flexible nature of this communication channel as well as its ubiquitous reach has helped in leveraging a variety of banking activities. Various developments have taken place in Indian Banking. Among the various developments, technology has influenced the way customer interacts with banks. Electronic channels and products such as ATMs, cards, internet banking and mobile banking are offered along with traditional branch channel. Differences in the usage of channels exist between developed countries and developing countries. Evidence suggests that there is a shift from traditional channel to electronic channels. For example, usage of digital banking in developed countries is more than 90 percent and diffusion of digital channels in developing countries range from 11 percent to 25 percent. The study by Capgemini in his report “World Payments Report 2014” indicate that non-cash transactions have reached 334 billion transactions. There is a greater propensity of customers to move towards digital channels. Banks which develop digital capabilities are going to benefit. Customers realize greater convenience through digital channels. However, banks need to cope up with issues of customer service and frauds which are associated with digital channels. Adoption is the acceptance and continued use of a product, service, or idea.

According to Rogers and Shoemaker (1971), consumers go through a process of knowledge, persuasion, decision and confirmation before they are ready to adopt a product or service. The adoption or rejection of an innovation begins when the consumer becomes aware of the product. Most of the earlier studies have focused on issues related to e-banking in countries like USA (Venkatesh et al., 2003; Chuttur, 2009); Nigeria (Bankole, Bankole and Brown, 2011); South Africa (Govender and Sihlali, 2014); Finland (Shaikh and Karjaluoto, 2015); Pakistan (Shaikh et al., 2015); United Kingdom (Choudrie et al., 2017); Jordan (Alzubi, Al-Dubai and Farea, 2018). Not many studies have

been conducted to evaluate the utilization of e-banking services by the customers in India. The present study intends to examine the **'Comparative study of customer's preference towards E-banking services'**.

Objectives of the Study

- To study the socio-economic profile of the customers of e-banking services
- To analyse the customers opinion towards the e-banking services in Tirupur District.
- To know the satisfaction level and motivational factors to attract customers towards E-banking services.
- To identify the problems faced by the respondents while using e-banking services
- To provide suggestions to overcome the problems faced by the customers in Tiruppur District.

Hypothesis of the Study

- There is a significant relationship between Annual income and number of usage of E-banking services.
- There is a significant relationship between regularity of changing passwords and the time gap between changing passwords.
- There is a significant relationship between problems faced by the customers related to bank account in last one year and socio- economic profile of the respondents.
- There is significant difference between the satisfaction of E-banking customers towards the Public and Private sector banks.
- There is a significant difference between the satisfaction of E-banking services towards the Public and Private sector banks regarding easy to understand and operation, safety and security and user friendly websites.

- Intention to use has a positive effect on tangibility and overall satisfaction of the E-banking service.

Methodology

Multi stage sampling design was adopted in the study for selecting the sample. The population of the study initially consisted of all banks in Tiruppur city. The banks were divided into two categories namely public sector banks and private sector banks. From these selected banks 96 samples were selected by adopting incidental purposive sampling technique. Data pertaining to the study were collected by personal interview method. Data for the study were collected from the sample units by administering a pre-tested interview schedule during the period December 2018 to January 2019.

Socio-Economic Profile

- Adoption of e-banking services indicated that female represent the segment with the highest use of e-banking (57 percent) compared to male group (43 percent).
- Majority of the respondents (62 percent) belonging to the age category of 26 years to 50 years
- Majority of them were married (71 percent)
- Majority (57) of the samples were graduates
- Majority (32 percent) were doing own business
- Majority of the respondents were receiving annual income in the range from Rs.1 lakh to Rs. 2 lakhs

Banking Profile of the Respondents

- Majority of the respondents (57.3 percent) have account in private sector banks and then in (42.7 percent) public sector banks.
- The study revealed that majority of them holding account in different banks for their transaction day to day life activities.

- Majority (36.5%) of the respondents holding account on 4-6 years of experience with their respective bank;
- Majority (78.1%) of the respondents having only saving account. out of 96 respondents, none of them used the fixed deposit account, NRI account, Demat account and current account alone.

Sources of Awareness about E-Banking Services

- Majority of the respondents got awareness through friends in public sector banks and relatives in private sector banks and media also played an important role in creating awareness among the usage of e-banking services from both the banks.

Frequency Mode of Transaction of the Respondents

- The study found that, the most frequent way of transaction used by the customers were cash machine (debit cards & credit cards).

Chi-square analysis

- There is a significant relationship between the regularity of changing passwords and the time gap between changing passwords.

Purpose of using e-banking services

- Out of 96 respondents 33percent of the respondents were using E-banking services for Inter account money transfer

Pearson's Correlation analysis

- There is a positive degree of correlation between the variables. This means that when income increases, number of usage of e-banking per month also increases. The number of usage of E-banking per month is not independent of the annual income of the respondents.

Motivational Factors to Induce E-Banking Services

- Customers in both banks were motivated to use e-banking services were 'Convenience'**.** The least ranks were given to 'account can be managed more efficiently' in public sector banks and 'safety and security' in private sector banks.

Satisfaction towards the Usage of E-Banking Services- Two test Sample Analysis

- There is a significant difference between the satisfaction of E-banking services towards the Public and Private sector banks regarding easy to understand and operation, safety and security and user friendly websites. There is no significant difference between the satisfaction of E-banking services towards the Public and Private sector banks regarding Up-to-date services, Trust, Easy way of transfer, transaction procedures and understandable languages and Value added services.

Path Analysis

- The study confirms that the important effect of intention of use and assurance has relationship with overall satisfaction of E-banking services. In both Public and private sector banks customers were given higher priority to assurance, hence overall satisfaction is determined mainly by the factor assurance.

Problems of e-banking

- For e-banking users in private sector banks the major problems faced by them were difficulty, operational concerns, security and indirect cost. For users in public sector banks were safety, operational concerns, accessibility, indirect cost and tangibility. In general it was operation concern, security and indirect cost which were the major problems faced by the customers in both sectors.

Time taken to solve problems

- Thirteen percent of the respondents said that their problem regarding E-banking services was solved within 48 hours. Majority of the respondents (64.58 percent) were didn't face any problem while using e-channels in last one year.

Chi-square analysis

- The study found no significant association between problems faced by respondents while using e-banking services in last one year and age, type of family and education of the respondents. However, gender, marital status, occupation and monthly income were found to have significant association with the problems.

Opinion on Service Quality

- The first rank of quality of service is given by public sector bank customer's was 'well known about banking products' (1st rank) and customers in private sector banks given the first priority was 'answer calls quickly'. The study revealed that in public sector banks the least rank was given to 'answer calls quickly' and in private sector it was 'behaves differently'. Hence, the study suggests that both banks should concentrate on customer care services and improve their quality of services.

Suggestions to Improve the Services

- The banks should improve their services to overcome the problems faced by customers such as security, speed, simple procedure and hidden cost, so that they can increase their number of customers to utilize their e-banking facilities for the near future.

Overall Service Quality of E-Banking

- Both in public and private sector banks 43 respondents had given opinion regarding the service quality as good.

CONCLUSION

To conclude, the study found that customers were highly motivated and satisfied with safety and security of e-banking services in Public sector banks and in private sector banks, with time consuming factor. Both in private and public sector banks customers were facing the problems like high hidden cost and network problem while doing transaction. The study revealed that banks should give attention to overcome the problems they face and concentrate on speeding up of networking for non-stop services for the customers. Hence, the banks to provide pronounced facilities and services to their customers are the need of the hour in today's competitive world.

BIBLIOGRAPHY

BOOKS

1) Keyes, J. (1999), “Banking Technology Handbook”. CRS Press: London.

JOURNALS

1) Abenet Y (2010), “Key factors that determine adoption of internet banking in Ethiopia”, Retrieved from **Journal of Internet Banking and Commerce,** January 2017, Vol.22, No.S7-16, (online) **http://etd.aau.edu.et/dspace/bitstream/123456789/3150/1.**
2) Ala`Eddin Mohd Khalaf Ahmad and Hasan Ali Al-Zu’bi (2011), “E-banking Functionality and Outcomes of Customer Satisfaction: An Empirical Investigation”, **International Journal of Marketing Studies**, Vol. 3(1), pp.50-65.
3) Alagarsamy.K & Wilson.S (2013), “A Study on Customer Behavior Towards Banking Services with Special Reference to Public Sector Banks in Sivagangai Dist”, **Asia Pacific Journal of Marketing & Management Review,** Vol. 2(2), pp. 183-197.
4) Amruth Raj Nippatlapalli (2013), “A Study on Customer Satisfaction of Commercial Banks: Case Study on State Bank of India”, **IOSR Journal of Business and Management,** Vol. 15(1), pp. 60-86.
5) Annin. K, Adjepong.O.M, and Senya. S.S (2013), “Applying logistic regression to e-banking usage in Kumasi Metropolis, Ghana”, **International Journal of Marketing Studies**, Vol.6, pp.153-162.
6) Belás Jaroslav and et.al (2016), “Electronic Banking Security and customer Satisfaction in Commercial Banks”, **Journal of Security and Sustainability Issues,** Vol. 5(3), pp. 411-423.
7) Bhavesh.J.Parmar and et.al (2013), “Rural banking through internet: A study on use of internet banking among rural consumers”, **Asian Journal of Management Research,** Vol. 3(2), pp. 325 – 336.
8) Dhananjay. B and Suresh CB (2015), “The Electronic Banking Revolution in India”, **Journal of Internet Banking and Commerce,** Vol. 20(2), pp. 1-5.

9) Dhanavandan.S (2016), “Application of Garret Ranking Technique: Practical Approach”, **International Journal of Library and Information Studies,** Vol. 6(3), pp. 135 – 141.
10) Dimitrios Maditinos and et.al (2013), “An examination of the critical factors affecting consumer acceptance of online banking A focus on the dimensions of risk”, **Journal of System and Information Technology,** Vol. 15(1), pp. 97-116.
11) Edward Attah-Botchwey (2014), “Electronic Banking and the Challenges of the Ghanaian Business Environment”, **International Journal of Humanities and Social Science,** Vol. 4(9), pp. 274 – 285.
12) Faizan Mohsan and et.al (2011), “Impact of Customer Satisfaction on Customer Loyalty and Intentions to Switch: Evidence from Banking Sector of Pakistan”, **International Journal of Business and Social Science,** Vol. 2(11), pp. 263-271.
13) Farshad Havasi and et.al (2013), “E-Banking: Status, Implementation, Challenges,Opportunities”, **IOSR Journal Of Humanities And Social Science,** Vol. 12(6), pp. 40-48.
14) Fatemeh Soleimani Roozbahani and et.al (2015), “The Role of E-Payment Tools and E-Banking in Customer Satisfaction Case Study: Pasargad Bank E-Payment Company”, **International Journal of Advanced Networking and Applications**, Vol. 7(2), pp. 2640-2649.
15) Fathima Adeela Beevi.TKS (2014), on “Customer Satisfaction and Perception towards the Services of Cooperative Banks”, **International Journal of Economic and Business Review,** Vol. 2(11), pp. 62-67.
16) Fonchamnyo. DC (2013), “Customers’ perception of e-banking adoption in Cameroon: An empirical assessment of an extended TAM”, **International Journal of Economics and Finance**, Vol.5, pp.166-176.
17) Fozia (2013), “A Comparative Study of Customer Perception toward E-banking Services Provided By Selected Private & Public Sector Bank in India”, **International Journal of Scientific and Research Publications**, Vol. 3(9), pp. 1-5.
18) Geetha.K.T and Malarvizhi. V (2017), “Acceptance of E-Banking among Customers (An Empirical Investigation in India)”, **Journal of Management and Science**, Vol. 2(1), pp. 1-72.

19) Hans H. Bauer (2005), “Measuring the quality of e-banking portals”, **International Journal of Bank Marketing,** Vol. 23(2), pp. 153-175.
20) Harinder Singh Gill and Saurabh Arora (2013), “Study of Customer Satisfaction: A Comparison of Public and Private Banks”, **Pacific Business Review International**, Vol. 6(6), pp. 74-82.
21) Harsha Vardhan Reddy.D.V & Ramana.D.V (2013), “A Study on Customer Satisfaction with Service of Banks”, **Journal of Research in Commerce & Management,** Vol. 2(7), pp.44-54.
22) Jasdeep Kaur (2017), “Growth of E-Banking in India”, **International Journal of Research in Finance and Marketing,** Vol. 7(5), pp.88-94.
23) Kesari Singh and Nitin Gupta (2016), “Customer’s Perception and Satisfaction towards Services of Public & Private Sector Banks”, **International Journal of Management**, Vol. 7(6), pp. 77-88.
24) Kumari Nidhi (2016), “E-Banking in India: Challenges and Opportunities”, **International Journal of Science Technology and Management,** Vol. 5(8), pp. 809 – 816.
25) Kumbhar V. M (2011), “Factors Affecting the Customer Satisfaction in E-Banking: Some Evidences form Indian Banks”, **Management Research and Practice,** Vol. 3(4) pp. 1-14.
26) Lakshmi Narayana.K and et.al (2013), “A Study on Customer Satisfaction towards Online Banking services with reference to Bangalore city”, **Acme Intellects International Journal of Research in Management,** Vol. 2(2), pp. 1-18.
27) Lekshmi Bhai.P.S (2018), “E-Banking in India - Problems and Prospects”, **International Journal of Current Engineering and Scientific Research,** Vol. 5(1), pp. 77 – 81.
28) Mahbub Rahman and et.al (2017), “Problems and Prospects of Electronic Banking in Bangladesh: A Case Study on Dutch-Bangla Bank Limited”, **American Journal of Operations Management and Information Systems,** Vol. 2(1), pp. 42-53.
29) Margaret. M.N and Goma. M.F (2013), “Socio-demographic factors influencing adoption of internet banking in Zimbabwe”, **Journal of Sustainable Development in Africa**, Vol.15, pp.145-154.

30) Maya B. Lohani and et.al (2011), “Comparative Study of Customer Perception towards Services Provided by Public Sector Bank and Private Sector Bank”, **International Journal of Engineering and Management Sciences**, Vol. 2(3), pp. 143-147.

31) Miranda and et.al (2006), “Quantitative Evaluation of e-Banking Web Sites: an Empirical Study of Spanish Banks”, **The Electronic Journal Information Systems Evaluation,** Vol. 9(2), pp. 73 – 82.

32) Mohammad.O.Al-Smadi (2012), “Factors Affecting Adoption of Electronic Banking: An Analysis of the Perspectives of Banks' Customers”, **International Journal of Business and Social Science,** Vol. 3(17), pp. 294-309.

33) Mustafa Hassan Mohammad Adam (2013), “Electronic Banking Problems and Opportunities: The Sudanese Context”, **European Journal of Business and Management** Vol. 5(22), pp. 55-68.

34) Nehmzow, C. (1997), “The Internet Will Shake Banking's Medieval Foundations”, **Journal of Internet Banking and Commerce**, (online), Retrieved on **http://www.arraydev.com/commerce/JIBC/ 9702-01.htm.**

35) Puneet Bafna and Shubham Nahar (2017), “E-banking - Challenges and opportunities”, **International Journal of Commerce and Management Research,** Vol. 3(4), pp. 89 – 92.

36) Raja Irfan Sabir and et.al (2014), “Factors Affecting Customer Satisfaction in Banking Sector of Pakistan”, **International Review of Management and Business Research**, Vol. 3(2), pp. 1014-1025.

37) Rashed Al Karim and Tabassum Chowdhury (2014), “Customer Satisfaction on Service Quality in Private Commercial Banking Sector in Bangladesh”, **British Journal of Marketing Studies,** Vol. 2(2), pp. 1-11.

38) Ravi.C.S and Kundan Basavaraj (2013), “Customers Preference and Satisfaction towards Banking Services with Special Reference to Shivamogga District in Karnataka”, **TRANS Asian Journal of Marketing & Management Research,** Vol. 2(1), pp.28-39.

39) Roshan Lal and Rajni Saluja (2012), “E-Banking: The Indian Scenario”, **Asia Pacific Journal of Marketing & Management,** Vol. 1(4), pp.16-25.

40) Roshan Lal and Rajni Saluja (2012), “E-Banking: The Indian Scenario”, **Asia Pacific Journal of Marketing & Management Review**, Vol. 1(4), pp. 16-26.

41) Ruby Shukla and Pankaj Shukla (2011), “E-Banking: Problems and Prospects”, **International Journal of Management & Business studies**, Vol. 1(1), pp. 23-26.

42) Sheshadri. P and Rani. SS (2014), “The influence of demographic variables on customer adoption of banking services”, **International journal of scientific research**, Vol.3, pp-1-5.

43) Siva Krishna.S and Venu Gopal.S (2016), “A study on “e-banking to improve customer base - With reference to HDFC bank ltd, Eluru (ap- India)”, **International Journal of Research and Computational Technology**, Vol. 4(3), pp. 1-10.

44) Snehalkumar H Mistry (2013), “Measuring Customer Satisfaction in Banking Sector: with Special Reference to Banks of Surat City”, **Asia Pacific Journal of Marketing & Management Review,** Vol. 2(7), pp. 132-141.

45) Surabhi Singh and Renu Arora (2011), “A Comparative Study of Banking Services and Customer Satisfaction in Public, Private and Foreign Banks”, **J Economics**, Vol. 2(1), pp. 46-54.

46) Tater. B, Tanwar. M and Murari. K (2011), “Customer adoption of banking technology in private banks of India”, **International Journal of Banking and Finance**, Vol. 8 pp. 72-88.

REPORTS

1) Capgemini (2014), World Payments Report.
2) Talwar, S.P. (1999). “IT and the banking sector”, Reserve bank of India bulletin.

WEBSITES

1) **www.abhinavjournal.com**
2) **www.academia.edu**
3) **www.bmj.com**
4) **www.rbi.org.in**
5) **www.researchgate.net**
6) **www.scribd.com**

INTERVIEW SCHEDULE

1) Name:
2) Age:
3) Gender: a).Male b) Female
4) Marital status
5) Type of family
6) Educational status:
7) Occupation:
8) Annual income:
9) Mention the bank in which you holds account:
    a) Public sector banks
    b) Private sector banks
10) How many bank accounts do you have?
11) No. of years' experience with respective account holding bank:
    a) Below 2 years
    b) 2years-4years
    c) 4years-6years
    d) 6years-8years
    e) 8years-10 years
    f) Above 10years
12) What type of account do you hold in your respective bank
    a) Saving account
    b) Current account
    c) Recurring deposit
    d) Fixed deposit
    e) Demat account
    f) NRI account
13) Do you aware of E-banking: a) Yes b) No
14) Awareness of E-banking through
    a) Friends
    b) Relatives
    c) Neighbours
    d) Advertisement

e) Media

15) What are your most frequent ways of banking transactions?

a) Branch banking
b) Cash machine (debit and credit card)
c) mobile banking
d) Internet banking
e) Telebanking n
f) NEFT / RTGS
g) PayTM
h) Google banking

16) What are the Motivational factors using E-banking services in your day -to -day banking activities? Here HS- Highly Satisfied, S-Satisfied, N-Neutral, DS-Dissatisfied, HDS-Highly Dissatisfied

Factors	HS	S	N	DS	HDS
Convenience					
No need to stand in queue					
Safety and security					
Easy to maintain					
Reliability					
Transparency					
No need to carry cash					
Anywhere/Anytime(24x7)					
Quick transactions					
Innovative services					
Account can be managed more effectively					

17) How often do you use E-banking service per month?

a) Never use b) less than 5 times c) 5 to 10 times d) more than 10 times

18) Which banking services do you always use through E-banking?

a) Basic account information
b) Balance enquiry
c) Inter account Money transfer
d) Stock trading

e) Making bill payment
f) Cheque book
g) Others

If any others, mention:

19) Do you change passwords regularly? a) Yes b) No

If yes, how often do you change password:

20) Do you believe that payments via electronic banking is safe? a) Yes b) No

21) Have you ever experienced a hacking attack of your account? a) Yes b) No

If yes mention the solution you have taken:

22) How many times have you faced a problem related to your bank account in the last one year?

a) Never
b) Only once
c) 1-5 times
d) 5-10 times
e) More than 10 times

23) How quickly were your problems and issues addressed by the bank staff?

a) Immediately
b) Within 24 hours
c) Within 48 hours
d) Within 3-5 working days
e) More than a week

24) What is your opinion regarding the bank's customer service representative? (Give Ranks)

a) Answer calls quickly
b) Well known about banking products
c) Quickly handling the issues
d) Good communication skill
e) Not responding properly
f) Lack of knowledge about banking products
g) Behaves indifferently

25) Consumer satisfaction towards the quality service of E-Banking:

Here HS- Highly Satisfied, S-Satisfied, N-Neutral, DS-Dissatisfied, HDS-Highly Dissatisfied

S.No	Factors	HS	S	N	DS	HDS
Intention to use						
1.	Account details are up-to-date					
2.	Easy transfer of money from one account to another account					
3.	Easy to understand the banking statements					
4.	Easy to understand banking procedures					
Assurance						
1.	Money is safe and secure					
2.	Reliability					
3.	Trustworthiness					
Tangibility						
1.	User menus are clearly categorised in the bank website					
2.	Website of the bank is user friendly					
3.	Banks website provides information in understandable language					
4.	Time taken for the operations					
5.	Document formalities of opening E-banking					
Services quality						
1.	TDS Enquiry					
2.	Value added services of bank					

26) What are the problems faced by you while using E-banking services

S.No	Factors	SA	A	N	DA	SDA
1.	High transaction charge					
2.	Long transaction procedure					
3.	Network problem during transaction					
4.	Website is not user friendly					
5.	Less transaction speed					
6.	Less safety and security for money					
7.	Lack of proper customer service					
8.	Difficulty in understanding the transaction statement					
9.	Difficulty in remembering password and user ID					
10.	Passwords is hacked					

If any other difficulty, mention----------

27) What do you feel about overall service quality of E-banking services?

a) Excellent
b) Very good
c) Good
d) Average
e) Poor

28) Do you recommend others to use E-banking services? a) Yes b) No

29) Give your suggestions to overcome the problems faced by you while using E-banking services (Here SA- Strongly Agree, A-Agree, N-Neutral, DA-Disagree, SDA-Strongly Disagree)

S.NO	SUGGESTIONS	SA	A	N	DA	SDA
1.	The transaction cost must be reduced by the bank					
2.	Website should be made user friendly					
3.	Transaction Procedures should be made simple as much as possible					
4.	Websites must be updated regularly					
5.	Improving the cyber security laws in banking sector					
6.	Transaction speed must be increased					
7.	Instead of Passwords, Biometrics can be used					