

## **IMPACT OF INFORMATION TECHNOLOGY ON VARIOUS FACTORS OF NEW AGE BANKING SYSTEM: A FIELD STUDY FROM CUSTOMER PERSPECTIVE**

**Dr. M. JULIAS CEASAR**, Asst. Professor of Commerce,  
School of Management Studies, St. Joseph's College (Autonomous) Tiruchirappalli. 620 002.  
(Affiliated to Bharathidasan University, Tiruchirappalli, Tamilnadu.620 024).

### **Introduction**

Indian is one of the most important country that moved ahead in the application of technology in all spheres of their functioning since 1991 the year from which the liberalization, privatization and globalization (LPG) policies were accepted. Banking sector is one of the most important sectors that benefited through the introduction of technology which is defined a new age banking or innovative banking or technology enabled banking services. The new age banks have the benefit of introducing convenient features such as withdrawal, deposits, loans, investments and other related aspects that benefits large masses of customers.

Technology has opened new markets, new products, new services and efficient delivery channels for the banking industry with new way of doing business. Online electronics banking, mobile banking and internet banking are just a few examples. Technology has also provided banking industry with the resources to deal with the challenges the new and modern economy poses. Information technology has been the cornerstone of recent financial sector reforms aimed at increasing the speed and reliability of financial operations and of initiatives to strengthen the banking sector.

The revolution and the evolution of information technology have set the new trends for unprecedented increase in the financial activity everywhere. The progress of technology and the development of worldwide networks have reduced the cost of global funds transfer. It is technology which enables banks in meeting such high expectations of the customers who are more demanding and are also more techno-savvy compared to their counterparts of the yester years. Technology has been providing solutions to banks to take care of their accounting and back office requirements. This has, however, now given way to large scale usage in services aimed at the customer of the banks.

Technology also facilitates the introduction of new delivery channels in the form of Automated Teller Machines, Net Banking, Mobile Banking, Paytm features and the like. Further, IT deployment has assumed such high levels that it is no longer possible for banks to manage their IT implementations on a standalone basis with IT revolution, banks are increasingly interconnecting their computer systems not only across branches in a city but also to other geographic locations with high-speed network infrastructure, and setting up local area and wide area networks and connecting them to the Internet. Thus, information systems and networks are now exposed to a growing number of customers that may surpass the other nations. In this regard, it is found necessary to the researcher to take up the efficiency and effectiveness of new age banking.

### **Review of Literature:**

1. **Zeithaml and Gilly (2017)** attempted to compare the adoption of retailing technology among elderly and non-elderly bank customers. The study found that main reason for the reason for not using the ATMs was the preference for human tellers.

2. **Marshall and Heslop (2008)** in their study attempted to investigate the impact of demographic variable on the adoption of ATM services. The study found that consumers 'motives for use of technology were useful for predicting subsequent usage. Demographic factors such as higher education levels and employment status were positively related to usage of ATMs. Age was negatively related to adoption of ATMs.
3. **Leblanc (2011)** tried to identify the main consumer motivations for adoption of ATM; the Study found that main consumer motivation for using ATMs was its accessibility benefits. Study also found that use of technology in banking sector improved service quality, presented little security risk and fulfilled their need for simple and fast transactions. Furthermore, non-users preferred interacting with human tellers and perceived ATM usage to be complex and risky.
4. **Benton, (2016)** has observed that with the advent of information technology, there has been positive impact on the productivity, profitability and efficiency of banks. But instances of bank frauds are also on the rise. These are in fact hidden threats to the effective functioning of financial institutions. The author has analyzed the mechanism in which bank frauds are taking place and also has suggested how to tackle them. Dealing with frauds would have an impact on banking productivity as additional resources need to be invested in online transaction for detection of frauds, like, scrutinizing orders, tracking bad transactions, negotiating in case of trouble with the banking transactions etc.

#### **Statement of the problem:**

The reviews highlight the entry of the innovative technology and their applications in various spheres of banking services but, there is no mention of the effectiveness of technology in the new age banking that has given birth to various innovative products and practices in the banking. Thus, the researcher has attempted to find the concepts of new age banking that benefit the customers. It is the IT enabled new age banking that makes the entire financial transactions and products to be more effective with the help of efficient delivery channel called technology. The expected efficiency has not properly reached the end users at one side and on the other there are plenty of expectations about the IT enabled new age banking. Considering all these aspects, the researcher has designed an idea of research in the perspective of efficiency and effectiveness of new age banking.

#### **Need for the study:**

It is almost three decades since the concepts of Liberalization, Privatization and Globalization is endorsed to all spheres of economy that has due consideration for the manufacturing and service sectors. The most important aspect is the service sector supported by the IT enabled services. Of all the service sectors, the banking sector is the most important one that has connect to IT enabled services and the day to day financial transactions. The traditional banking services are transformed to modern banking services only through the adoption of technology which is called as automation. There are few yardsticks, namely communication factors, anywhere anytime banking, automation, efficiency and innovative products with which banks try to reach the customers of all segments, be it individual or business customers. The understanding of the above perspectives of new age banking needs to be researched as there are positive and negative views over these factors. This background had formed an idea of research in the mind of the researcher that is considered to be the basis for the research.

**Scope of the study:**

This topic is very wide and elaborate in all aspects as it has a long history focusing on various perspectives of effectiveness of new age banking. There are many dimensions in the application of technology in banking, the research has given an ideal focus and direction to the researcher with aim of analysing the effectiveness of new age banking from the perspective of customers whose views are very important to plan, design and execute innovative ideas. Hence, the scope of the study is limited to analyse the effectiveness of new age banking from the perspectives of customers who are the end users.

**Objectives of the Study:**

The objectives of the study are the following:

- To understand the technology enabled banking services perceived by customers.
- To evaluate the impact of IT enabled new age banking system in relation to the various factors of banking services.
- To find the most dominating factor of new age banking preferred by the customers of both public and private sector banks.
- To identify the pit falls in the IT enabled new age banking services in the light of the research and to offer suitable suggestions to make the service more effective.

**Scope of the study:**

The study is constructed with the support of the data collected from customers of the new age banking. In both the segments the rural and urban base is used to get a comparative data representation for the study. Both the private and public sector banks operating in rural areas and urban areas are covered in this study. Thus, the scope is limited to the public and private sector banks operating both in the rural and urban area are considered for the study.

**Research Methodology**

This is an empirical study based on survey method. The primary data relating to the study on the effectiveness of new age banking were collected from the customers with the help of interview schedule constructed in the light of pilot study. The secondary data relating to the study were collected from journals, magazines, newspapers, books, periodicals, bank documents and publications, RBI bulletin and through web sources & YouTube posts.

**Research Design**

The research design is the basic process and background that helps in the construction of the entire research outcome in an efficient manner. It includes the methodology more particularly the sample design, the construction of questionnaire (interview schedule), collection of data and the tools used. All these have been clearly explained for a better understanding.

**Sampling method:**

Customers who have the basic understanding of the new age banking were identified with the help of the branch heads of both private and public sector banks in the study area. Of the available

private and public sector banks, stratification is made to extract the data from the customers numbering 415 from public sector banks and 412 from private sector banks. The number of samples is concluded by identifying the total customers with basic knowledge in new age banking in both private and public sector banks. First of all, the bank branches were identified and later through interaction with the bankers, the prospective customers were identified, later the total sample and of which 5 percent were identified to take part in the research. In both the sectors of the bank, the finalized sample was 800 which was finalised after data elimination. The prime focus of new age banking for customers such as the effective communication with customers, anywhere anytime banking feature, automation of services, efficiency in rendering services and innovative products were the considered factors for the study. Thus, a stratified sampling method is followed in case of the selection of customers for the study.

### **Construction of Questionnaire:**

The one to one interview with the bankers and the comprehensive review of literatures have helped the researcher to construct the questionnaire for the collection of data in a systematic manner. The factors and the variables to be covered is identified in support of the topic of the study viz., viz., the EFFECTIVENESS OF TECHNOLOGY AND ITS IMPACT ON NEW AGE BANKING SYSTEM. The questionnaire was revised and redrafted in the light of criticisms and suggestions forwarded by the bankers and customers at the time of pilot study (pre-test).

### **Framework of Analysis:**

The collected data were processed through EXCEL and SPSS (Statistical Package for Social Sciences). The statistical analysis gives meaning to the numbers in the form of data. To have accuracy over the research the following statistical tools were used

- Cross tabulation
- Chi Square test
- Factor Analysis

### **LIMITATIONS OF THE STUDY**

1. The researcher was not able to approach the all the customers easily to collect the data.
2. The researcher too found non-cooperative respondents while collecting the data to some extent.

### **Analysis – Customer Perspective**

#### **I: Impact of Information Technology on New Age Banking System – Communication factors**

Factor analysis is carried out for reducing the dimensions of the variables. The variables for communication considered to be significant to the New age banking through IT revolution has been identified and presented in the below table,

#### **Factor Analysis - KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.927
Bartlett's Test of Sphericity	Approx. Chi-Square	5139.732
	Df	253
	P value	0.000
	<b>Sig.</b>	<b>&lt;0.01</b>

**Source: Field Data**

From the above table the Kaiser Meyer Olkin measures of sampling adequacy and Bartlett's Test of Sphericity shows that the factor analysis is valid for the data

#### Communication Factors

Variables	Factor Loadings	Communality
I am helpful by receiving SMS and e-mails on updating of interest rates	.700	.754
New products are communicated very easily	.688	.701
Educational messages are very useful	.683	.680
I receive warnings and pre-cautionary measures frequently	.678	.602
Balance information communicated through SMS	.657	.595
All debit and credit are informed me through SMS	.622	.737
Initial Eigen value	3.768	
Percentage	16.383	

**Source: Field Data**

Relating to the communication there are six factors considered and the most important factor is receiving information is receiving the SMS and e-mails on updating of interest rates with a score of 0.700 followed by new products are communicated very easily with a score 0.688. The other communication factors like warnings and precautions, balance information, debit and credit card information also have a score of more than 60 percent. It shows that the communication features are so effective to help the customers in all spheres of their business and transactions with the banks.

#### II: Impact of Information Technology on New Age Banking System – Anytime anywhere banking factors:

Factor analysis is carried out for reducing the dimensions of the variables. The variables for communication considered to be significant to the New age banking through IT revolution has been identified and presented in the below table,

#### Factor Analysis - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.927
Bartlett's Test of Sphericity	Approx. Chi-Square	5139.732
	Df	253
	P value	0.000
	Sig.	<0.01

**Source: Field Data**

From the above table the Kaiser Meyer Olkin measures of sampling adequacy and Bartlett's Test of Sphericity shows that the factor analysis is valid for the data

#### Anytime Anywhere

Variables	Factor Loadings	Communality
Pay digital anytime anywhere	.834	.778

IT made banks open round the clock	.720	.718
Use banking services at anywhere in the world	.655	.632
Can shop online using digital payment methods	.635	.652
Cheque withdrawal and deposit at any branch	.622	.635
Online opening of account and other transacting features easy	.622	.629
Initial Eigen value	2.909	
Percentage	12.649	

**Source: Field Data.**

Any time anywhere is the new phenomenon in the banking service that is welcomed by everyone who avail modern banking services. There are six factors considered and the most important factor is the pay digital anytime anywhere with a score of 0.834 followed by IT made banks open round the clock with 0.720, the other factors use of banking services at anywhere in the world, cheque deposit and withdrawal at any branch and online opening of account and other transacting features easy has a score more than 60 percent scores. It shows that the convenience of anytime anywhere features are so effective to help the customers in all spheres of their business and transactions with the banks.

### III: Impact of Information Technology on New Age Banking System – Automation

Factor analysis is carried out for reducing the dimensions of the variables. The variables for communication considered to be significant to the New age banking through IT revolution has been identified and presented in the below table,

#### Factor Analysis - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.927
Bartlett's Test of Sphericity	Approx. Chi-Square	5139.732
	df	253
	P value	0.000
	<b>Sig.</b>	<b>&lt;0.01</b>

**Source: Field Data**

From the above table the Kaiser Meyer Olkin measures of sampling adequacy and Bartlett's Test of Sphericity shows that the factor analysis is valid for the data

#### Automation:

Variables	Factor Loadings	Communality
Passbook printing machine is a revelation	.705	.689
ATMs enable modern bank customer to withdraw money at non-banking hours also	.690	.575
Deposit money through deposit ATMs (CDM)	.551	.552
Avail auto bill payments with pre-request	.543	.407
Instant messages for transactions	.541	.402
Mobile enabled Banking transactions	.533	.800
Initial Eigen value	2.854	
Percentage	12.410	

**Source: Field Data**

Automation is the most important phenomenon of the new age banking and hence the question relating to automation with reference to six factors are collection and is analysed with factor analysis. The independent power to the customers is the most applauding factor such as printing of pass book with 0.705 followed by ATM enabled modern bank with money withdrawal features with 0.690. the other factors Deposit in ATM machine features, Auto bill payment pre request, instant message for transactions and the mobile enabled banking transactions has more than 50 percent score. It shows that the automation features are so effective to help the customers in all spheres of their business and transactions with the banks.

#### IV: Impact of Information Technology on New Age Banking System – Efficiency

Factor analysis is carried out for reducing the dimensions of the variables. The variables for communication considered to be significant to the New age banking through IT revolution has been identified and presented in the below table,

##### Factor Analysis - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.927
Bartlett's Test of Sphericity	Approx. Chi-Square	5139.732
	df	253
	P value	0.000
	Sig.	<0.01

##### Source: Field Data

From the above table the Kaiser Meyer Olkin measures of sampling adequacy and Bartlett's Test of Sphericity shows that the factor analysis is valid for the data

##### Efficiency

Variables	Factor Loadings	Communality
Transaction time reduced in the modern banking	.713	.700
Computerised banking eliminates error	.651	.687
Modern banking is efficient than traditional banking	.545	.707
I can assess my data anytime anywhere	.538	.607
At home banking through internet	.533	.601
Mobile banking and payment banking features	.530	.576
Initial Eigen value	2.847	
Percentage	12.378	

##### Source: Field Data

Efficiency is the core concept of new age banking and hence an attempt is made to find the efficiency of the banking system after introduction of innovations and in these six factors are considered. The factor transaction time reduced in modern banking has a high score of 0.713 followed by computerised banking eliminates error with a score of 0.651. There are other factors such as modern banking is efficient than traditional banking, access data anytime anywhere, at home banking through internet and mobile features have score of 50 percent and above. It shows that the efficiency features are so effective to help the customers in all spheres of their business and transactions with the banks.

### V: Impact of Information Technology on New Age Banking System – Product Factors

Factor analysis is carried out for reducing the dimensions of the variables. The variables for communication considered to be significant to the New age banking through IT revolution has been identified and presented in the below table,

#### Factor Analysis - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.927
Bartlett's Test of Sphericity	Approx. Chi-Square	4139.732
	Df	457
	P value	0.000
	<b>Sig.</b>	<b>&lt;0.01</b>

#### Source: Field Data

From the above table the Kaiser Meyer Olkin measures of sampling adequacy and Bartlett's Test of Sphericity shows that the factor analysis is valid for the data

#### Products

Variables	Factor Loadings	Communality
IT enables card payments system	.712	.620
IT enables depositing money anywhere features	.712	.642
IT enabled bill payment through online	.587	.574
IT enabled transfer funds to any account in the world	.542	.574
IT enabled bank to introduce e-banking and mobile banking services	.527	.701
IT enabled paperless loan and other means of banking	.511	.659
Initial Eigen value	2.636	
Percentage	11.460	

#### Source: Field Data

After automation products stand to attract and impress upon customers and the primary products are IT enabled card payment system with a factor score of 0.712 and the IT enabled depositing money anywhere with similar score. The other factors bill payment through online, IT enabled transfer funds to any account in the world, IT enabled bank to introduce e-banking and mobile banking services and IT enabled paperless loan and other means of banking has score above 50 percent. It shows that the product features are so effective to help the customers in all spheres of their business and transactions with the banks.

### FINDINGS

1. **Communication Factors:** Relating to the communication there are six factors considered and the most important factor is receiving information is receiving the SMS and e-mails on updating of interest rates with a score of 0.700 followed by new products are communicated very easily with a score 0.688. The other communication factors like warnings and precautions, balance information, debit and credit card information also has a score of more than 60 percent. It shows that the communication features are so effective to help the customers in all spheres of their business and transactions with the banks.

2. **Anytime Anywhere:** Any time anywhere is the new phenomenon in the banking service that is welcomed by everyone who avail modern banking services. There are six factors considered and the most important factor is the pay digital anytime anywhere with a score of 0.834 followed by IT made banks open round the clock with 0.720, the other factors use of banking services at anywhere in the world, cheque deposit and withdrawal at any branch and online opening of account and other transacting features easy has a score more than 60 percent scores. It shows that the convenience of anytime anywhere features are so effective to help the customers in all spheres of their business and transactions with the banks.
3. **Automation:** Automation is the most important phenomenon of the new age banking and hence the question relating to automation with reference to six factors are collection and is analysed with factor analysis. The independent power to the customers is the most applauding factor such as printing of pass book with 0.705 followed by ATM enabled modern bank with money withdrawal features with 0.690. the other factors Deposit in ATM machine features, Auto bill payment pre request, instant message for transactions and the mobile enabled banking transactions has more than 50 percent score. It shows that the automation features are so effective to help the customers in all spheres of their business and transactions with the banks.
4. **Efficiency:** Efficiency is the core concept of new age banking and hence an attempt is made to find the efficiency of the banking system after introduction of innovations and in these six factors are considered. The factor transaction time reduced in modern banking has a high score of 0.713 followed by computerised banking eliminates error with a score of 0.651. There are other factors such as modern banking is efficient than traditional banking, access data anytime anywhere, at home banking through internet and mobile features have score of 50 percent and above. It shows that the efficiency features are so effective to help the customers in all spheres of their business and transactions with the banks.
5. **Products:** After automation products stand to attract and impress upon customers and the primary products are IT enabled card payment system with a factor score of 0.712 and the IT enabled depositing money anywhere with similar score. The other factors bill payment through online, IT enabled transfer funds to any account in the world, IT enabled bank to introduce e-banking and mobile banking services and IT enabled paperless loan and other means of banking has score above 50 percent. It shows that the product features are so effective to help the customers in all spheres of their business and transactions with the banks.

## SUGGESTIONS

1. Relating to communication features, beyond SMS, E-Mail and other customer connecting features, the banker must establish good connect with customers and ensure that the home branch customers are communicated in all aspects of transactions and safety prospects are attended to with due care and consideration.
2. At the introduction of new age banking, anywhere anytime was the most attractive feature to every single customer of the bank. It is also felt that the fees, charges, restrictions and other control measures lead the customers to be dissatisfied. It is more important to the bank to note the grievances of customers and act in an expected manner to establish a long-lasting satisfied customer relationship.
3. Automation ensures convenience to customers in all aspects of banking. It has been initiated with debit and credit cards, later to networking and new the initiative of payment banking system. The growth in the technology gives lot of convenience to customers, but

still the service charges lead to dissatisfaction. Eg: IMPS charges for every single transaction with GST is not well received by customers.

4. Efficiency in the IT enabled services in the Indian Banking Sector is on high stud. In this regard, both private and public sector banks have updated the technology features to make their services to be more effective and impressive. The efficient service features need to be informed to customers with proper training, orientation and education that lead to IT literate customers.
5. Product related innovative features are the major banking strategy. The multiple products beyond various types of accounts, debit and credit cards and online facilities need to be informed to customers with regular information sharing with customers.

## CONCLUSION

Though the new age banking has thrown lot of challenges among the customers who are of a mixed group with technology literacy and illiteracy, the banking sectors have systematically introduced and attracted customers to get into the IT enabled new age banking services. It is because of the customised services beyond traditional banking activities of effective communication with customers, 24 x 7 service availability, anywhere anytime banking features, automation led smart banking, innovative banking products that can easily be accessed and efficiency in all aspects of services with core banking features. The above said features identified and introduced for the benefit of customers had a wide reach and understanding regularly and periodically. The competitive spirit among the public and private sector banks has enabled a fast introduction of innovative banking services earlier and still it continues effectively. Thus, the overall development and the benefit of new age banking have given an astounding welcome and appreciation among the customers beyond their age, gender, income, education, employment, nativity and awareness, it is because of the customised technology that is simple and user friendly.

In the perspective of functioning of banks, the customers are comfortable and happy about the effective customer services, operational efficiency, effective communication, productivity features and new and innovative product development. Thus, the new age banking has given green signal to customers due to its features and the innovative ideas of banks. All these features of the IT enabled new age banking has created an automatic acceptance among the customers. If the banking sector tries to satisfy all the customer groups beyond their capacity then the digital transformation acceptance percentage may be more and make the entire banking system to digital to prove the new age banking to be more attractive and accepted form of banking.

### Books and Journals Referred:

1. Rangarajan, C. (2000), 'Banking in the Hi- Tech. Environment,' *The Journal of The Indian Institute of Bankers*, Jan.-Mar. 2000, Indian Institute of Bankers, Mumbai.
2. Nirajan, (2000), 'Internet Banking is Here, *Business World*, 3rd April, 2000.
3. Avasthi, G.P. and Sharma, M. (2000-01) 'Information Technology in Banking: Challenges for Regulators', *Prajnam*, Vol XXIX, No. 4, pp. 3 – 17
4. Shastri, R.V. (2001), 'Technology for Banks in India: Challenges,' *IBA Bulletin*, Indian Banks' Association, Vol. XXIII No.3, March 2001.
5. Pathrose, P.P. (2001), "Hi-Tech. Banking- Prospects and Problems", *IBA Bulletin*, Vol. XXIII, No.7, July 2001, Indian Banks' Association, Mumbai.

6. Kohli, S.S. (2001), 'Indian Banking Industry: Emerging Challenges.' IBA Bulletin, Vol. XXIII, No.3 March 2001, Indian Banks' Association, Mumbai.
7. Bhasin, T.M. (2001): "E-Commerce in Indian Banking", IBA Bulletin, Vol. XXIII Nos. 4 and 5 AprilMay, 2001, Indian Banks' Association, Mumbai.
8. Rao, N.V. (2020), 'Changing Indian Banking Scenario: A Paradigm Shift,' IBA Bulletin, Vol. XXIV No. I, Indian Banks' Association (IBA), Mumbai, pp. 12-20.
9. B. Janki, (2012), "Unleashing Employee Productivity: Need for a Paradigm Shift", IBA Bulletin, Vol. XXIV No.3, Indian Banks Association (IBA), March 2002, pp.7-9.
10. Balasubramanya S. "IT wave breaks over banking", THE CITY, Aug – Sept 2002
11. Trivedi, A.K. (2013), "Indian Banking: Managing Transformation", IBA