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## INFLUENCE OF TECHNOLOGY ON THE PERFORMANCE OF INDIAN BANKING SECTOR - A REVIEW

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### **Abstract**

Banking system plays a very important role in the Indian economy. It is like a central nerve to a nation's economy as it caters to the financial needs of credit in all the domains of the society. The growth and advancements in technology has led to a paradigm shift in the entire banking operations and systems. Further the development of e-banking created a massive change in terms of fulfilling customers' divergent needs. The two fold objectives of current budget, namely, demonetization and GST, purely depend on digital banking. The present study explores the influence of technology in banking sector among customers by reviewing the relevant literature from the earlier studies. An in-depth study on the impact of technology in banking, reveals the factors such as, effectiveness of data management, value added services, level of knowledge

and awareness, security, safety, service quality, productivity, and profitability.

**Keywords:** Core Banking; Mobile Banking; E-Banking; ATM; Phone Banking; Vendor Management System

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## INTRODUCTION

Information Technology has made a revolution in each and every sphere of human life. Indian Banking System has reached every nook and corner of the country. Indian Banking System is no longer kept to just the metropolitans, yet has come to try and to the remote corners of the nation. The current technological environment facilitated in providing multiple and innovative contemporary services to the customers. Expectations of the customers have increased due to the impact of technology, increase in modern technology and increase in global literacy levels. Globalization, liberalization and privatization have brought remarkable changes in the banking service sector in India. Competitive pressures have also forced the banks to reconsider the way they do business. The traditional over-the-counter banking is slowly losing its prominence due to self-service techniques and competitive pressures by banks. Computer, telecommunications and internet have revolutionized banking service by offering alternate services by shifting towards internet banking. This enabled customers to access banking services in different ways on their smart phones and computers.

Introduction of Information Technology in banking industry has led the banks to store, assimilate and process information electronically. Banks have embraced latest technologies to survive and grow in the changing market environment. Thus, the banks are able to deliver the provisions required for customers and offer the best solution from their product or service. This technological advancement in banking sector such as online banking, mobile banking, telebanking, ATM/Debit card and credit card has led to the advancements in the payments and settlement systems.

Banks have been the earliest in India to adopt technology by automating systems and streamlining their processes. Introduction of tech advancements have enabled banks to keep a high level of security, check fraud, abuse or pilferage, and to minimize the risk and cost of handling cash. Introduction of non-cash payment modules like RTGS, NEFT, NECS, UPI and digital wallets also play an instrumental role in transforming the banking services.

## REVIEW OF LITERATURE

Geetha and Ramanarayanan [1], in their study explored the impact of core banking solutions on select consumers. Their research indicates that younger population (especially between the age group of 35-45) have annual income of more than Rs: 1,20,000 and were familiar and accustomed with the internet banking. The customers, in the study area had opined that core banking solution saves time and is more consumers friendly.

Manjushree [2], defines "core banking as the business conducted by a banking institution with its retail and small business customers". She defines core banking solutions as anywhere and anytime banking. Core banking was considered as a paradigm shift. CORE refers to Centralized Online Real time Exchange. She has carried out a study to ascertain the level of satisfaction among the customers of core banking solutions of the State Bank of India and has made out an inference. Manjushree [2] study reveals that 50 percent of the customers are happy about the core banking solutions.

An analysis has been carried out by Rishi [3] to determine the Vendor Managed System (VMI) in banks. The VMI is popularized by Walmart and proctor in gamble in late 1980s. The vendor decides the inventory levels of each product and the inventory policies. Vendor managed inventory needs acceptance from the employee for any transaction and they will be communicated about it. This requires an effective communication between the bank and customers that should be done without any time delay.

A study conducted by Vinita et al. [4], analyzed the improvement in value added services, quality and convenience. Customer satisfaction is considered more important. The prices of most of the bank products are raised and there should be a reason in pricing bank services. Reserve Bank of India worked on this issue and revealed that there is unfairness and non-transparency in price hike by the banks. The personal relationship between the bank employees and customers are considered to be very important in customer satisfaction.

Ali and Hayat [5], investigated the factors influencing customer's perception on mobile banking adoption. The extended technology adoption model was adopted to measure its impact on mobile banking adoption in Bahrain. The study revealed that the factors such as perceived usefulness and ease of use were result of adoption of mobile banking. On the other hand, few factors such as perceived cost and perceived risk did not reveal any effect on the customer's intention to access mobile banking services. This study has promoted managers to consider the above factors to enforce mobile banking services.

Rakhi and Mala [6], carried out a study to accomplish two objectives – to test the functional relationship between adoption readiness, perceived risk and usage intention for mobile payments in India. This study investigated the constancy of proposed structural relationships across different customer groups. The literature concerning major attributes of technology acceptance was systematically reviewed to develop and construct the adoption of technology services. A comprehensive model consisting of adoption readiness, personal innovativeness and perceived risk was put together and the model was then empirically tested using structural equation modeling. On appraising the proposed model, five out of six hypotheses were fully supported while one hypothesis was partially supported.

Nayak et al. [7] discovered the factors that affect the adoption pattern of mobile banking services by Indian consumers and several stages involved to increase mobile banking services based on user's database. The study found that trust, perceived ease of use

and perceived cost are some of the important factors that influence the adoption behaviour of mobile banking services by Indian consumers. The study further recommended that banks should create awareness through mobile banking services such as advertisements, pamphlets, demo fares, and campaigning etc., and the study revealed that customers adopt mobile banking as they find it easy to use and comprehend.

Sharma and Sharma [8], investigated the effectiveness of data handling by the commercial banks. They opined that it might take few more years for virtual banking to be established in India. The trends witnessed in modern banking are computerization and outsourcing, and integration of various IT products related to banking. They observed that the customers switching from one bank to another has been reduced after the introduction of bank vendors.

Patel and Pithadia [9], explained in their study the various challenges faced by the Indian banking sector. The infusion of technology and agreement of banks to Core Banking Services (CBS) have not been smooth for traditional banks. Many large banks have converted only 20-30% of their branches to CBS and they feel that this would cover 70-80% of the bank business. The technology based delivery channels through bank vendors have helped in improving quality and standard. They are of the opinion that outsourcings of bank duties entitle high risk because the vendors may not have the requisite awareness about the banking domain.

Bishnoi [10], discussed about the different facilities provided by ATM, reasons to use ATM cards and several problems encountered while using ATM card. Further the researcher examined the relationship between various personal profile and ATM facilities offered by various banks. The study found out that problems while using ATM services such as machine out of cash, poor quality currency notes, machine out of order, internet failure, no printing of mini statement and poor visibility of statement slip were the significant issues. The study concluded that ATM was more comfortable at anytime and anywhere usage to their customers. ATM was increased day by day and also customers increased. There is no significant difference between opinion of male and female customers and public and private sector bank ATM customers concerning many problems while using ATM facilities.

Chandio [11], examined the recent trend of ATM facilities and paper based transactions in customer retail banking. The result showed that ATM was frequently used for cash withdrawals and to check balance enquiry. Majority of the customers use ATM in their own banks and they sometimes use ATM of other banks. The study revealed that customers were highly satisfied with their own ATM facilities.

Praful [12], studied customers' perception towards products and services of State Bank of India (SBI). The study determined that maximum of 99.27 percent of customers expressed their satisfaction and a minimum of 0.73 percent of customers expressed dissatisfaction towards the service provided by SBI. State Bank of India was the first bank in public sector to start the use innovative technology for computerization and core banking and the bank used information technology based products and services. This

study reveals the impact of the information technology on customer satisfaction in urban, semi- urban and rural branches of Yavatmal District.

Gulla and Gupta [13], have explained the role of information technology in commercial banks. The physical banking has been replaced by technology aided banking. This reduced the cost and risk, and enhanced profit. They have cited the example of Bank of India which was the first to use the tool infrastructure outsourcing. Outsourcing has both short term and long term impact on the banking services. The amount of risk that is faced from the vendors differs from one bank to another.

Alsamydai et al. [14], this study has been divided into five attributes such as Electronic Banking, personal factors, perceived usefulness, customer satisfaction and continuity of dealing with Electronic Banking services. The results revealed that there is a significant relationship between all attributes and also the factors relating to Electronic Banking - perceived usefulness and service quality. Particular reasons have an affect on customer satisfaction and continuation in dealing with E-Banking services.

Shah [15], identified the customers' perceptions towards electronic banking services in Thane city and analyse "the customers' perceptions, the problems faced by the bank customers and strategies to enhance e-banking services". This study revealed that public sector banks, private sector banks and foreign banks are offering e-banking services even though customers have become more challenging with the passage of time. Customers faced more problems like inadequate computer knowledge, poor response of bank staff, and lack of internet banking facilities, forgetting ATM PIN and language problem.

Kuchara [16], in her article titled "A study on customers' perception towards internet banking at Ahmedabad city", analyzed results such as convenience, security, easy to maintain banking facility, curiosity, better rate and low service charges as main factors. Half of the respondents agreed that internet banking was more convenient and flexible. It has different transactions and related advantages to customers. Banks offering internet banking was day by day increasing, becoming a need to have than a nice to have service.

Sekar [17], has analyzed the status of adoption of banks to information technology. The private sector banks were able to pursue technology based services much faster than the public sector banks. Technology is able to provide the methodology by which the banks can deliver and manage integrated problems. Sekar [17] believes that the banks shall become technology companies offering banking products. The developments of bank vendor's technology include biometric ATM's, information kiosks with local language and voice facility, e-marketing of SHG products through banks payment gateway. The vendor, face number of challenges like integrating several services, taking care of the requirement of enterprises and managing technical products which have lower life cycle. Security is also considered as a major challenge for the vendors.

Subhashrao [18], discusses about the challenges faced by the banking industry, from the non-traditional banking institutions. The new competitors are able to enter the

financial service market quickly and efficiently. The e-banking services are offered in much better way by the private sector banks. Internet advertisement through banking services is yet another challenge faced by the public sector banks.

Mermod [19], has analyzed the role of technology on banking industry. Due to competition in the banking sector, the profit margin has reduced and so many banks have introduced internet based banking. In Turkey there are 15 million registered users for retail banking and 1 million registered users for corporate banking. This accounts for nearly 47 percent of the customers. The integrated banking services enable the customers to increase market shares and the decision making by the customer. The author feels that there should be more co-ordination among the vendors.

Sharma [20], has listed the advantages of e-banking. The vendors, being professionals, are able to help in programming and storing the data. Core banking solution has resulted in less use of paper money and more use of plastic money. The author had reviewed "the impact of e-banking on customer relationship, performance of the bank, and adoptability of bank employees and public for the banking". Sharma [20] has given the opinion that there are shortcomings which need to be set right.

Sawant [21], has observed that the banking sector supports economic growth by the introduction of information technology. The Electronic Clearance Services (ECS) created in late 1990s, Electronic Fund Transfer (EFT) presented in mid-2000, and RTGS presented in 2004, and NEFT presented in 2005-06 with a specific end goal to build effectiveness of business banks. Nearly 90 percent of the banks have introduced core banking system by the end of 2010. The authors have explored about SWIFT, Bank net, and NPCI and demat cards and concluded that the use of technology has been helpful in providing facilities and services to the customers.

Jain and Natarajan [22], have outlined the usual factors that influence the outsourcing decisions. In any industry outsourcing is taken up only when providing regular employment is costly for the organization. The researcher states that in the Indian banking sector both the banks and the agency outsourcing the labour (vendor) draw from the same labour pool and pay more or less the same wage. So outsourcing in Indian commercial banks is not for cost reduction. But when technical labours are outsourced it becomes easier for the commercial banks to manage their traditional functions. However outsourcing results in greater risk for the commercial banks and lesser accountability for the vendor.

Sanda and Arhin [23], investigated the provision of ATMs and customer service centre. The study showed that the majority of the bank customers who used the ATM services perceived that ATM was a convenient, reliable and suitable tool for banking transactions. Therefore, the author suggests that an investigation should be undertaken to find the satisfaction level of ATM users in Tamil Nadu.

Kumbhar [24], identified key factors that influence customers' level of satisfaction in ATM service offered by public and private sector banks. Customer perception is classified into seven dimensions such as system availability, fulfillment and efficiency,

security and responsiveness, easiness, convenience, cost effectiveness, problem handling and contact and overall satisfaction. The result found that cost effectiveness of ATM service was the core service quality dimension and it affected the overall customer satisfaction in ATM service, offered in public and private sectors bank. However, factor analysis showed that easy to use, cost effectiveness and security and responsiveness influences customer level of satisfaction at 36 per cent variance.

Girdhar and Bhardwaj [25], identified the awareness level of mobile banking services among working professionals and also whether or not they are using mobile banking. The study concluded that awareness level of mobile banking services among working professionals was very less. The reasons for its usage by the recent users and of those who were presently non-users strongly consider on two major factors, such as, secured and easy accessibility and uninterrupted mobility to exist mobile banking services. The banks should educate their customers by communicating benefit of mobile banking services by considering upon the above stated two major factors.

According to Safeena et al. [26], the important determinants of online banking adoption are the usefulness of the system, the ease at which the online banking is done, customer awareness and knowledge about the possible risk. The online banking system is adopted due to its positive effect on the customers. Most of the online customers are aware of the risk involved in online banking.

Antony [27], observed that in western countries banks are engaged dependent on technology vendors to help the commercial banks. The vendors have to undergo a diligent process while serving the bank. The author has reviewed the process by which the front office system is integrated to the point of sale. The banks are more concerned with security and the complaints by the customers. The process of signing the bank vendor to provide technology takes longer period of time.

Singh and Komal [28], analysed the current ATM facilities offered by State Bank of India, ICICI bank and HDFC bank and also examined the factors affecting the preference of ATM. It's a comparative study of three public and private sectors, namely, State Bank of India, ICICI bank and HDFC bank. The study concluded that majority of the respondents were highly satisfied in SBI ATM facilities, then second was ICICI bank and third was HDFC bank. Goodwill, years of establishment and size of the banks are the reasons for customer satisfaction. Customer satisfaction i.e. in terms of good organization, quick services and performance, HDFC Bank was at first place followed by ICICI Bank and SBI respectively.

Kamakodi and Khan [29], have observed that the New Private Sector Banks (NPSB) started after 1993 where able to make information technology revolution in the banks. The adoption of internet technology leads to competition between NPSB and Public Sector Banks and Old Private Sector Banks. The banking operations using internet was able to produce lot of new products like internet banking, ATMs, phone banking, debit card, credit card and online banking. A survey was conducted by the authors on a comfort level of customers with regard to CBS. The survey results shows that more than 50 percent are adaptable for internet banking, nearly 40 percent have expressed

concern over risk.

Singh and Malhotra [30], have analyzed the role of information technology and internet banking in Indian banking sector. They feel that the electronic fund transfer has been very effective and number of users is rapidly increasing. They have observed that all the commercial banks and number of foreign banks are providing almost identical services to the customers. In their opinion the demat accounts, carrying out of standing instructions and foreign transactions are not up to expectation. The internet banking has a lot of security risks which need to be addressed. There are some non-internet banks with non-transactional websites.

Kumra and Mittal [31], have analyzed the motivating factors behind the development of trust on a particular bank. The service delivery system and greater online information are the factors responsible for development of trust. The customers take decisions on the basis of social risk and psychological risk. The online banking can survive only by generating trust. The formal and informal communication and quick decisions and disputes are able to provide more trust on banking. The vendors have a big role to play on the creation of trust.

Kolodinsky [32], explored factors that effect the implementation to three e-banking technologies such as automatic bill payment, phone banking and personal computer banking. The researcher recognized six issues, and they are "relative advantage, complexity/simplicity, compatibility, observability, risk tolerance and product involvement. The study concluded that the relative advantage and compatibility are significant with e-banking technologies, and trial-ability, simplicity, observe-ability, risk, and security" are not significant with e-banking technologies.

De Sarkar et al. [33], have analyzed the development of internet banking in India and have discussed about various aspects of the supply chain in commercial banks. The bank vendors have been playing a very important role in this supply chain of commercial banks. The bank computerization and many low risk data are outsourced to external vendors. ICICI has been using the vendors in non-banking finance investor servicing brokerage, capital financing and infrastructural financing.

## CONCLUSION

The review of studies is related to digital technology in banking sector. The role of technology is most important in the present scenario. Indian banking sector is one of the fast emerging industries in the world. Over the past era, banks portrayed a drastic improvement by the introduction of new technological solutions. The installations of ATM network, growth of the internet, development of mobile phones and telecommunication technology have carried out a revolution in the services delivered by the bank. Banks realized that the technology can help them to achieve a better competitive position. Still, banking sector is creating the awareness to the people about e-banking, mobile banking, credit card facilities, business loans and home loans facilities, to ensure demonetization in the country, which will make the financial transactions transparent. This revolutionary change could eliminate the black economy

on the one hand help the people at grass root level to get the financial assistance from the banks producing necessary documents on the other.

Hence, internet banking and digital banking assures the best financial practices throughout India which is desired by our prime minister and ultimately every citizen of India.

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