PREFERENCE OF RETAIL SELF-SERVICE CUSTOMERS TOWARDS SELF-SERVICE TECHNOLOGY IN INDIAN BANKING SECTOR: A COMPARATIVE STUDY OF SELECTED PUBLIC AND PRIVATE SECTOR BANKS IN JHARKHAND

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In

MANAGEMENT

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THESIS COMPLETION CERTIFICATE

This is to certify that the research thesis titled — "Preference of retail self-service customers towards self-service technology in Indian banking sector: A comparative study of selected public and private sector banks in Jharkhand ", submitted by Shovona Choudhury in partial fulfillment of the requirements for the award of the Degree of Doctor of Philosophy in Management by the ICFAI University Jharkhand, Ranchi is an original work carried out by her under our joint guidance. It is certified that the work has not been submitted anywhere else for the award of any other Degree or Diploma of this or any other University. We also certify that she complied with the Plagiarism Guidelines of the University.

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1.Executive Summary

Customer centricity is one of the crucial aspects of defining the survival and growth of banks in today's competitive world. Customers' need for quality service with convenience and speed has led to numerous initiatives by banks. This includes instant banking solution through the use of self-service technology that is expected to facilitate significant enhancement in the quality of customer support. While noteworthy progress has been made by banks in this respect, there is still an urgent need to make the services more customer-centric in relation with customer quality and preference and extend its reach to a wider section of the society.

The purpose of this research is to identify appropriate demographic segments where the self-service technology is still not widely adopted and find the difference in preferences of customers, if any, between public sector (SBI and Bank of India) and private sector (HDFC & ICICI) banks in Jharkhand regarding the self-service technology. Exploration of the customer's preference and the categorization of the demographic variables (like gender, age, educational qualification, and occupation) have been done with the help of review of existing literature and valued opinion of experts. The aspects of self-service technology such as convenience to use with reference to location, time, cost, comfort, security and human interface of banks are analyzed. Data has been collected from primary as well as secondary sources in the research work. The need of the customers has been analyzed to reconfigure internet banking strategies so that the facilities could be more customer-centric in relation to customer quality and preference. The study provides the recommendation on how these self-service technologies can enhance customer perceptions regarding quality and preference so that customers move less to banks thereby decreasing the operational cost of the bank. The research highlights the importance of identifying the various demographic variables which influence the preference for self-service technology, specifically for Ranchi and in and around of it.

It has been analyzed that though several self-service technology are provided by banks, the frequency of preference of ATM's is more by the customers. Adoption of other modes of self-service technology like internet banking or telebanking is still not widely adopted. The findings with respect to factors influencing customer preferences towards self-service technology have been discussed in the research.

But, still, now there are some important barriers which need to be tackled by the banks to increase the users of self-service technology of Indian banks.

Keywords: customers, customer-centric, banks, demographic variables, self-service technology

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ACRONYMS

Abbreviation	Explanation
SBI	STATE BANK OF INDIA
HDFC	HOUSING DEVELOPMENT FINANCE CORPORATION
ICICI	INDUSTRIAL CREDIT AND INVESTMENT CORPORATION OF INDIA
ATM	AUTOMATED TELLER MACHINE
SST	SELF-SERVICE TECHNOLOGY
RBI	RESERVE BANK OF INDIA
HSBC	HONGKONG AND SHANGHAI BANKING CORPORATION
DE-MAT	DEMATERIALIZED
UTI	UNIT TRUST OF INDIA
IDBI	INDUSTRIAL DEVELOPMENT BANK OF INDIA

TRAI	TELECOM REGULATORY AUTHORITY OF INDIA
BPL	BELOW POVERTY LINE
SPSS	STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES
WRT	WITH RESPECT TO

1. INTRODUCTION

1. Introduction

1.1 Background

In terms of marketing, the product or offering will be successful if it delivers value and preference to the target buyer. The customer choses between different offerings on the basis of which are perceived to deliver the most value (Kotler, 1999). Customers prefer product or services which they perceive offer the most value. This value is defined as a ratio between what the customer gets and what he gives. Customer delivered value is the difference between the customer value and customer cost (Simon Knox and Stan Maklan, 1998). The customer gets benefits and assumes costs, as shown in this equation:

Value = Benefits/ Costs = Functional benefits + emotional benefits/ Monetary costs + time costs + energy costs + psychic costs

Put it very simply, customer value is created when the perception of benefits received from a transaction exceeds the cost of ownership. The same idea can be expressed as a ratio (Christopher, 1996): Customer value = Perceptions of benefits

The functional benefits could be in terms of products, services, and the response of personnel or image and is the worth in monetary terms of the technical, economic, service, and social benefits a customer or company receives in exchange for the price it pays for a market offering. (James C et al, 1998). This value delivery system also includes all the communications and channel experiences. To meet customer value expectation, companies have to keep an eye on their competitor's performance. A company must, therefore, develop a competitively superior value position and a superior value delivery system (Michael J Lanning, 1998).

1.1.2 Service Industry and Customer's Expectation

The terms 'goods' and 'products' appear to be used interchangeably in much of the literature (Araujo and Spring 2006; Callon 1991, 2002). The service sector is enormously large and varied. It includes banking, transportation, insurance, communication, education, occupation, healthcare, legal service, accounting, tourism, hospitality, and information services. Defining a service is not an easy task and there is no single universally accepted definition of the term. An earlier view of the concept of service was that it was a mere benefit attached to a physical product. Now a major shift has taken place and the concept of service and the service industry has emerged as an industry where it is the services that are the final output of the firms and as such are the products for such firms.

Services are deeds, acts or performances (Berry .L.L, 1980). Services are activities, benefits or preference which are offered for sale, are provided in connection with the sale of good (AMA, 1960). Services can also be defined as the action of an organization that maintains and improves the well-being and functioning of people. (Hasenfield Y, Richard. A., 1974). It means any act or performance that one party can offer to another that is essentially intangible and does not result, in ownership of anything. Its production may or may not be tied to a physical product (Kotler, 1990).

It is therefore imperative for service industries to hinge their focus on customer centricity as the crucial aspect of its business. A service firm may achieve success in the marketplace by delivering higher quality service than competitors and exceeding customer's expectations. The service organization has to identify customer expectation, correctly perceive customer's wants and select the best service delivery channel (Parasuraman, Zeithaml, and Berry, 1985). Customers expect service basics delivered at a level they believe commensurate with the price they pay. Companies have a significant opportunity to improve their service reputations simply by delivering a higher percentage of the time the basic service customers think they are buying. One influence on the adequate service level is the number of service alternatives customers perceive. If customers perceive that they have alternative suppliers from which to choose, their zone of tolerance is likely to be smaller than if they don't feel they have this flexibility.

Customers desire for customized, personalized service as well as closer relationships with the firms. Service firms that seek to exceed customer expectations in order to enhance their quality image should capitalize on the best opportunity for doing so service delivery. It is during delivery, when customers directly experience providers' service skills and "tone," that firms are best able to augment the service core of reliability in ways that are differentiating. In effect, the process dimensions of service play a different role than the outcome dimension of reliability. This is relevant for both services as well as product industry. It is therefore critical to evaluate how service firms can use their resources most effectively to benefit its customers. There is also a need to comprehend customer participation in service delivery by integrating the diverse literature on customer participation, education and problem management.

In doing so, the investigation has to be done regarding the influences of problem management and customer education on customer participation in the service process and customer loyalty. For each of these relationships, important insights for relationship marketing initiatives have to be framed. Specifically, in the context of services, high incredence properties, such as multiproduct financial services, customer education becomes crucial to enhance client participation and loyalty. Finally, there remains a problem of customer education and participation. Financial services may be facing more intense customer service pressure. The substantial costs involved in relationship marketing and the increasing managerial focus on maximizing customers value in more cooperative and long-lasting relationships have to be focused on service firms. (Eisingerich, Andreas Bell, Simon J, 2006).

1.1.3 Technology in Service Industry and Competitive Advantage

Technological development is an essential change which has brought a revolution in the entire service industry. The transformation has led to the emergence of the era of "e-service" (Ronald T Trust and P.K Kannan, 2002). Its main focus is to increase efficiency, save time, reduce cost and cope with the market competition. Firms are making significant investments in information technology to align business strategies, enable innovative functional operations and provide extended enterprise networks. These firms have adopted information technology to foster

changes in managing customer relationships, manufacturing, procurement, the supply chain and all other key activities (Agarwal and Sambamurthy 2002; Barua&Mukhopadhyay 2000). By growing of new technologies, it is important to increase the willingness of people to use new technologies (Meuter et al., 2003). As technology enabled retailing (in the service sector) has grown rapidly worldwide and become globally competitive over the past decade, how to retain existing customers to make repeated purchases (hereafter referred to as repurchase) becomes a more important concern for firms than ever before (Johnson et al. 2008). Among the many influencing factors, trust has been found to be a key predictor of customer retention (e.g., Flavian et al. 2006; Gefen 2002; Qureshi et al. 2009). In today's hyper-competitive e-commerce environment, while customer trust increasingly becomes an essential factor, empirical studies reveal that the presence of trust alone may not be universally sufficient for triggering customer transaction intentions (Gefen and Pavlou 2006; Liu and Goodhue 2012; Van der Heijden et al. 2003).

Technology readiness developed in order to explain how people achieve their goals by adopting technologies (Parasuraman, 2000)

1.1.4 Internet banking: The Concept

Internet banking also termed as online banking, Internet banking or virtual banking, is an electronic payment facility that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website. Online banking refers to the automated delivery of banking products and services to customers through electronic channels. It means provisioning of information and services by a bank to its customers via computer, telephone or television. It can also mean access to the banking services via kiosks or ATMs located in workplaces or at public locations such as an airport or a railway station.

This definition holds good for the retail electronic banking purposes, as it is the scope of the present study (Daniel 1999). Internet banking includes all the services provided by banks through all types of electronic delivery channels such as telephone, internet, cell phone and so on (Uppal, 2007). It is 'providing banking service to the customer at his/her office/home or at any other

place or time wherever the person is- be it traveling, shopping or even in a stadium through the preference of electronic technology' (Sharma, 2007). Banks are now able to process the customer information for a number of purposes. They have the opportunity to market their products and services online and additional financial services like bancassurance can be targeted at the existing customers and prospects, thus facilitating customization to suit the needs of individual customers (Godse, 2005).

This in Indian banking sector has undoubtedly reduced the work pressure among the bankers and also reduced the cost of operation in banks but at the same time led to a mixed bag of feeling among consumers. On one hand, customers feel that self-service technology is convenient, time-saving and flexible and on the other finds lack of security and lack of personal touch. The self-service technology is available through ATM, internet banking or telebanking. Nowadays all banking activities like opening a new account, checking the account balance, fund transfer, depositing or withdrawing money, payment of bills online, buying insurance or any financial products etc can be done through internet banking.

Customers can easily perform the various banking transactions by just a click on the system at any point in time i.e.24x7 facilities available. Self-service technology has reduced the rush of deposit and withdrawal kiosk in the bank. What exactly the customers perceive regarding the preference of self-service technology has to be tapped.

1.1.5 E-Service: It's Focus

E-service focuses on improving service to customers and expanding the market. The primary aim of e-service is to meet the needs of customers and increase revenue. It provides greater opportunity to sell services and build stronger relationships with the customers (Rayport and Sviokla, 1994). To extend customer-centric services to people and remain competitive, new forms of e-services are opening up which provides greater convenience and support services to customers. The adoption of SSTs does not only depends on user needs but also depends on education, society, nature of the user and the interface of SSTs. Values play a vital role in the adoption of technology (Lee et al., 2007: Srite et al., 2006). While few people feel hesitation while using SSTs at the public place and these people feel more comfortable at the

private place. This hesitation of adopting new technology presents in all age groups. (Bashir, Zakria: SPM 2010.01).

1.1.6 Technology Intervention and Banking Industry

Technology adoption is a process that starts with the user becoming aware of the technology and ending with the user embracing the technology and making full use of it (Renauld and Van Biljon, 2008). The rapidly changing business environment of the financial services sector has led to an upsurge in innovation-related activities (Blazevic&Lievens 2004). Information technology plays a fundamental role in a firm's ability to enhance business performance through innovations in products, channels and customer segments (e.g., Sambamurthy et al. 2003). Good innovation practices help enhance a firm's competitive advantage (Afuah 1998; Bharadwaj et al. 1993).

Banking sector which is an integral part of service industry has also not remained untouched. It is now realized that in order to remain competitive and provide the best services to customers, latest technology has to be introduced in financial industry also. In the last two decades, the service industry has witnessed tremendous change. The report of Rangarajan Committee on Mechanisation of Banks, 1984 focused the preference of technology-enabled services in the financial sector. In the mid-nineties, the Institute for Development and Research in Banking Technology (IDRBT), Hyderabad, was fixed up as a research and technology center for the Banking sector. Technological development is an essential change which has brought a revolution in the entire service industry. The technology enabled service delivery mediums are referred as self-service technologies (SSTs). Self-service technologies are defined as any technology interface that enables a customer to produce and consume services without direct assistance from firm employees (Meuter et. al.2000).

In the banking sector, the Rangarajan Committee Recommendations (second - 1989), the Saraf Committee Recommendations (1993) and Vasudevan Committee Recommendations (1998) have played a vital role in the inclusion of technology in the banking processes. The new private sector banks have adopted technology as a competitive tool against the public sector banks. Most of the foreign banks and a few of the old private sector banks have followed the same strategy as the new private banks (Financial Sector Technology Vision Document, 2005, RBI website). It was reiterated by all banks in the post-liberalization era that in order to remain competitive and provide the best services to their customers, need to have the latest technology in place and that technology would be the primary differentiating factor in offering customer-centric services to the customers. Accordingly, irrespective of their ownership status (public sector or private sector), all banks have today leveraged development and deployment of technology to the maximum. ATMs, plastic money, online collection and payment services, smart cards, core banking solutions, branch networking and internet banking are all outcomes of their initiative of technological upgradation (Upadhyay, 2007).

1.1.7 Customization of Technology in the Banking Industry

The first technological change in the banking industry was the introduction of online banking services as Home-link which was fixed up for customers of Bank of Scotland in 1983 by Nottingham Building Society. The system allowed on-line viewing of statements, bank transfers, bill payments etc. Then slowly the banking self-service cropped all over the world. Internet banking was introduced in India in 1996 by ICICI bank with the launch of 'infinity' (Rajneesh De and Padmanabhan, 2002). The introduction of technology-enabled banking service delivery probably started off with HSBC bank introducing ATM for the first time in India way back in 1987 (N. Thamaraiselvan and J.Raja, 2007).

Persuading customers to use new technologies in service encounters is generally more challenging than employees' use of new technologies as far as banks are concerned. In the delivery of the services, since technology can replace a firm's employees, the use of technology is immensely beneficial to the service provider in that it can standardize service delivery, reduce labour costs and expand the options for provisioning of services. On the other hand, it could be wastage of resources if not widely accepted by consumers. Thus, it is essential that we find out

best ways to design, manage and promote new technologies in order to have the best chance of consumer acceptance (Curran and Meuter, 2005)

The various self-service technology that is provided by banks in India includes self-service kiosks for money deposit and withdrawal, online De-mat services, online loan application, online account opening and updating the details, bill payments, tele-banking etc.

Banking today has become flexible and customized, where the consumers themselves participate in banking transactions or queries thereby saving time and avoiding the rush and hassle at the banking counters. The customers can now easily access their banking details from their place of convenience. But apart from these advantages still a part of customers avoid using Self-service technology. There is a range of social, political and economic factors that constrain the use of technology in banking in India by customers. With poor technological infrastructure and connectivity problems in India, customers are skeptical in using online banking. The security factor and lack of personal relationship also play a key role in making the customers skeptical in using online banking.

This thrust on computerization and automation has led to massive investments in the banking sector in India. For instance, as on March 31st, 2005, public sector banks in India had incurred an expenditure of Rs 9,487 crores on computerization and development of communication network (Manoharan, 2007). These and many other technological innovations have contributed to recent changes in the conduct and character of banking immensely, though with challenges. For example, while money-dealing transactions have become cheaper, investment costs have increased and a broader range of services had to be provided. The cost efficiency of banks has also not improved. Also, banks have developed computationally intensive, 'arm's length' techniques to assess creditworthiness and manage risk. Thus, they have been able to generate new revenue streams from lending to individuals and from fees for money market mediation. This shift has signaled a decline in 'relational' banking. Third, new technology and related practices have facilitated the entry of foreign banks into developing countries, where they can exploit 'arm's length', technologically demanding niches in domestic markets. This has not improved the efficiency of host banking systems, nor increased the availability of credit to the productive sector (Costas Lapa visas and Paul Santos, 2008)

1.2 Self-service technology as a Concept

A self-service technology means the use of technology to perform various banking operations by the customers. The new delivery channels such as ATMs, Internet Banking and Telephone Banking along with better access to customer information have reformed the relationship between banks and customers. Banks are now able to process customer information and use it for a number of purposes. They have the opportunity to market their products and services online and additional financial services like bancassurance can be targeted at the existing customers and prospects, thus facilitating customization to suit the needs of individual customers (Godse, 2005). The study investigates important self-service technology - ATMs, Internet banking, and Tele-banking.

1.2.1 Automated Teller Machine

Automated Teller Machine or ATM is a device that allows customers to withdraw cash, or resolve any transactional enquiries, arrange loans and insurance, arrange buying and selling of stocks and advises customers on different savings and investment schemes (Manoharan, 2007). HSBC was the first bank to introduce the ATM concept in India in 1987. The private sector banks have initiated the introduction of ATMs to compete with large public sector banks. ICICI, UTI, HDFC and IDBI together used to account for more than 50% of the ATMs in India about two years ago. ICICI Bank was the first bank to cross the 1000 mark in India (Thamaraiselvan and Raja, 2007).

Today, the current scenario has entirely changed. The public sector banks like SBI, Bank of India, and Union Bank, Allahabad Bank etc are aggressively installing ATMs across the country. It is for certain that ATMs are going to play greater role future. Future ATMs would be more than just cash dispensing machines; they would provide additional value-added services

including several non-banking and non-cash ones (Mohanty, 2007). The common nonbanking services provided by most ATMs are payment of electricity bill, telephone bill, cellular and credit card bill payment, payment of insurance premiums etc. Citibank and ICICI Bank permit transactions relating to mutual fund through ATMs. Citibank ATMs facilitates customers to place orders for demand drafts and fixed deposits. ATM'S of ICICI Bank, IDBI Bank and SBI allow customers to make donations to specific temples or charitable trusts. SBI ATMs allow their customers to pay fees for specified schools or colleges at specified ATM centres, while IDBI ATMs even allows payment for gas bills and subscription payments for selected magazines. Apart from payment services, IDBI ATMs let their customers view news headlines, stock quotes, horoscopes and movies running in theatres (Israni, 2006).

Setting up of ATMs, have enabled banks to shift 50 to 80 percent of their respective cash transactions to this channel. This has resumed in substantial cost savings for the banks as the cost of transactions using ATM is only about 25 to 30 percent of the cost of branch transactions. (Nair, 2005).

1.2.2 Internet Banking

The use of the Internet for providing banking services like obtaining the account balance, payment of utility bills, and transfer of funds, ordering demand drafts, or applying for a loan is referred as Internet Banking. ICICI Bank was the first one to introduce the concept of online banking in 1996 with the launch of 'Infinity'. After ICICI Bank, HDFC Bank, Citibank and IndusInd Bank were the banks to introduce online banking (Rajneesh De and Padmanabhan, 2002). Initially, online banking facility only provided information for queries to the customers but later facilities like fund transfer, preparing demand drafts etc. were introduced. The recommendations of Vasudevan committee on technological upgradation of banks in India also gave impetus to the implementation of internet banking on a large scale (Mann and Sahni, 2007).

Internet banking has several advantages from customer's perspective. It can enable customers to avail banking services from their point of convenience, make 24 x7 banking service available and also save the time of customers since they do not have to waste time in visiting the bank.

It is also seen that Internet banking has several advantages for bankers as well. It helps bankers to reduce the cost of operation by having fewer customers visiting the bank, help economics since there is no investment in employees and also less rush in the bank.

There are certain issues in the preference of Internet Banking. The main issues in internet banking today relate to security, authentication, non-repudiation, internet banking business continuance plan, customer awareness creation about security aspects and security awareness breach detection and reporting. These issues are not only important for the banks but also they are essential to building customer confidence and preference (Kumar et al., 2007). In an emerging economy like India, there are a large number of retail bank customers who are yet to start using this cost effective and convenient delivery channel (Kumar, V. R., & Bose, S. K. 2016).

RBI provided a report in 2001 regarding the banking services offered by Internet Banking. As per the RBI's classification in their Report of Internet banking (2001) the levels of banking services offered through the internet can be categorized into three types:

The basic level service is the banks' websites which disseminate information on different products and services offered to customers and members of the public in general. In the next level are simple transactional websites which allow customers to submit their instructions, applications for different services queries on their account balances etc.; but do not permit any fund-based transactions on their accounts.

1.2.3 Tele banking

Tele-banking is offered by the banks through a technology known as Interactive Voice Response System (IVRS) (Kunjukunju, 2008). In tele-banking, a customer speaks to a phone banking officer for any banking transaction by authenticating his/her identity through a numeric or verbal password or through security questions asked by the banker.

The pioneering bank to offer tele-banking services in India was ICICI bank in the year 1999, followed by HDFC Bank and IDBI bank (Aithal, 2008). Among public sector banks, State Bank of India, Bank of Baroda and Corporation Bank are the one which has started offering this service to their customers.

According to TRAI telecom subscription report, March 2016 saw 7 million new mobile subscribers added on various telecom networks. The number of mobile subscribers has become 405.18 percent of the basic landline subscribers as on March 31, 2007 (Srivastava, 2008).

Hence it was, needed to introduce tele-banking. Tele-banking refers to providing banking and financial services through the mobile technology.

Services such as account balance enquiry, account statement enquiry, cheque status enquiry, cheque book request, fund transfer between accounts, credit/debit alerts, minimum balance alerts, bill payment alerts, bill payments, recent transaction history, information requests on interest rates/ exchange rates etc. are offered through tele banking.

1.3 Relevance of the study

The needs and preference of customers have been analyzed to benefit the customers as well as the banks. While the study would help reconfigure internet banking strategies by making selfservice technology more customer-centric, it would help understand customer needs and enhance customer preference successfully. A comparative analysis of public and private sector banks would also help to appreciate the newer perspectives w.r.t. self-service and meet emerging customer needs most effectively. The study also provides a recommendation on how these selfservice technologies can enhance customer perceptions regarding quality and preference so that customers move less to banks thereby decreasing the operational cost of the bank.

As preference of self-service technology would reduce the cost of operations and rush in the bank since the lesser customer would visit the bank for the various services, this study would be helpful to the banking industry with regards to self-service technology.

The study would also enable bank officials in identifying the appropriate demographic segments where the self-service technology is widely adopted. The practicing bank managers

and officials can frame effective strategies for making the adoption level of self-service technology high. The study will help to make the self-service technology more customer-centric in relation to customer quality and preference. It will help to examine how these self-service technologies can enhance customer perceptions regarding quality and preference.

1.4 Area of Research

The study explores the customer preference towards self-service technology in Indian banking sector and compares the public and private sector banks in Jharkhand. This is done by identifying the appropriate demographic segments where the self-service technology has still been adopted widely by customers. The self-service technology which has been taken into consideration is ATM services, internet banking and telebanking services.

The study also strives to comprehend the difference in preferences of customers, if any, between public sector banks (SBI and Bank of India) and private sector banks (HDFC & ICICI) in Jharkhand regarding the self-service technology. SBI and Bank of India have been taken under public sector banks and HDFC and ICICI Bank as private sector banks.

The reason for selecting the above-mentioned banks is:

1. SBI has been ranked the top bank in India based on tier 1 capital by "The Banker magazine" in 2014.

2. Bank of India focuses on the choice of Corporate, Medium Business and Upmarket Retail Customers and Developmental Banking for Small Business, Mass Market and Rural Markets."

3. ICICI Bank is the biggest private sector bank and has been the first bank to launch the concept of online banking in 1996 called - 'Infinity'.

4. HDFC Bank's vision is to build sound customer franchises across distinct businesses so as to be the preferred provider of banking services for target retail and wholesale customer segments, and to achieve heath growth in profitability, consistent with the bank's risk appetite.

It is observed that the vision of all the selected banks is found on the objective of customer's preference, and winning a stand in the competitive market. In this study, the need of the customers has been analyzed to reconfigure internet banking strategies so that the facilities could be more customer-centric in relation to customer quality and preference. The focus is also to identify appropriate demographic segments where the self-service technology has still not been widely adopted. It also studies the difference in customers' preference if any, between public sector banks (SBI and Bank of India) and private sector banks (HDFC & ICICI) in Jharkhand regarding the self-service technology.

1.5 Chapter Scheme

Chapter one: It deals with the executive summary, the introduction to the study, its background, the relevance of the study.

Chapter two: It deals with the literature review which contributed towards this research.

Chapter three: It deals with the research objectives and the hypothesis of the research.

Chapter four: This chapter deals with the research design and methodology that has been used for this study.

Chapter five: It deals with the analysis of the data collected and findings from the present study.

Chapter six: It contains suggestions, conclusion and scope for further research.

1.6 Conclusion

This study finds out the demographic factors that influence the adoption self-service technology like ATMs, internet banking, telebanking and internet banking in Jharkhand. The study analyses the adoption pattern of self-service technology.

The study helps to identify appropriate demographic segments where the self-service technology is still not widely adopted in Indian banking sector and provide the areas for improvements of the services by banks. Accordingly, suggestions have been given to improve the adoption level of the self-service technology. It could be helpful for bank management in India to improve the self-service technology.

Initiatives are not only taken by the private banks and foreign banks but public sector banks are also providing and improving the self-service technology.

2. BACKGROUND AND CONTRIBUTION FROM EXISTING LITERATURE

2. Background and Contribution from Existing Literature

2.1 Overview

Studies have been done regarding self-service technology or technologies. Even a large number of researches have already been conducted regarding the factors that affect customer's preference regarding online banking in India. The research work that was related to my topic which helped me in my research work was regarding expectation on what customers expect in the technology of self-service technology by Bitner, M.J. (2001), "Self-service technologies: what do customers expect?", (Marketing Management, Vol. 10 No. 1, pp. 10-11.) Another study related to my topic was "Role of consumer personality in determining preference for online banking in India" NijagunaRudrayyaBhusnur,Richa Sharma, May 2006. Another study was on Implementation of effective self-service technologies has been dealt by Bitner, M.J., Ostrom, A.L., Meuter, M.L., (2002) -"Implementing successful self-service technologies", Academy of Management Executive 16 (4), pp 96-109; which was quite relevant to my topic. Another study regarding comparison of public sector and private sector bank was done by N Bajpai, D Srivastava -Singapore Management Review, 2004; PS Budhwar, G Boyne - The International Journal of Human, 2004; TTR Mohan - Economic and Political weekly, 2002; have also been done regarding the comparative study of several areas and services like HR, performance management of public sector and private sector banks. In the recent years there has been explosion of Internet based electronic banking applications (Liao & Cheung, 2003). Beckett, Hewer & Howcroft (2000) states that the emergence of new forms of technology has created highly competitive market conditions for bank providers. However, the changed market conditions demand for banks to better understanding of consumers' needs.
2.2 Services

Services are deeds, acts or performances (Berry .L.L, 1980). Services are activities, benefits or preference which are offered for sale, are provided in connection with sale of good (AMA, 1960). Services can also be defined as action of the organization that maintains and improves the well-being and functioning of people. (Hasenfield Y, Richard. A., 1974). It means any act or performance that one party can offer to another that is essentially intangible and does not result in ownership of anything. Its production may or may not be tied to a physical product (Kotler, 1990). Services can be defined as action of organization that maintains and improves the wellbeing and functioning of people (Hasenfield Y, Richard. A., 1974). Services are activities, benefits or preference which are offered for sale, are provided in connection with sale of good (AMA, 1960). "Intangibility, heterogeneity and inseparability" distinguish services from physical goods (Parasuram et al., 1985). It means any act or performance that one party can offer to another that is essentially intangible and does not result in ownership of anything. Its production may or may not be tied to a physical product (Kotler, 1990). Because of this heterogeneity in services, ensuring quality in services becomes difficult as a number of uncontrollable factors are involved such as moods and emotions of customers (Zeithmal and Bitner, 2000; Lovelock, 1996). This challenge is also applicable in case of Banking Industry also. The services cannot be mass produced, as evident in the context of branch banking in which the customers are offered services only during the banking hours and the resulting crowding and queuing in the bank branches (Parasuram et al., 1985). Services have to be customized; hence mass production cannot be done in case of services. Since customers do have some role to play in service production, they can rightly be considered as 'partial employees' of a service firm and they are contributors to their own preference and service quality perception (Zeithmal and Bitner, 2000; Mills and Morris, 1986). An important implication of delivery of services by employees is that, the services cannot be mass produced, as evident in the context of branch banking in which the customers are offered services only during the banking hours and the resulting crowding and queuing in the bank branches (Parasuram et al., 1985). The service organization has to identify customer expectation, correctly perceive customer's wants and select the best service delivery

channel (Parasuraman, Zeithaml and Berry, 1985). As many innovation activities involve adding new services, expanding existing ones and/or improving the service delivery process, the success of an organization hinges on how well it implements its service innovation (Berry et al. 2006) to create new markets. According to Parasuraman et al. (1988) service quality could be defined as the overall evaluation of a service firm that results from comparing that firm's performance as perceived by its customers with their general expectations of how firms in that industry should perform.

2.3 Customer's preference and expectations

In today's hyper-competitive e-commerce environment, while customer's trust increasingly becomes an essential factor, empirical studies reveal that the presence of trust alone may not be universally sufficient for triggering customer transaction intentions (Gefen and Pavlou 2006; Liu and Goodhue 2012; Van der Heijden et al. 2003). Business enterprises must seek to reach out to the customers and offer products and services that people want and value them at prices that are more attractive than those of the competitors (Levitt, 1961), in the most innovative and best possible manner. It is equally important to understand customer expectations as a pre-requisite for delivering superior service (Parasuraman A, Berry LL. Zeithaml V A, 1991). The customer chooses between different offerings on the basis of which is perceived to deliver the most value (Kotler, 1999). Customer delivered value is the difference between the total customer value and total customer cost (Simon Knox and Stan Maklan, 1998). Customer Value can be expressed as a ratio (Christopher, 1996): Customer value = Perceptions of benefits. The functional benefits could be in terms of products, services, response of personnel or image and is the worth in monetary terms of the technical, economic, service, and social benefits a customer company receives in exchange for the price it pays for a market offering. (James C et al, 1998). This value delivery system also includes all the communications and channel experiences. To meet customer value expectation, companies have to keep an eye on their competitor's performance. A company must therefore develop a competitively superior value position and a superior value delivery system (Michael J Lanning, 1998). The service organization has to identify customer expectation, correctly perceive customer's wants and select the best service delivery channel (Parasuraman, Zeithaml and Berry, 1985). The substantial costs involved in relationship

marketing and the increasing managerial focus on maximising customers value in more cooperative and long-lasting relationships has to be focussed in service firms. (Eisingerich, Andreas Bell, Simon J, 2006). Among the many influencing factors, trust has been found to be a key predictor for customer retention (e.g., Flavian et al. 2006; Gefen 2002; Qureshi et al. 2009). Ease of use is the extent to which a user finds the preference of a technology-enabled service free of effort as propounded by Davis et al. (1989).In his work, Davis extended the attitude towards behavior (B) and behavioral-intention (BI) relationship established in Theory of Reasoned Action (TRA), to the adoption of computers in workplace (Davis et al., 1989)



Figure 2.3.1 Technology Acceptance Model (TAM)

2.4 Technology enabled Self- service facilities

Technological development is an essential change which has brought a revolution in the entire service industry. The transformation has led to the emergence of the era of "e-service" (Ronald T Trust and P.K Kannan, 2002). Information technology plays a fundamental role in a firm's ability to enhance business performance through innovations in products, channels and customer segments (e.g., Sambamurthy et al. 2003). Good innovation practices help enhance a firm's competitive advantage (Afuah 1998;Bharadwaj et al. 1993). Technology adoption is a process that starts with the user becoming aware of the technology and ending with the user embracing the technology and making full use of it (Renauld and Van Biljon, 2008). The rapidly changing

business environment of the financial services sector has led to an upsurge in innovation-related activities (Blazevic&Lievens 2004). Banks have adopted information technology to foster changes in managing customer relationships, manufacturing, procurement, the supply chain and all other key activities (Agarwal and Sambamurthy 2002; Barua&Mukhopadhyay 2000). By growing of new technologies, it is important to increase willingness of people to use new technologies (Meuter et al., 2003). As technology enabled retailing (in the service sector) has grown rapidly worldwide and become globally competitive over the past decade, how to retain existing customers to make repeated purchases (hereafter referred to as repurchase) becomes a more important concern for firms than ever before (Johnson et al. 2008). Technology readiness developed in order to explain how people achieve their goals byadopting technologies (Parasuraman, 2000). It is essential that we find out best ways to design, manage and promote new technologies in order to have the best chance of consumer acceptance (Curran and Meuter, 2005). Telebanking is offered by the banks through a technology known as Interactive Voice Response System (IVRS)(Kunjukunju, 2008). After internet banking, tele-banking was introduced. The pioneering bank to offer internet banking services in India was ICICI bank in the year 1999, followed by HDFC bank and IDBI bank (Aithal, 2008)

Online banking or Electronic banking (Internet banking) involves the automated delivery of new and traditional banking products and services directly to customers through electronic channels. It means provisioning of information and services by a bank to its customers via computer, telephone or television. It can also mean access to the banking services via kiosks or ATMs located in work places or at public locations such as an airport or a railway station. This definition holds good for the retail electronic banking purposes, as it is the scope of the present study (Daniel 1999). Internet banking include all the services provided by banks through all types of electronic delivery channels such as telephone, internet, cell phone and so on (Uppal 2007). It is 'providing banking service to customer at his/her office/home or at any other place or time wherever the person is- be it travelling , shopping or even in a stadium through the preference of electronic technology'(Sharma,2007). The primary aim of e-service is to meet the needs of customers and increase in revenue. It provides greater opportunity to sell services and build stronger relationships with the customers (Rayport and Sviokla, 1994). ATMs, plastic money, online collection and payment services, electronic fund transfer and clearing services, mobile ATMs, document management systems, smart cards, core banking solutions, branch

networking and internet banking are all outcomes of their initiative of technological upgradation (Upadhyay, 2007). Automated Teller Machine or ATM is a device that allows customers to withdraw cash, or resolve any transactional enquiries, arrange loans and insurance, arrange buying and selling of stocks and advise customers on different savings and investment schemes (Manoharan, 2007). Internet banking was introduced in India in 1996 by ICICI bank with the launch of 'infinity' (Rajneesh De and Padmanabhan, 2002). ICICI Bank was the first bank to cross the 1000 mark in India (Thamaraiselvan and Raja, 2007). After ICICI Bank, HDFC Bank Citibank and IndusInd Bank were the banks to introduce online banking (Rajneesh De and Padmanabhan, 2002). Future ATMs would be more than just cash dispensing machines; they would provide additional value added services including several non-banking and non-cash ones (Mohanty, 2007). IDBI ATMs let their customers view news headlines, stock quotes, horoscopes and movies running at theatres (Israni, 2006). Setting up of ATMs, have enabled banks to shift 50 to 80 percent of their respective cash transactions to this channel. This has resulted in a substantial cost savings for the banks as the cost of transactions using ATM is only about 25 to 30 percent of the cost of branch transactions.(Nair, 2005). The introduction of technologyenabled banking service delivery probably started off with HSBC bank introducing ATM for the first time in India way back in 1987 (N. Thamaraiselvan and J.Raja, 2007). Public sector banks in India had incurred an expenditure of Rs 9,487 crores on computerization and development of communication network (Manoharan, 2007).

2.5 Findings from previous studies on customer's preference towards self-service facilities

The adoption of SSTs do not only depends on user needs but also depends on culture, education, society, nature of the user and the interface of SSTs. Culture and values play vital role for adoption of technology (Lee et al., 2007: Srite et al., 2006). While few people feel hesitation while using SSTs at public place and these people feel more comfortable at private place. This hesitation of adopting new technology presents in all age groups. (Bashir, Zakria: SPM 2010.01). Demographic factors do influence adoption of banking delivery channels. These demographic characteristics were categorized under the individual differences variables in the study by Meuter

at al. (2005). It is found that customers who are younger, more educated and wealthier are more likely to use internet banking (Sathye,1999; Mattila et al., 2001; Karjaluoto et al., 2001). Perceived attributes or characteristics of the self-services through the technology-enabled channels by the customers determine whether they adopt the services through them or not (Rugimbana, 1995; Lockett and Littler, 1997; Polatoglu and Ekin, 2001; Gerrad and Cunningham, 2003; Erickson et al., 2005; Laforet and Li, 2005; Wan et al., 2005). Prior experience with computers, internet and technology products also had an influence on adoption and level of preference of these electronic banking services (Mattila, 2001; Karjaluoto et al., 2002; Gerrard and Cunnigham 2003; Lassar et al., 2005). Customers who had prior experience with computers (Mattila et al., 2001; Karjaluoto et al., 2002), high P C proficiency (Jayawardhena and Foley, 2000), and comfortable with internet preference (Black et al., 2001) would take to online banking faster. Risk has been identified as important innovation characteristic in the study on the adoption of phone banking by Locket and Littler (1997). Perceived Usefulness (PU) is defined (Doll et al., 1998) as "the extent to which a person finds that using a system will enhance his/her job performance".

A systematic review of internet banking adoption- Telematics and informatics has been done by Hanafizadeh, P., Keating, B. W., &Khedmatgozar, H. R. (2014). Service quality analysis of cooperative banks with a particular reference to Jharkhand (Ahmad, M. K., 2015) provides relevant information regarding the service quality of banks. There are a large number of retail bank customers who are yet to start using this cost effective and convenient delivery channel (Kumar, V. R., & Bose, S. K. 2016). A unified theory of acceptance and use of technology and perceived risk application has been suggested by Martins, C., Oliveira, T., &Popovič, A. (2014). Despite the rapid growth of Internet banking (IB), customers in developing countries still hesitate to adopt this technology and its use inthe Middle East remains low (A., Dwivedi., & Williams, M. D. (2015). The impact of technology anxiety on the intention to use a self-service technology (SST) in public has been well described by Gelbrich, K., & Sattler, B. (2014).

Sl. No.	Title of the paper	Literature Type	Author/s	Publishin g year	Gist of points gained	Linkage to research	Remarks
1.	Innovatio n in banking at ICICI bank	Article	Parmeswa r,N.Dhir	2016	Focus was on fast growing technolog y including smart phones technolog y including smart phones	Understa nding internet banking	
2	Adoption of technolog y-enabled banking self-	Book	Joshua A. J.	2011	Focused on preferenc epattern of SST's	For Adoption of Internet banking	Very helpful

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3	"Consum er perceptio ns of transactio n security, transactio n accuracy" , JIBC	Journal	Liao et al.	2010	Perceptio ns of transactio n security	Understa nding the perceptio ns of transactio n security	
	2010						
	Vol. 15,						
	No.2 - 4						

4	Adoption of internet banking among sophistica ted consumer segments in an advanced developin g country", Internatio nal Journal of Bank Marketin g, 22 (3), 212-32.	Research paper	Akinci, S., Aksoy, S. and Atılgan, E.	2010	Segmenta tion of consumer s	Preferenc e of internet banking among sophistica ted consumer	
5		Article	Neha Dixit	2010	Internet banking acceptabi lity in India	Helpful in framing the methodol ogy	

	Adoption of technolog y-enabled banking: An Empirical Investigat ion in India" Journal of Internet Banking and Commerc e, August 2010, vol. 15, no.2						
6	Human resource managem ent in the Indian public an d private sectors: an empirical comparis on	Journal	Taylor & Francis	2007	Comparis on between private and public banks	Analyzin g public and private sector banks	Helpful in understan ding the basics of comparis on

 Encoura, ing existing custome: s switch self- service technolo ies: put little fu: in the lives. Journal Marketir g Theo and Practice, 15 (4) 	urag ng ner to to n to h to blog ut a fun their al of etin neory ce, (4), 98.	Curran, M. James and Meuter, L. Matthew	2007	Encourag ing SST's	Important ce and benefits of self- service technolog ies	
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8	Internet banking market performa nce: Turkey versus the UK. Internatio nal Journal of Bank Marketin g, 25 (3), 122-141.	Article	Sayar, C. and Wolfe, S.	2007	Comparat ive study of Internet banking between Turkey and US	Understa nding electronic banking outside India	
9	Creating new markets through service innovatio n. Sloan Managem ent Review, 47(2), pp. 56-63.	Article	Berry, L.L., Shankar, V., Parish, J.T., Cadwalla der, S. & Dotzel, T.	2006	Service Marketin g concept	Framing the introducti on	Useful

10	Deregulat ion and performa nce of public sector banks- Economi c and Political weekly, - JSTOR	Journal	TTR Mohan	2004	Public sector bank operation	Analyzin g public sector bank	
11	Sectorial comparis on of factors influenci ng job preferenc e in Indian banking sector - Singapor e Managem ent Review, - brainmas s.com	Review	N Bajpai, D Srivastav A	2004	Comparis on between private and public banks	Analyzin g public and private sector banks	

12	Comparat ive analysis of public sector and private sector banks" ,Singapor e Managem ent Review,	Review	N Bajpai, D Srivastav a	2004	Comparat ive analysis of public sector and private sector banks	Comparis on of both the sectors	
13	Trends in South African internet banking. Aslib Proceedin gs, 56 (3), 187-9	Article	Singh, A.M.	2004	Internet banking in South Africa	Understa nding electronic banking outside India	

14	Internet banking adoption among adult customer s: early majority or laggards? Journal of Services Marketin g, 17 (5), 514-28.	Research paper	Mattila, M., Karjaluot o, H. and Pento, T.	2003	Adoption of internet banking	For Adoption of Internet banking among customer s	
15	Barriers to internet banking adoption: a	Journal	Rotchana kitumnua i, S. and Spence, M.	2003	Internet banking adoption in Thailand	Understa nding electronic banking outside India	

	Quantitati ve study among corporate customer s in Thailand. Internatio nal Journal of Bank Marketin g, 21 (6/7), 312-23.						
16	Trustwort hiness in electronic commerc e: the role of privacy, security, and site attributes.	Journal	Belanger, F., Hiller, J.S. and Smith, W.J.	2002	Trustwort hiness in electronic commerc e	Understa nding the various attributes and aspects such as security, cost etc for self service facilities.	

17	Impleme nting successfu l self- service technolog ies. Academy of Managem ent	Journal	Bitner, M.J, Ostrom, A.L Meuter, M.L	2002	Impleme ntation of SST's	Concept of effective Self- service technolog y	Useful
	Executive 16 (4), pp 96-109.						
18	service technolog ies: what do customer s expect?", Marketin g Managem ent, Vol. 10 No. 1, pp. 10-11	Article	Bitner, M.J.	2001	Expectati on of customer s	Understa nding customer' s expectati on for self- service technolog y	Very helpful

19	banking: a field study of drivers, developm ent challenge s, and expectati ons", Internatio nal Journal of Informati on Managem ent, 213- 225.	Journal	Aladwani , M. Adel	2001	Backgrou nd of online banking	Understa nding the challenge s, and expectati ons of online banking	
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20	Trust in internet shopping: instrumen t developm ent and validation through classical and modern approach es. Journal of Global Informati on Managem ent. 9 (3), 23-35	Journal	Cheung, C. and Lee, M.	2001	Trust in internet shopping	The importan ce of trust factor in preferenc e of technolog y	
	23-35.						
21	An empirical investigat ion of the Turkish consumer s'	Research paper	Polatoglu , V. and Ekin, S.	2001	Acceptan ce of Internet banking in Turkey	For Adoption of Internet banking among customer s outside India	

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22	"Time flies when you're having fun: cognitive absorptio n and beliefs about informati on technolog y preferenc e", MIS Vol. 24	Research paper	Agarwal, R. and Karahann a, E.	2000	Perceptio n of consumer s	Understa nding consumer 's perceptio n for technolog y	
	No. 4, pp. 665-94.						
23	An expositio n of consumer behavior in the financial services industry. The Internatio	Journal	Beckett, A., Hewer, P., &Howcro ft, B	2000	Consume r behavior	Understa nding the consumer behavior in the financial services industry.	

	nal Journal of Bank Marketin g, 18(1). Barriers to putting businesse						
24	s on the internet in Malaysia. The Electroni c Journal of Informati on Systems in Developi ng Countries , 2(6), 1- 6.	Research paper	Mukti, N.	2000	E- business in Malaysia	Understa nding electronic banking outside India	

	Consume r education programs		Oumlil,		How to	Understa	
25	for adult consumer s. Journal of Services Marketin g, 14 (3), 232-43.	Article	A.B., Williams, A.J. and Oumlil, L.	2000	aware consumer regarding SST's	nding consumer 's behavior	
26	Global Electroni c Commerc e Process: Business to Business. in Hackney, R. and Dunn Dennis (Eds.): Business Informati on Technolo gy Managem ent: Alternati ve and Adaptive Futures, 87-105, Macmilla n Press	Book	Nahar, N., Huda, N. and Tepandi, J.	2000	Acceptan ce of Internet banking globally	For Adoption of Internet banking among customer s outside India	

	Limited, Great Britain.						
27	Principles of Marketin g (Prentice Hall)	Book	· Philip Kotler	1999	Marketin g in service industry	Basics of service industry	
28	Provision of electronic banking in the UK and the Republic of Ireland. Internatio nal Journal of Bank Marketin g, 17(2), 72-82.	Article	Daniel, E.	1999	E banking in UK	Understa nding electronic banking outside India	

29	Business use of the World Wide Web. Internatio nal Journal of Informati on Managem ent, 16 (2), 83- 102	Article	Cockburn , C. and Wilson, T.	1996	Benefit of WWW	Importan ce and benefits of self- service technolog ies	
30	A Conceptu al Model of Service Quality and Its Implicati ons for Future Research, Journal of Marketin g, Fall 1985, pp. 41-50	Article- Journal	Parasura man, V.A. Zeithaml, and L.L. Berry	1985	Emphasis on service quality	Focus on service concept	Helpful

31	"Leisure Activities and Perceived Risk", Journal of Leisure Research, 14(2), pp. 139-154.	Journal	Cheron, E.J.and Ritchie	1982	Risk perceiven ess	Understa nding the element of risk in preferenc e of self- service technolog	
32	The Employe e as Customer ", Journal of Retail Banking, Vol 3 March 1981, pp. 33-40.	Article	Berry l.l	1981	Reflected on conseque nces of SST's	y Concept of Self service facilities	
33	"Self- Efficacy: Toward a Unifying Theory of Behavioral Change." Psycholog ical Review 84:191- 215.	Book	Bandura, Albert	1977	Behavior pattern of consumer s	Understa nding consumer 's behavior	

34	"Manage mentTask s, Responsi bilities, Practices, "(New York:Har per and Row,197 3	Book	Peter Drucker	1973	Practices in service industry	Service marketin g concept	
35	Risk Taking and informati on Handling in Consume r Behavior. Harvard Universit y Press, Cambridg e, MA	Book	Bauer, R	1967	Risk Taking and informati on Handling attitude of customer s	Understa nding attitude of consumer s	

Table 1: 2.5.1 Documentation of Literature Review

2.5.1 Identifying gap on the basis of Literature review

Literature review indicates several areas which deserve immediate attention with respect to the self-service technology in Indian banking sector. These gaps may be enumerated. Research has been done on role of consumer personality in determining preference for online banking in India. (NijagunaRudrayyaBhusnurRicha Sharma, May 2006) but what customers prefer in Indian banking sector has still been untouched.

Many studies (N Bajpai, D Srivastava - Singapore Management Review, 2004; PS Budhwar, G Boyne - The International Journal of Human, 2004; TTR Mohan - Economic and Political weekly, 2002) have also been done regarding the comparative study of several areas and services like HR, performance management between public sector and private sector banks. The review of literature suggest that most of the studies have been done on issues related to Internet banking in countries like Australia (Sathye, 1999), Malaysia (Mukti, 2000; Chung and Paynter, 2002; Sohail and Shanmugham 2004), Singapore (Gerrard and Cunningham, 2003a, 2006b) and Turkey UK (Sayar and Wolfe, 2007). But the area regarding customers' preference and the key factors affecting the preference regarding self-service technology particularly in Jharkhand, has been untouched.

2.6 Conclusion

As technology enabled retailing (in the service sector) has grown rapidly worldwide and become globally competitive over the past decade, how to retain existing customers to make repeated purchases (hereafter referred to as repurchase) becomes a more important concern for firms than ever before (Johnson et al. 2008). Banks have the opportunity to market their products and services online and additional financial services like bancassurance can be targeted at the existing customers and prospects, thus facilitating customization. The recommendations of Vasudevan committee on technological upgradation of banks in India also gave impetus to the implementation of internet banking on a large scale (Mann and Sahni, 2007). Most of the foreign banks and a few of the old private sector banks have followed the same strategy as the new private banks (Financial Sector Technology Vision Document, 2005, RBI website). New technology and related practices have facilitated the entry of foreign banks into developing countries, where they can exploit 'arm's length', technologically demanding niches in domestic

markets. This has not improved the efficiency of host banking systems, nor increased the availability of credit to the productive sector (Costas Lapavitsas and Paul Santos, 2008). The main issues in internet banking today relate to security, authentication, non-repudiation, internet banking business continuance plan, customer awareness creation about security aspects and security awareness breach detection and reporting. These issues are not only important for the banks but also they are essential to build customer confidence and preference (Kumar et al., 2007). Measures are essential to resolve the issues regarding internet banking as there is increased threat of phishing or online identity theft according to a study by Gartner, as cited by Balaraju and Balakrishnan (2008). The studies by Parameswar, N., Dhir, S., &Dhir, S. (2017)also provided relevant information regarding innovation in ICICI bank (Global Business and Organizational Excellence, 36(2), 6-16)

The present research intends to find the preference of the customers for self-service technologies in banks. This research helps in identifying appropriate demographic segments where the self-service technology is still not widely adopted in Indian Banking Sector. It also helps in finding the difference in preferences of customers, if any, between public sector banks (SBI and Bank of India) and private sector banks (HDFC & ICICI) in Jharkhandregarding the self-service technology.

3. OBJECTIVES AND HYPOTHESIS

3. Objectives and Hypothesis

3.1 Objectives of the study

Research Objectives have evolved from research problem statements, research gaps and have been developed for this research, after an in-depth study of the domain and review of literature, detailed in chapter 3. The research objectives have been developed accordingly and are as follows:

The first objective is to study and analyze the demographic factors influencing preferences for self-service technology with reference to banking sector in Jharkhand. The various demographic factors taken into consideration are gender, age, educational qualification and occupation. Categorization of demographic variables has been done with the help of review of literature survey and valued opinion of experts from the banking sector.

The other objective is to compare customer's preference for sector-wise banks in Jharkhand. Convenience to use with reference to location, time, cost, comfort, security and user friendliness of public and private sector banks is also compared to find the difference between the preference levels of customers of both the banks.

3.2 Hypotheses

In order to achieve the above mentioned objectives, seventeen hypotheses have been formulated, which will be tested. The hypotheses are mentioned below:

H1: Gender influences the customer'spreference towards self-service technology.

H2: Age influences the customer's preference towards self-service technology.

H3: Educational qualification influences thecustomer's preference towards self-service technology.

H4: Occupation influences the customer's preference towards self-service technology.

H5: Convenience influences preference for self-service technology for private bank customers.

H6: Convenience influences preference for self-service technology for public bank customers

H7: Time saving aspect influences preference for self-service technology for private bank customers.

H8: Time saving aspect influences preference for self-service technology for public bank customers.

H9: Cost influences preference for self-service technology for private bank customers

H10: Cost influences preference for self-service technology for public bank customers

H11: Comfort influences preference for self-service technology for private bank customers

H12: Comfort influences preference for self-service technology for public bank customers

H13: Security influences preference for self-service technology for private bank customers

H14: Security influences preference for self-service technology for public bank customers

H15: Human interfaces influence preference for self-service technology for private bank customers

H16: Human interfaces influence preference for self-service technology for public bank customers

H17: The customer's preference of public sector bank is not different(same) to the customer's preference of private sector bank.

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For objective 1 i.e to analyze the demographic factors influencing preferences for self-service technology; hypothesis 1, 2, 3 and 4 have been formulated. The demographic variables used for this study are gender, age, education qualification and occupation.

To analyze objective 2; i.e to compare retail customers preference towards self-service technology in public and private sector banks of Jharkhand, hypothesis 5 to 17 have been framed. Aspects such as convenience to use with reference to location, time, cost, comfort, security and user friendliness i.e human interface has been compared. Hypothesis 17 draws overall comparative analysis between preference of retail self-service customers of public and private banks in Jharkhand. The frequency of usage of self-service facilities of both the groups has been compared.

The frequency has been segregated as every day, once or twice a week, fortnightly, monthly and rarely.

3.3 Summary

This chapter gives a brief idea about the research objectives fixed, based upon the research gaps and the problem statement identified in the last chapter. Also, the hypotheses formulated for the research project were detailed out in this chapter.

4. RESEARCH METHODOLOGY

4. Research Methodology

4.1 Overview/Summary

Research Methodology adopted for this research is defined. Also thesources of data, sampling technique, Research Instrument, Reliability Analysis and Conclusion have been discussed.

4.2 Design of the study

The type of research used is Ex-post facto and empirical research. Mixed methods approach has been followed in this research. Both qualitative and quantitative research design approach has been adopted for achieving the objective of the research.

4.3 Source of Data

The present research uses primary and secondary data. Data was collected from the following urban branches and semi-urban branches of Jharkhand - Ranchi, Jamshedpur, Hazaribagh, Bokaro, Deoghar, Dumka, Dhanbad, Koderma, Ramgarh and Giridih. The secondary data sources contained of the published readings. Primary data was collected through direct contact method.

4.4 Sampling Design

The customer was sampled according to random sampling and conveniencesampling. The final sample size is 400 i.e. 100 from each bank.

Determined Sample Size (95% confidence level): 366 (Rounded as 400).

4.5 Research Instrument

The questionnaire was prepared after pilot study.

The first part consists of all the general demographic features of the respondents and their identity as follows:

Gender - in two classes namely, male and female.

Age - grouped into four classes, 18 - 25, 26 - 35, 36 - 45, 45-60 and 60 above

Educational qualification - 10th, 12th, graduation, post-graduation and Professional degree.

Occupation - in four classes namely salaried, self-employed, student, housewife, service, and others,

The other part includes questions relating to the frequency, awareness and the duration of SST's. The frequency of branch may reveal that customers visiting banks uses less electronic banking services

Likert- scale has been used to measure the customer preference level for the following aspects:

- Convenience to use
- Time
- Cost
- Comfort
- Security
- Human interface (Personal touch)

The questionnaire is given in the Annexure - I.
4.6 Reliability Analysis

Before preparing the questionnaire, bank officials from the sampled banks were interviewed to understand the present position of preference of SST's. The following table reveals theinformation gathered from bank officials before preparingquestionnaire.

Table 4.6.1 Information gathered from Bank Officials before preparing questionnaire

Sl no	Questions	SBI	BANK OF INDIA	HDFC BANK	ICICI BANK
1	How many percent of customers use self-service Technology?	40	22	85	77
2	Issues and challenges	Customers are not technology savvy	Lack of awareness &skeptical for security reason	Cyber crime	technical failure and cyber crime
3	Ratio of male: female using SST's	70% male 30% female	No data available	50% male 50% female	60% male 40% female
4	suggestion/opinion	Training for customers and cannot force the BPL customers to use SST's	Awareness level should be increased and customer- employee interaction required	Relationship manager hired for customers	Female training required

The questionnaire was validated by experts from banking sector.

Dimensions	Constructs	Cronbach's alpha score
ATM	Convenience	
	Time saving	0.852
	Cost	
	Comfort	
	Security	
	Better than human interface i.e	
	bankers	
Internet Banking	Convenience	
	Time saving	0.779
	Cost	
	Comfort	
	Security	
	Better than human interface i.e	
	bankers	
Telebanking	Convenience	
	Time saving	0.752
	Cost	
	Comfort	1
	Security	1
	Better than human interface i.e	
	bankers	

Table 4.6.2 Cronbach's Alpha Score for the different constructs of the factors used in the Questionnaire

Source: SPSS output

4.7 Statistical Techniques

Hypothesis has been tested using one way ANOVA, Independent sample T-Test and descriptive study.

4.8Summary

Pilot study was conducted initially before finalizing with the research design and also questionnaire design. Thereafter proper statistical tool was used for testing the hypothesis.

5. DATA ANALYSIS AND FINDINGS

5. Data Analysis and Findings

5.1 Overview/Summary

The research was done to analyze the demographic factors influencing preference for selfservice technology with reference to banking sector in Jharkhand. It also studies the difference in preference of customers, if any, regarding the self-service technology. Seventeen hypotheses were tested for this research. The sample population for this research is Three crore twenty nine lakhs one thousand and fifty. (Report provided by 43 rd Meeting of State level Bankers' Committee, Jharkhand).

Demographic profile of respondents:

The population involved 55 percent males and 45 percent females signifying that men might use self-service technology more than women.



Fig: 5.1.1: Gender-wise comparison of preference of Self-service Technology

Age-wise comparison between the sampled respondents shows that the self-service technology is more used by the younger population less than 35 years of age.



Fig: 5.1.2: Age-wise comparison of preference of Self-service Technology

Education qualification wise comparisonshows that graduates and above are using more of self-service technology.



Fig: 5.1.3: Education Qualification wise comparison of preference of Self-service Technology

Occupational wise distribution reveals that, it is the salaried category using more of self-service technology.



Fig: 5.1.4: Occupation wise comparison of preference of Self-service Technology

5.2 Influence of gender on preference of Self-Service Technology

One-Way ANOVA is used to find whether the gender, which is represented as v1, influence preference for self-service technology. The two categories are: a) Male B) Female which is represented respectively as 0 and 1 for analysis in SPSS. Preference is the dependent variable and is represented as v2. In ANOVA table s=Sum of Squares, D= df, A=mean square, value=significance level (p value), X= Between groups, Y=Within groups, T=Total.

Hypothesis on Gender

- H0: Gender does not influence the customer's preference towards self-service technology.
- H1: Gender influences the customer's preference towards self-service technology.

Following is the appropriate part of SPSS sheet to find if gender influences the customer's preference towards self-service technology,

Table: 5.2.1 ANOVA Output for Gender: ATM preference

Preference

	S	D	A	0	VALUE
X	1.235	1	1.235	.730	.393
Y	673.642	398	1.693		
Т	674.877	399			

Source: SPSS Output

The significant level (p value) of ANOVA is shown in 6th Col. (VALUE) of the table. The table tells that 'p' value is equal to 0.393. Since p = 0.393 and is more than $\alpha = 0.05$, the null hypothesis is taken. Hence, the gender does not influence the customer's preference towards ATM.

Table: 5.2.2- ANOVA Output Of Gender: Internet Banking

Preference

	S	D	А	0	VALUE
X	.009	1	.009	.004	.950
Y	922.301	398	2.317		
Т	922.310	399			

Source: SPSS Output

The table reflects that 'p' value is equal to 0.950. P = 0.950, the null hypothesis is taken and established. The gender does not influence the customer's preference towards Internet Banking.

Table: 5.2.3- ANOVA Output for gender for Tele banking preference

Preference

	S	D	А	0	VALUE
X	.425	1	.425	1.270	.260
Y	133.352	398	.335		
Т	133.778	399			

The table reflects that 'p' value is equal to 0.260. p = 0 the null hypothesis is taken. Hence, the gender does not influence the customer's preference towards Tele- Banking.

5.3 Influence of age on preference of Self-Service Technology

One-Way ANOVA is done in order to find whether the age group, influence the consumers' preference towardsSelf-Service Technology.

These age groups are represented respectively as 0, 1, 2, 3 and 4 for analyzing in SPSS. Customer's preference towards self-service technologyis the dependent variable.

In ANOVA table s=Sum of Squares, D= df, A=mean square, value=significance level (p value), X= Between groups, Y=Within groups, T=Total.

Hypothesis on age-group

H0: Age does notinfluence on the customer's preference towards Self-Service Technology

H1: Age has influence on the customer's preference towards Self-Service Technology

Table: 5.3.1- ANOVA Output On age-group: ATM preference

	S	D	А	Ο	VALUE
X	95.490	4	23.873	16.275	.000
Y	579.387	395	1.467		
Т	674.878	399			

Preference

The table indicates that 'p' value is equal to 0, p = 0 the null hypothesis is not taken. Hence, the age group has influence on the customer's preference towards on the consumers' towardsATM.

Table: 5.3.2- ANOVA Output For age-group: Internet Banking

Preference

	S	D	А	0	VALUE
Х	98.578	4	24.644	11.818	.000
Y	823.732	395	2.085		
Т	922.310	399			

Source: SPSS Output

. The table indicates that 'p' value is equal to 0; the null hypothesis is not taken. Hence, the age group does influence the customers' preference towards Internet Banking.

	S	D	А	0	VALUE
X	2.591	4	.648	1.950	.101
Y	131.187	395	.332		
Т	133.778	399			

Table: 5.3.3- ANOVA Output For age-group For preference of Tele banking

The table reflects that 'p' value is equal to 0.101, p = 0.101 and the null hypothesis is taken. Age group does not influence the customers' preference towards Tele banking.

5.4 Influence of Educational qualification on preference of Self-Service Technology

One Way ANOVA is done in order to find whether the level of education, represented as v1, has significant influence on preference of self-service technology.

These categories are represented respectively as 0, 1, 2, 3 and 4 for analysis purpose in SPSS.

In ANOVA table s=Sum of Squares, D= df, A=mean square, value=significance level (p value), X= Between groups, Y=Within groups, T=Total.

Hypothesis on Educational Qualification

H0: Educational qualification does not influence the customer's preference towards self-service technology.

H1: Educational qualification has an influence on the customer's preference towards Selfservice technology.

Table: 5.4.1- ANOVA Output For Educational Qualification: ATM preference

ANOVA

Preference

	S	D	A	0	VALUE
X	62.579	4	15.645	10.073	.000
Y	610.358	393	1.553		
Т	672.937	397			

The table reflects that 'p' value is equal to 0; the null hypothesis is not taken. Hence, the educational qualifications influence the customers' preference towards ATM.

Table: 5.4.2- ANOVA Output For Educational Qualification: Internet Banking

Preference

	S	D	А	0	VALUE
X	62.579	4	15.645	10.073	.000
Y	610.358	393	1.553		
Т	672.937	397			

Source: SPSS Output

The table reflects that 'p' value is equal to 0 is less than $\alpha = 0.05$, the null hypothesis is rejected. Hence, the Educational Qualification influences the customers' preference towards Internet Banking.

Table: 5.4.3- ANOVA Output For Educational Qualification: Tele banking

Preference

	S	D	А	0	VALUE
X	3.256	4	.814	2.452	.046
Y	130.435	393	.332		
Т	133.691	397			

Source: SPSS Output

The table reflects that 'p' value is equal to 0.046. p = 0.046 and the null hypothesis is not taken. Hence, the educational qualifications influence the customers' preference towards telebanking.

5.5 Influence of Occupation on preference of Self-Service Technology

One-Way ANOVA is done in order to find whether the different types of occupation, represented as v1, has significant influences on the use of self-service technology.

Occupation is represented respectively as 0, 1, 2, 3 and 4 for analysis purpose in SPSS. Preference for self-service technology is the dependent variable and is represented as v2.

In ANOVA table s=Sum of Squares, D= df, A=mean square, value=significance level (p value), X= Between groups, Y=Within groups, T=Total.

Hypothesis on Occupation:

H0: Occupation does not influence the customer's preference towards self-service technology

H1: Occupation has influence on the customer's preference towards self-service technology

Table 5.5.1- ANOVA Output For Occupation: ATM preference

Preference

	S	D	А	0	VALUE
Х	133.407	4	33.352	25.054	.000
Y	523.168	393	1.331		
Т	656.575	397			
Source: SPSS Ou	ıtput				

The table reflects that 'p' value is equal to 0. Hence, the occupation influences the customers' preference towards ATM.

Table: 5.5.2- ANOVA Output For Occupation: Internet Banking

Preference

	S	D	А	0	VALUE
X	120.038	4	30.010	14.777	.000
Y	798.133	393	2.031		
Т	918.171	397			

'p' value is equal to 0. Hence, Occupation has influence on the customer's preference towards Internet Banking.

Table: 5.5.3- ANOVA Output For Occupation: Tele banking

Preference

	S	D	А	0	VALUE
Х	3.059	4	.765	2.588	.037
Y	91.301	309	.295		
Т	94.360	313			

Source: SPSS Output

The table reflects that 'p' value is equal to 0.037. Hence, occupation has an influence on the customers' preference towards tele- banking.

5.6 Comparison of customer's preference towards preference of Self-Service Technology

The preference of customers for using Self-service technology in both the banks has been analyzed by comparing the frequency of the preference of the facility. Private banks and public banks have been represented respectively as bank-1 and bank-2.

The hypothesis for comparison of preferences of public and private sector banks are:

H0: The customers' preference of bank-1 is same as the customers' preferenceofbank-2H1: The customers' preference of bank-1 is different from the customers' preferenceofbank-2 The analysis is presented below:

5.6.1 Comparative Analysis for preference of using ATM:

The relevant portion of SPSS output sheet is presented below:

		Leve Test Equa of Varia	ne's for lity ances	t-test	for Equa	ality of	Means			
-		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Interva Differ	Confidence al of the ence
									Lowe r	Upper
PREFERENCE	Equal variances assumed	.715	.398	- 1.083	398	.280	150	.139	422	.122
M	Equal variances not assumed			- 1.083	393.823	.280	150	.139	422	.122

Table 5.6.1:	Independent	Samples Te	est - Comparat	ive Analvsis:	preference o	f using ATM
					p. e. e. e. e. e	

The table reflects that 'p' value is equal to 0.398, so the customers' preference of public sector bank are same as the customers' preference of private sector bank regarding the preference of ATM.

5.6.2 Comparative Analysis for preference of using Internet Banking

The relevant portion of SPSS output sheet is presented below:

Table 5.6.2: Independent Samples Test - Comparative Analysis: preference of using Internet Banking

		Leven	ne's	t-tes	t for Equ	ality of	f Means			
		Test	for							
		Equal	ity o	f						
		Varia	nces							
		F	Sig.	t	Df	Sig.	Mean	Std. Error	95%	
						(2-	Difference	Difference	Confide	ence
						tailed)			Interva	l of the
									Differe	nce
									Lower	Unnor
									Lower	Opper
	Equal				-					
	variances.2	203	.653	.031	396	.975	.005	.161	311	.321
PREFERENCE	assumed									
towards interni BANKING	ET Equal variances			.031	395.635	.975	.005	.161	311	.321
	not assumed									

p = 0.653, the customers' preference of public sector bank are same as the customers' preference of private sector bank regarding the preference of Internet Banking.

5.6.3 Comparative Analysis for preference of using Tele- Banking

The relevant portion of SPSS output sheet is:

Table 5.6.3: Independent Samples Test- Comparative Analysis: preference of using Tele Banking

		Levene' Test Equality Varianc	for y of es	t-test	for Equa	lity of	Means			
		F	Sig.	t	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	5% Confid Interva Differe	ence l of the nce
									Lower	Upper
PREFERENCE	Equal variances assumed	12.377	.000	- 1.794	398	.073	135	.075	283	.013
TOWARDS TELE- BANKING	Equal variances not assumed			- 1.794	366.757	.074	135	.075	283	.013

p = 0 so customer's preference of public sector bank is different as the customers' preference of private sector bank regarding the preference of Tele Banking.

5.7 Comparison of preference of customers: convenience

The preference of customers for using self-service technology in both the banks has been analyzed by comparing the frequency of the preference of the facility.

Hypothesis for Convenience:

H0: Convenience does not influence the customer's preference towards self-service technology.

H1: Convenience influences the customer's preference towards self-service technology.

Table 5.7.1 ANOVA Output for preference of private bank customer'swrtConvenience:ATM

CONVENIENCE

	S	d	А	0	VALUE
Х	162.916	5	32.583	72.292	.000
Y	87.439	194	.451		
Т	250.355	199			

P = 0, convenience influences the preference of private bank customers towards ATM.

ANOVA

CONVENIENCE

	S	d	A	0	VALUE
Х	224.679	5	44.936	67.629	.000
Y	128.901	194	.664		
Т	353.580	199			

P = 0 and is less than $\alpha = 0.05$, convenience, influences the preference of public bank customers towards ATM.

Table 5.7.3: ANOVA Output for preference of private bank customer's wrt Convenience: Internet Banking

ANOVA

INTERNET BANKING

	S	d	А	0	VALUE
Х	255.708	5	51.142	60.162	.000
Y	164.912	194	.850		
Т	420.620	199			

P = 0, convenience, influences the preference of private bank customers towards internet banking.

Table 5.7.4: ANOVA Output for preference of public bank customer's wrt Convenience: Internet Banking

ANOVA

INTERNET BANKING

	S	d	А	0	VALUE
Х	249.992	5	49.998	38.798	.000
Y	250.008	194	1.289		
Т	500.000	199			

P = 0 and, convenience, influences the preference of public bank customers towards internet banking.

Table 5.7.5: ANOVA Output For preference of private bank customer's wrt Convenience: Tele- Banking

ANOVA

Tele-Banking

	S	d	А	0	VALUE
X	18.569	5	3.714	20.335	.000
Y	35.431	194	.183		
Т	54.000	199			

P = 0 and, convenience, influences the preference of private bank customers towards telebanking. Table 5.7.6: ANOVA Output For preference of public bank customer's wrt Convenience: Tele- Banking

ANOVA

TELE-BANKING

	S	d	А	0	VALUE
Х	31.069	5	6.214	24.760	.000
Y	48.686	194	.251		
Т	79.755	199			

P = 0 and convenience, influences the preference of public bank customers towards tele-banking.

5.8. Comparison of preference of customers: based on Time saving parameter

Table: 5.8.1: ANOVA Output for preference of private bank customer's wrt Time: ATM

ANOVA

	S	d	А	0	VALUE
Х	150.039	5	30.008	32.242	.000
Y	180.556	194	.931		
Т	330.595	199			

P = 0, time saving aspect, influences the preference of private bank customers towards ATM.

ANOVA

	S	d	А	0	VALUE
X	223.153	5	44.631	103.417	.000
Y	83.722	194	.432		
Т	306.875	199			

P = 0, time saving aspect, influences the preference of public bank customers towards ATM.

Table 5.8.3 ANOVA Output For preference of private bank customer's wrt Time: Internet Banking

ANOVA

	S	d	A	0	VALUE
Х	204.710	5	40.942	36.787	.000
Y	215.910	194	1.113		
Т	420.620	199			

'P' value is equal to 0, time saving aspect, influences the preference of private bank customers towards internet banking.

Table 5.8.4 ANOVA Output for preference of public bank customer's wrt Time: INTERNET BANKING $\ensuremath{\mathrm{ANOVA}}$

	S	d	А	0	VALUE
Х	255.318	5	51.064	40.486	.000
Y	244.682	194	1.261		
Т	500.000	199			

'P' value is equal to 0 and, time saving aspect, influences the preference of public bank customers towards internet banking.

Table 5.8.5 ANOVA Output For preference of private bank customer's wrt Time: TELE-BANKING

ANOVA

	S	d	A	0	VALUE
X	13.220	5	2.644	12.578	.000
Y	40.780	194	.210		
Т	54.000	199			

'P' value is equal to 0 and, time saving aspect, influences the preference of private bank customers towards tele- banking.

Table: 5.8.6 ANOVA Output For preference of public bank customer's wrt Time: TELE BANKING $\ensuremath{\mathrm{ANOVA}}$

	S	d	А	0	VALUE
Х	26.857	5	5.371	19.699	.000
Y	52.898	194	.273		
Т	79.755	199			

'P' value is equal to 0 and time saving aspect, influences the preference of public bank customers towards tele- banking.

5.9 Comparison of preference of customers between public sector banks and private sector banks towards Self-Service Technology based on cost

Table: 5.9.1 ANOVA Output For preference of private bank customer's wrt Cost: ATM

ANOVA

	S	d	А	0	VALUE
Х	140.106	5	28.021	28.538	.000
Y	190.489	194	.982		
Т	330.595	199			

'P' value is equal to 0 and, cost, influences the preference of private bank customers towards ATM

Table 5.9.2-ANOVA Output For preference of public bank customer's wrt Cost: ATM

ANOVA

	S	d	A	0	VALUE
X	159.290	5	31.858	33.694	.000
Y	183.430	194	.946		
Т	342.720	199			

'P' value is equal to 0and, cost, influences the preference of public bank customers towards ATM.

Table: 5.9.3- ANOVA Output For preference of private bank customer's wrt Cost: INTERNET BANKING

ANOVA

	S	d	A	0	VALUE
Х	187.312	5	37.462	31.151	.000
Y	233.308	194	1.203		
Т	420.620	199			

'P' value is equal to 0and, cost, influences the preference of private bank customers towards internet banking.

Table: 5.9.4-ANOVA Output For preference of public bank customer's wrt Cost: INTERNET BANKING ANOVA

	S	d	А	0	VALUE
Х	245.595	5	49.119	37.456	.000
Υ	254.405	194	1.311		
Т	500.000	199			

'P' value is equal to 0 and cost, influences the preference of public bank customers towards internet banking.

Table: 5.9.5-ANOVA Output For preference of private bank customer's wrt Cost: TELE-BANKING ANOVA

	S	d	А	0	VALUE
X	8.184	5	1.637	6.930	.000
Y	45.816	194	.236		
Т	54.000	199			

'P' value is equal to 0 and cost, influences the preference of private bank customers towards telebanking.

Table: 5.9.6-ANOVA Output for preference of public bank customer's wrt Cost

ANOVA

	S	d	А	0	VALUE
Х	36.748	5	7.350	33.154	.000
Υ	43.007	194	.222		
Т	79.755	199			

'P' value is equal to 0 and cost influences the preference of public bank customers towards telebanking.

5.10 Comparison of preference of customers between public sector banks and private sector banks towards Self-Service Technology based on comfort

Table: 5.10.1 ANOVA Output For preference of private bank customer's wrt Comfort: ATM

ANOVA

	S	d	А	0	VALUE
X	153.187	5	30.637	33.503	.000
Y	177.408	194	.914		
Т	330.595	199			

'P' value is equal to 0 and so comfort, influences the preference of private bank customers towards ATM.

Table: 5.10.2-ANOVA Output for preference of public bank customer's wrt Comfort: ATM

ANOVA

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	S	d	А	0	VALUE
Х	170.103	5	34.021	38.235	.000
Y	172.617	194	.890		
Т	342.720	199			

'P' value is equal to 0;comfort influences the preference of public bank customers towards ATM.

Table: 5.10.3-ANOVA Output for preference of private bank customer's wrt Comfort:

Internet Banking

ANOVA

	S	d	А	0	VALUE
Х	233.694	5	46.739	48.508	.000
Y	186.926	194	.964		
Т	420.620	199			

'P' value is equal to 0, comfort, influences the preference of private bank customers towards Internet Banking.

Table: 5.10.4-ANOVA Output for preference of public bank customer's wrt Comfort: Internet Banking

ANOVA

	S	D	A	0	VALUE
Х	257.277	5	51.455	41.127	.000
Y	242.723	194	1.251		
Т	500.000	199			

'P' value is equal to 0 comfort, influences the preference of public bank customers towards Internet Banking.

Table: 5.10.5-ANOVA Output for preference of private bank customer's wrt Comfort: Tele Banking

ANOVA

	S	d	А	0	VALUE
Х	11.484	5	2.297	10.480	.000
Υ	42.516	194	.219		
Т	54.000	199			

'P' value is equal to 0, comfort, influences the preference of private bank customers towards Tele- Banking.

Table: 5.10.6-ANOVA Output For preference of public bank customer's wrtcomfort: Tele- Banking

ANOVA

	S	d	А	0	VALUE
Х	40.031	4	10.008	49.127	.000
Y	39.724	195	.204		
Т	79.755	199			

'P' value is equal to 0, comfort, influences the preference of public bank customers towards telebanking.

5.11 Comparison of preference of customers between public sector banks and private sector banks towards Self-Service Technology based on security

 $T \mbox{able: 5.11.1-ANOVA}$ Output for preference of private bank customer's wrt Security: ATM

ANOVA

	S	d	A	0	VALUE
Х	121.871	5	24.374	22.655	.000
Y	208.724	194	1.076		
Т	330.595	199			

'P' value is equal to 0, security, influences the preference of private bank customers towards ATM.

Table: 5.11.2- ANOVA Output For preference of public bank customer's wrt Security: ATM

ANOVA

	S	d	A	0	VALUE
X	156.919	5	31.384	32.769	.000
Y	185.801	194	.958		
Т	342.720	199			

'P' value is equal to 0, security, influences the preference of public bank customers towards ATM.

Table: 5.11.3-ANOVA Output for preference of private bank customer's wrt Security: INTERNET BANKING

ANOVA

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	S	d	А	0	VALUE
Х	183.325	5	36.665	29.975	.000
Υ	237.295	194	1.223		
Т	420.620	199			

'P' value is equal to 0, security, influences the preference of private bank customers towards Internet Banking.

Table: 5.11.4-ANOVA Output For preference of public bank customer's wrt Security: INTERNET BANKING ANOVA

	S	d	A	0	VALUE
Х	264.716	5	52.943	43.654	.000
Y	235.284	194	1.213		
Т	500.000	199			

'P' value is equal to 0, security, influences the preference of public bank customers towards Internet Banking.

Table:5.11.5-ANOVA Output for preference of private bank customer's wrt Security: TELE BANKING

ANOVA

	S	d	A	0	VALUE
Х	17.145	5	3.429	18.050	.000
Y	36.855	194	.190		
Т	54.000	199			

'P' value is equal to 0, security, influences the preference of private bank customers towards Tele-banking.

Table:5.11.6-ANOVA Output For preference of public bank customer's wrt Security: TELE BANKING

ANOVA

	S	d	А	0	VALUE
Х	42.010	5	8.402	43.185	.000
Y	37.745	194	.195		
Т	79.755	199			

'P' value is equal to 0, security, influences the preference of public bank customers towards Tele-banking

5.12 Comparison of preference of customers wrt human interface

Table: 5.12.1-ANOVA Output For preference of public bank customer's wrt Human Interface:ATM

ANOVA

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	S	d	A	0	VALUE
Х	145.777	6	24.296	23.810	.000
Y	196.943	193	1.020		
Т	342.720	199			

'P' value is equal to 0, human interface ,influences the preference of public bank customers towards ATM.
Table: 5.12.2-ANOVA Output For preference of private bank customer's wrt Human Interface:ATM

ANOVA

	S	d	A	0	VALUE
Х	110.888	6	18.481	16.235	.000
Y	219.707	193	1.138		
Т	330.595	199			

'P' value is equal to 0, human interface, influences the preference of private bank customers towards ATM.

Table:5.12.3-ANOVA Output For preference of private bank customer's wrt Human Interface: INTERNET BANKING

ANOVA

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	S	d	A	0	VALUE
Х	179.330	5	35.866	28.837	.000
Υ	241.290	194	1.244		
Т	420.620	199			

'P' value is equal to 0, human interface ,influences the preference of private bank customers towards Internet Banking.

Table:5.12.4-ANOVA Output For preference of public bank customer's wrt Human Interface: INTERNET BANKING

ANOVA

	S	d	A	0	VALUE
Х	239.565	5	47.913	35.691	.000
Y	260.435	194	1.342		
Т	500.000	199			

'P' value is equal to 0, human interface, influences the preference of public bank customers towards Internet Banking.

Table: 5.12.5-ANOVA Output For preference of private bank customer's wrt Human Interface: TELE-BANKING

ANOVA

	S	d	А	0	VALUE
X	29.847	5	5.969	47.948	.000
Y	24.153	194	.124		
Т	54.000	199			

'P' value is equal to 0, human interface, influences the preference of private bank customers towards Tele-banking.

Table: 5.12.6-ANOVA Output For preference of public bank customer's wrt Human Interface: TELE BANKING

ANOVA

	S	d	A	0	VALUE
Х	43.533	5	8.707	46.632	.000
Υ	36.222	194	.187		
Т	79.755	199			

'P' value is equal to 0, human interface, influences the preference of public bank customers towards tele-banking.

5.13 Other Findings

• ATM's are mostly preferred by the customers.







Figure 5.13.2: Frequency of preference of internet banking



Figure 5.13.3: Frequency of preference of tele banking

The data from respondents and literature review reflects the following Findings:

- In ATM, the services offered are:
- a.Statement Enquiry
- b.Bills payment
- c.Shopping
- d.DD/Pay order request
- e.Withdrawal/deposit
- f. Cheque book request

Among the above available services; ATM has been widely used for Withdrawal/Deposit, Shopping and Statement enquiry only. Rest of the services has still not been widely adopted.

• In Internet Banking the services offered are: a.Statement Enquiry b.Bills payment
c.Shopping
d.DD/Pay order request
e.Loan request
f. Cheque book request
g.Fund transfer

Among the above available services; Internet banking has been widely used for bill payment, shopping, fund transfer and statement enquiry only. Rest of the services has still not been widely adopted.

• In tele bankingthe services offered are:

a.Statement Enquiry
b.Bills payment
c.Shopping
d.DD/Pay order request
e.Loan request
f. Cheque book request
g.Fund transfer

Among the above available services; tele-banking has been widely used for Statement enquiry only. Rest of the services has still not been widely adopted.

5.14 Summary

This chapter analyzed the demographic factors influencing the preferences for self-service technology with reference to banking sector in Jharkhand. The reasons given by customers preferring less of self-service technology were lack of awareness, uncomfortable with the operation of self-service technology, security concerns and unfamiliarity with the self-service technology.

6. CONCLUSION

6. Conclusion

6.1 Overview

It has been analyzed that though several self-service technology are provided by banks, only ATMs preferred most by the customers. Preference of other modes of Self-service technology like internet banking or telebanking has to be focused. While details about the findings with respect to factors influencing consumer preferences towards self-service technology have been discussed in previous sections, the most significant findings and comparison of those with that of the existing literatures are highlighted in this section.

6.2 Summary of research Findings

One-Way ANOVA has been used to find the significant influences of various demographic variables on the preference of Self-Service Technology. One-Way ANOVA is used to find whether any of the demographic profile of the consumers has influence on the preference of the self-service technologies like ATM's, internet banking and tele-banking services. The demographic variables are the independent variable represented as v1 and the preference of self-service technology represented as v2.

6.2.1 Customer's preference towards ATM services

Regarding ATM services, the findings obtained by this analysis are as follows:-

- Gender does not influence the customer's preference towards preference of ATM.
- Age has perfect level of significance on preference of ATM.
- Educational Qualification has perfect level of significance on preference of ATM.

• Occupation has perfect level of significance on preference of ATM.

It has been observed that the preference of customers of public sector bank is same as the customers' preference of private sector bank towards ATM.

The finding also reflects that parameters like convenience to use with reference to location, time, cost, comfort, security and user friendliness influences the preference of both private as well as public bank customers towards ATM.

6.2.2 Customer's preference towards Internet Banking services

Regarding Internet Banking services, the findings obtained by the analysis are as follows:-

- Gender does not influence the customers' preference towards Internet Banking
- Age group has perfect level of significance on preference of Internet Banking i.e. age, influences the customers' preference towards Internet Banking.

• Educational Qualification has perfect level of significance on preference of Internet Banking i.e. educational qualification, influences the customers' preference towards Internet Banking.

> • Occupation has perfect level of significance on preference of Internet banking i.e. Occupation, influences the customers' preference towards Internet Banking.

It has been observed that the preference of customers of public sector bank is same as the customers' preference of private sector bank towards Internet banking.

The finding also reflects that parameters like convenience to use with reference to location, time, Cost, Comfort, Security and user friendliness, influences the preference of both private as well as public bank customers towards Internet banking.

6.2.3 Customer's preference towards Tele- banking services

Regarding Tele- banking services, the findings obtained by the `analysis is as follows:-

- Gender has no influence on the customers' preference towards Tele- Banking.
- The age group does not influence the consumers' preference towards Tele- banking.
- The educational qualification influences the consumers' preference towards

tele-banking.

•Occupation influences the customers' preference towards Tele- banking.

The result reflects that the preference of Tele- banking in private sector bank is slightly different as that of public sector banks. The Finding also reflects that parameters like convenience to use with reference to location, time; Cost, Comfort, Security and user Friendliness, influences the preference of both private as well as public bank customers towards tele-banking.

6.2.4 Comparison of customer's preference of public and private bank towards self-service technology

It has been observed that 87% of customers of public sector bank prefer Self-service technology, for private sector banks 90% of customers prefer Self-service technology.

The other major findings were that

- ATM services are widely used by the customers as compared to Internet Banking and Tele banking services.
- The customers' preference of public sector bank are same as the customers' preference of private sector bank regarding the preference of ATM
- The customers' preference of public sector bank are same as the customers' preference of private sector bank regarding the preference of Internet Banking.

The customer's preference of public sector bank is slightly different as the preference of customers of private sector bank regarding the preference of Tele Banking.

The reason for preferring less internet banking or tele- banking as derived from literature review, discussion with banking official's and respondents are as follows:

- Customers avoid using Internet Banking due to lack of trust and fear of security
- Absence of training for the usage of internet banking or tele- banking
- •Absence ofknowledge about the steps to be used
- Unaware about the benefits of using the services
- Lack of personal touch

6.3 Managerial Implications and Suggestions

The findings of the research will help the banks to identify the key factors leading to more acceptability of the Self-service technology in the Indian Banking sector, more specifically in Jharkhand. Also, it will help all the concerned persons to identity the factors which act as barriers for Self-service technology's popularity and take corrective actions to overcome these barriers. The customers can be made more aware about the positive aspects of the self-service technology as a result, of which the acceptability of the services will increase. Some specific suggestions are listed below:-

1) More effective promotional campaigns to be undertaken to inform about the positive effects of self-service technology.

2) When consumers hold hesitant attitudes towards using Self-service technology, high effort should be given by the banks to remove the discomfort of the customers using self-service technology. So, while going for self-service technology advertising, the banks should assess the doubts or dilemma of their target consumers' attitude towards using self-service technology.

3) Effective demographic segmentation should be implemented so that the different categories of self-service technology can be targeted according to the selected segment of the market.

4) The research also helps to understand the varying behavior pattern between the public and private sector bank customers.

5) Overall all, these steps will help the organization to promote self-service technology better, which will increase the number of Self-service technology consumers and reduce the pressure and operational cost of banks.

6.3 Limitations of the Research

Limitations of the research study are as Follows:

1. Only ATM, internet banking and tele- banking services have been considered.

2. Only Jharkhand have been studied and the rural parts of Jharkhand are not being studied. Urban branches were chosen for the study as the customers of urban branches of banks are more adaptive to newer technology-enabled banking services

3. The responses of the respondents can be biased and, some findings can be incorrect.

6.4 Scope of Future Research

The current research provided answers to the research questions; it also highlighted its limitations in the previous section. This section provides brief directions for future researchers to pursue, in the domain of Indian Banking sector on popularizing and successfully increase customer's preference towards Self-service technology.

1. Future studies can be done by changing the sample size of all the categories

2.Future research can improve the findings of this research by extending this study to include the following:

- a. comparing rural and urban areas
- b. other geographies like different states
- c. analysis of other aspects like cyber crime
- 3.Retail banking has been studied. Corporate customers could be studied.
- 4.Future research can take place to enrich the research work by incorporating the following additional factors which are expected to change over time:
- i. expected increase in awareness of customers regarding self-service technology
- ii. change in involvement due to increase in customer exposure to self-service technology
- 5. Future research of similar type can be extended to other service sectors like: hospitals, hotels, etc.

6.5 Significant Contribution of the research

The study examines the various demographic factors and the key factors that influence the customer's preference towards self-services. Based on these, several suggestions have been provided for for increasing the preference level of customers.

6.6 Summary

The thesis brings forward the importance of identifying the various demographic variables which influences the preference for self-service technology, specifically for Ranchi and in and around of it. But, still now there are some important barriers which need to be tackled by the banks to increase the users of self-service technology of Indian banks.

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Appendices

Appendix 1

Questionnaire used for survey:-

Dear Respondent, This questionnaire is prepared regarding a research activity related to PhD program at ICFAI University, Jharkhand on Self-service technology. I shall be highly grateful if you could spare a few minutes to complete the questionnaire. Answers given by you will be kept confidential and used for academic purpose only.

Customer's preference towards Self-service technology inBank, Branch.....

1. Name of customer.....

2. Sex			:
	Male	Female	

3. Age

				Above
18 - 25	26 - 35	36 - 45	46-	60.
			60	

4. Education Level :

			Post Graduate	Professional
10 th	12th.	Graduate.	and above	Degree

5.Occupation:

|--|

6. Please tick which of the below mentioned facilities are offered by your bank of which you are aware of?

	Internet banking	Telephone banking
ATM		

7. How often do you visit your bank?

Everyday	Once	or	fortnightly	Monthly	Rarely
	twice	a			
	week				

8. How often do you use the mentioned facilities?

	Everyday	Once	or	fortnightly	Monthly	Rarely
		twice	а			
		week				
ATM						
Internet						
Banking						
Telephone						
Banking						

9.For how long you have been using the following services?

	Less than	1-2yrs.	2-3yrs.	3 - 4yrs	More than	n 4
	one Year				Years	
ATM						
Internet						
Banking						
Telephone						
Banking						

10.If you use <u>ATM</u>, please indicate which of the following services are commonly used by you in ATM services (Please tick)

Statement Enquiry	Bills Payment
Shopping/swiping in EDC Machine	DD/Pay order request
Funds Transfer	Withdrawal/deposit
Cheque book request	Others

11. If you use <u>Telephone banking</u>, please indicate which of the following services are commonly used by you in telebanking services (Please tick)

Statement Enquiry	Bills Payment		
Loan	DD/Pay order request		
Funds Transfer	Online shopping		
Cheque book request	Others		

12. If you use <u>Internet banking</u>, please indicate which of the following services are commonly used by you in <u>Internet banking</u> (Please tick)

Statement Enquiry	Bills Payment
Loan	DD/Pay order request
Funds Transfer	Online shopping
Cheque book request	Others

13. If you are dissatisfied/highly dissatisfied, in any of the following facilities, kindly mention why you feel so and what improvements can be done to make you more satisfied with the said service/s provided by your bank?

ATM.....

Internet banking.....

Telebanking

14. Please rate the following services on the basis of following parameters: (1 = Very poor. 5 = Very good.)

						Better than
	Convenience wrt	Saves	Cost	Comfortabl	Security to	human interface
	location	time	effective	e	use	i.e bankers
Electronic						
banking						
ATM services						
Telebanking						

Appendix 2

Publications by the Scholar in the Research area

- Paper on "Influence of Occupation on preference of Self-Service Technology in Jharkhand" (2018/IJTRM/1/2018/9504) in International Journal of Technology Research and Management (ISSN no- 2348-9006 Vol. 5 Issue 1): (UGC approved Journal, indexed in google scholar and scribd)
- Chapter on "A comparative study of customers' preference for Self-service technology in selected Public and Private banks in Jharkhand", published in the book titled "Post Liberalization Development in Business Management" by Bharti Publications, New Delhi.(ISBN No: 978-93-86608-27-2)
- Paper on "A Study on influences of gender on adoption of Self-service technology", selected for Springer Book series.
- Article on "An Overview of Customer's Perception in Banks regarding Self-service technology" in International Journal of Commerce and Management Studies(ISSN 2456-3684) Volume 2,Issue 1,March 2017

(Journal indexed in google scholar and scribd)

- Article on "A comparative study of customers' preference regarding Self-service Technology" in the Lingaya's National Journal of professional Studies (ISSN 0975-539x) Volume 8 | Number 1 | July - December 2014
- Presented paper onInternational Conference organized byInternational Stress Management Association on "An empirical study of coping stress (in bank employees), with special reference to The Bhagavad Gita" on6th – 8thNovember, 2014 at Hyderabad.
- Presented paper in National Convention on Smart Village organized by Department of Rural Development, Government of Jharkhand on "Self-service technology in Indian Banking Sector" on 21st-22nd August, 2015.

8. Presented paper in National Seminar organized by ISM on "Achieving Organizational Excellence through Innovation and motivation" on 5th-6th Feb,2016.

9. Paper presented at the ICBMBS 2017 International Conference held at Haridwar, Uttrakhund (India) during December 30-31, 2017 on "A comparative study of customer satisfaction for Self- services in public and private sector banks in Jharkhand".

10. Paper presented at the ICEMIT 2017 International Conference held at Amity University Jharkhand (India) during December 23rd -24th, 2017 on "Technological Innovation in Indian Banking sector: A study on impact of gender on adoption of self-service technology."