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### A Study of Factors Affecting Customer's E-Banking Technology Adaptation and Satisfaction

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**Abstract:** The main objective of Electronic Payment System is to facilitate a provision of a payment system for the future that combines the much valued attributes of safety, security and universal reach with technological solutions which enable faster processing, enhanced convenience and the extraction and use of valuable information that accompanies payments. The main aim of this research is to study the factors affecting the technology adoption banking products (E-Banking and digital banking) by the customers. The secondary aim is to establish the relationship between increasing financial Technology / digital banking usage and improving customer satisfaction and effectiveness in context with security and risk management. e various factors that why many bank customers are initially not ready to accept e –banking products because of lack of trust and awareness of the features of products. Why people still have focus on paper based payment systems instead of digital banking products and measuring their customer satisfaction levels. Though the trends shows the increase in usage of e- banking products but paper less and cash less vision of Indian banking system still appears to be far off.

Various factors like reliability, accessibility, accuracy, responsiveness, faster resolution of customer issues in facing initial internet banking problems impact customer decision. There is a positive relationship between increasing financial technology /digital banking with increasing customer satisfaction in modern technology based universal banking system.

There are very few studies on the e-banking adaptation, improving customer service and satisfaction in India in respect to reducing costs and minimizing frauds which have examine. Therefore, this research will get a great opportunity to analyze the situation and pros and cons of this sector. In addition, technological innovation and its impact will be clearly assessed. Earlier studies have covered only the demographic profile of customers where as this descriptive research covers customers, bankers – both branch / circle / head office, retail branch officials as well as regulators view to plug the research problem.

**Keywords:** E-Banking, Internet banking, Cyber Crimes, Real Time Gross Settlement, Mobile-Banking, Customer behaviour

## INTRODUCTION

Customer Services thrives on trust and confidence of the customer on the bank who provides 24 by 7 effective financial services, hence a qualitative customer services is a prerequisite for developing a vibrant banking system. Customer services has come to occupy the center stage of operations in the-Banking Industry in India. The-Banking system in India today has perhaps the largest outreach for delivery of financial services and is also serving as an important conduit to support the growth momentum. While the coverage has been expanding day by day, the quality and content of delivery of customer service has assumed new dimensions. A large number of banks also offer banking on the telephone or internet or mobile platforms (restricted facilities). Money transfer is an area that has been largely benefitted through technological developments. RBI payment and settlement system vision 2018 was released on 23<sup>rd</sup> June, 2016 with the vision “Building Best of class payment and settlement system for a” less cash “India through responsive regulation, robust infrastructure, effective supervision, customer centricity.

Over the last decade technology has transformed the landscape of Indian banking. Implementation of core-Banking platform has automated basic processes, enabled the movement to a single customer view and allowed for optimization of work across branch and hub network. Core-Banking platform have also given banks a strong launch pad to offer digital channel capabilities — almost all banks today are feverishly building out their online and mobile channel offerings. ATM deployments and technology-enabled business correspondent (BC) network have allowed banks to service large parts of the Indian hinterland. The performance of banking activities via the Internet. Online-Banking is also known as “Internet banking” or “Web banking or E-Banking or Net banking.” A good online bank will offer customers just about every service traditionally available through a local branch, including accepting deposits (which is done online or through the mail), paying interest on savings and providing an online bill payment system.

Online-Banking (or Internet banking or E-banking) allows customers of a financial institution to conduct financial transactions on a secured website operated by the institution, which can be a retail bank, virtual bank, credit union or building society. Responding to Basel norms and a more aggressive supervisory regime, banks have undertaken risk and compliance management system implementations. Information management and analytics are in focus as banks have built out large data warehouses in an attempt to leverage their data assets to better understand, sell and serve their customers. All this points to a flourishing industry, focused on technological innovation. However, while there has been significant action, considerable amount remains to be done. Risk systems are still deployed in silos as banks work toward their enterprise risk management agendas. Many data warehousing programs in the industry are floundering as banks struggle to move from “consolidating information” to “gleaning insight” from their information management investments.

Due to emergence of global economy, e-commerce and e-business have increasingly become a necessary component of business strategy and a strong catalyst for economic development. The application of E-banking has been demonstrated as an effectual of costs reduction, risk management and providing quick services to the customers. Now a day, E-banking services have already ensured opportunities to reduce expenditures on physical structures. However, in some previous studies it has been showed that, E-Banking helped banks and financial institutions to reduce costs, increase revenue, increase customer convenience (Halpern, 2001). It is really significant to analyze the actual situation of customers’ satisfaction in banking sector.

## LITERATURE REVIEW

Indian Banking and Payment System have undergone revolutionary change in the last three decades from manual banking systems to e-Banking or digital banking systems. Opening up of Indian economy in 1990's with the winds of change leading to globalization, liberalization and computerization, narrow banking systems also changes to the universal banking system. Technology has played an important role with new innovative digital banking products to attract the new set of customers with major focus on young generations.

Various previous research paper and studies have suggested the various factors that impact customer's perception and decision on adaptation of e-Banking products and customer satisfaction measures.

Al Ashban and Burney, (2001) - Currently, the-Banking industry is facing increasingly demanding customers and quickly eroding competitive edges. Recent technological breakthroughs in various areas, however, offer opportunities for the banks to excel in customer service quality and convenience. One area of major breakthroughs is the service delivery systems that are reshaping the-Banking business radically. The results also indicate that in general Saudi consumers' income levels and education play a vital role in their adoption and usage of tele banking technology.

Kolodinsky *et al.* (2004) attempts answer to whether there is an electronic banking (e banking) revolution in the USA? Millions of Americans are currently using a variety of e banking technologies and millions more are expected to come "online." However, millions of others have not or will not. They explore factors that affect the adoption or intention to adopt three e banking technologies and changes in these factors over time. Using a Federal Reserve Board commissioned data set, the paper finds that relative advantage, /simplicity, compatibility, observability, risk tolerance, and product involvement are associated with adoption. Income, assets, education, gender and marital status, and age also affect adoption. Adoption changed over time, but the impacts of other factors on adoption have not changed. Implications for both the-Banking industry and public policy are discussed.

Joseph *et al.* (2005) in their current exploratory study attempt to discover the underlying areas of dissatisfaction associated with the-Banking experience in the UK, particularly as it relates to the implementation of new service delivery technology in the-Banking industry.

Herington and Weaven, (2009) explore the measurement of e service quality for e retail banking, the importance of e service quality dimensions to e retail bank customers, and the relationship between e service quality and customer satisfaction. A four factor solution (E ServQual) represented by "personal needs", "site organisation", "user friendliness" and "efficiency" is found, with all factors rated as important. E ServQual is found to be a predictor of overall customer satisfaction with banking performance, but "efficiency" is not found to be predictive. Overall satisfaction is lower than overall e service quality.

Kumar, *et al.* (2010) focus on to understand the influence of technology change in the-Banking sector by employing data envelopment analysis (DEA) and also to determine the change in total factor productivity (TFP) and its components, namely technical change and technical efficiency change. – The TFP growth over the entire period (1995 2006) was driven by technical change as compared to efficiency change, showing that technology and innovation had a greater impact than efficiency change, or the catch up effect. The fixed effects estimates of the determinants of TFP change and its components show that size, ownership and time period exert significant effect on technical change.

Wessels and Drennan, (2010) identify and test the key motivators and inhibitors for consumer acceptance of mobile phone-Banking (M banking), particularly those that affect the consumer's attitude towards, and intention to use, this self service-Banking technology. Perceived usefulness, perceived risk, cost and compatibility were found to affect consumer acceptance of M banking. The results also support a mediation model, whereby attitude transfers the affects of the consumers' perceptions to their intention to use M banking.

Chong *et al.* (2010)- aim to empirically examine the factors that affect the adoption of online-Banking in Vietnam. Perceived usefulness, perceived ease of use, trust and government support were examined to determine if these factors are affecting online-Banking adoption. The results showed that perceived usefulness, trust and government support all positively associated with the intention to use online-Banking in Vietnam. Contrary to the technology acceptance model, perceived ease of use was found to be not significant in this study.

Sadeghi and Hanzaee, (2010) seek to investigate the key factors underlying customer satisfaction with electronic banking services in an Islamic country, Iran. The paper provides a model of seven factors on the following dimensions: convenience, accessibility, accuracy, security, usefulness, bank image, and web site design. Some of these factors illustrate a significant statistical difference between males and females.

Ankit and Bisht, (2012) - extend the technology acceptance model (TAM) in the context of internet banking adoption in India under security and privacy threat. The paper reveals that perceived risk has a negative impact on behavioral intention of internet banking adoption and trust has a negative impact on perceived risk. A well-designed web site was also found to be helpful in facilitating easier use and also minimizing perceived risk concerns.

Rajaobelina *et al.* (2013) classify online-Banking customers using demographic and relationship based variables and describe their profiles. This study provides better understanding of online-Banking consumer segments and offers financial institutions relevant descriptive information on each profile. This information should help the implementation of tailored marketing strategies to improve the development and maintenance of online relationships with each of the six customer segments.

Raza *et al.* (2015) determine the effects of service quality dimensions on customer satisfaction in Pakistan by using the SERVQUAL model. The reliability analysis shows that all dimensions are reliable. Results of the factor analysis confirm the grouping of adopted questioner. At last, the regression analysis indicates a significant positive relationship between assurance, tangibility, reliability and responsiveness with customer satisfaction. Conversely, empathy shows a positive but insignificant effect on the customer satisfaction.

Kaushik and Rahman, (2015) analyze the various antecedent beliefs predicting customers' attitudes toward, and adoption of, self-service technologies (SSTs) available in the-Banking industry. The results of the comparative analysis showed that antecedent beliefs affecting adopters' attitude vary across different self-service-Banking technologies SSBTs. It extends and tests the technology acceptance model (TAM) by including two additional antecedents from the theories of adoption behavior.

(Amin, 2016) examines the internet banking service quality and its implication on e-customer satisfaction and e-customer loyalty. The results confirmed that the all four dimensions (personal need, site organization,

user friendliness, and efficiency of website) are distinct constructs. The results also indicated that internet banking service quality consisting of four dimensions has appropriate reliability and each dimensions has a positive significant relationship with internet banking service quality. The efficiency of banking website is the important aspect of internet banking service quality. The finding found that the relationship between internet banking service quality, e-customer satisfaction and e-customer loyalty are significant.

### **GROWTH & INCREASING TRENDS OF RETAIL ELECTRONIC PAYMENTS**

Since 2012-13, all segments of electronic payments, particularly retail electronic payments have shown healthy growth both in terms of volume and value of usage. Comparative Analysis was studied for the increasing volumes of E payments adaptation and usage by the customers. For example, RTGS and NEFT volumes increased almost threefold between 2013 and 2016 reflecting greater adoption of the digital banking system by all segments of users.. RTGS value has increased from Rs.1,026,350.05 millions In 2012 -13 to Rs. 1,035,551.64 billion.

**Table 1**  
**RTGS Volume**

<i>RTGS Volume (In Millions)</i>	<i>2012-13</i>	<i>2015-16</i>
RTGS	68.52	98.34
Customer Transactions	63.99	93.95
Interbank Transactions	4.52	4.37
Interbank Clearing	0.009	0.016

NEFT volumes has increased tremendously 217% from Rs. 394.13 millions to 1252.88 millions where as value has increased from Rs. 29022.13 in 2012 -13 to Rs. 83273.11 billion.

**Table 2**  
**Trends**

	<i>NEFT Volume</i>	<i>Mobile-Banking</i>	<i>No of ATMS</i>
<i>Year</i>	<i>Millions</i>	<i>Millions</i>	<i>Millions</i>
2012-13	394.13	53.3	114014
2015-16	1252.88	389.49	212061

Similarly, with increasing number of banks offering mobile-Banking services and driven by the growth in e-commerce and use of mobile payment applications, the volume of mobile-Banking transactions has increased nearly seven-fold and the value of transactions has shown a steep rise. Mobile-Banking value has increased tremendously from Rs, 59.90 billion to Rs. 4040.91 billion in 2015 -2016 reflecting 6635 % increase.

Number of ATMSs has shown 86% increase in four years from 114014 to 212061 where as point of sales has increase percent growth of 62% from 854290 to 1385668.

**Table 3**  
**Volumes of Mobile-Banking value**

<i>Year</i>	<i>No of Point of Sales</i>	<i>Credit Card</i>	<i>Debit Card</i>	<i>Prepaid Instruments</i>	<i>IMPS Transaction Volume</i>
	<i>Millions</i>	<i>Millions</i>	<i>Millions</i>	<i>Millions</i>	<i>Millions</i>
2012-13	854290	19.55	331.2	66.94	1.23
2015-16	1385668	24.51	661.82	748.02	220.81

Card transactions have also grown significantly at both ATMs as well as at the Point-of-Sale (POS) with the growth in debit card usage at POS picking up significantly. Debit cards transactions have almost double where as Credit Card transactions reflects slow increase. The growth in volume and value of transactions using prepaid payment instruments (PPIs) issued by banks and authorized non-bank entities has also been significant. The volume and value in Immediate Payment Service (IMPS) has also grown significantly with the development of the IMPS as a multi-channel system providing various options to customers to originate transactions.

Cheque payments, on the other hand, are showing a declining trend in terms of volume as well as value between 2013 and 2016 as MICR Clearing have been replaced by Cheque Truncation Clearing.

**Table 4**  
**MICR Vs CTS**

<i>MICR Clearing</i>		<i>CTS Clearing</i>	
<i>Year</i>	<i>Millions</i>	<i>Year</i>	<i>Millions</i>
2012-13	823.31	2012-13	275.04
2015-16	No Figures Available as MICR Clearing has been replaced by CTS	2015-16	958.39

The above key parameters E Payments trends completely show the paradigm shift in the Indian Bank customers from manual payment systems to E payment systems. Online financial services in India is expected to be a Rs 15,000-crore market by 2020, up about 15 times from Rs 1,063 crore in 2014, led by a surge in usage of mobile wallets and insurance services, among others, according to a report from investment bank MAPE Advisory Group and consulting firm MXV.

The mobile wallets business, led by Oxigen and Paytm, has the potential to be worth Rs 5,793 crore in the next four years, from a meagre Rs 179 crore in 2014, the report said. Insurance services are estimated to grow to Rs 4,600 crore, from Rs 484 crore. The number of transactions through mobile wallets has risen more than seven times to 256 million, from 33 million in the last two years. That has outpaced mobile-Banking transactions, which grew to 172 million from 53 million between 2014 and 2015. (Source : Times of India, dated 14<sup>th</sup> July, 2016).



## DATA COLLECTION AND PRESENTATION

In the modern Digital Banking scenario customer perception for e-Banking adaptation and preference among customer for e-banking services of banks is differ from one customer to other customer. Therefore to study and analyse customer preference and satisfaction of different customer, different research methodologies have been used such as usage of e-banking service, most preferred service, convenience, security, accessibility, satisfaction level of customer using E-Banking products both electronic payment settlement systems like MICR Clearing, CTS,RTGS, NEFT, ECS / NACH, electronic products like Debit Card, Credit Card, Mobile payments IMPS and electronic point of sales ATMs, Kiosks, swipe machines at merchant establishments.

**Table 5**  
**Frequency Analysis of Demographic Variables**

<i>S. No.</i>	<i>Variables</i>	<i>Category</i>	<i>location Frequency</i>	<i>Delhi NCR Percentage frequency</i>
1	Gender	Male	150	75.00
		Female	50	25.00
2	Age (Years)	18-25	46	23.00
		26 -35	55	27.50
		36- 45	61	30.50
		45 -60	24	12.00
		60 and above	14	7.00
3	Educational Quaification	Senior Secondary (12th Class	25	7.50
		Under Graduate	70	32.50
		Post Graduate	75	27.50
		Phd	15	5.00
		other	15	7.50
4	Occupation	Business	25	12.50
		Employee	70	35.00
		Professional	25	12.50
		Student	70	35.00
		Other	10	5.00

*Source:* Primary Data Collected in Delhi NCR Region with 200 Customers having Bank Accounts during 2015- 2016

Above Table shows that most of the respondents are men (75.0%), they are using e-banking service in research area as compared to women in the city. On a Percentage basis, 26-35 age group falls on 27 %, similarly 36-45 age group falls on the 30/50% percentage. 32.5% of respondent's qualification is UG and also same percentage of qualification is PG too. Out of 200 respondents, 35% of them are employee and as well as student and remaining fall under other category.

Table 6: Usage of E-Banking Services by Respondents shows that 63% of the respondents (bank customers use on line-Banking transactions and 37% do not use as some respondents replied they are aware but do not have such need.

**Table 6**  
**Usage of E-Banking Services by Respondents**

<i>Usage of</i>	<i>On Line</i>	<i>Banking</i>	<i>Transactions</i>	
Total Respondents	Yes	No	% Yes	% No
200	126	74	63	37

**Table 7**  
**Demographics**

<i>S No</i>	<i>Gender</i>	<i>Total</i>	<i>Usage</i>	<i>% Usage</i>
1	Male	150	102	68
2	Female	50	24	48
3	Total	200	126	63

Table 8 : Relationship Between Occupation wise Respondents with Easy Access and Use of their respective Bank Website shows that easy access and quality of bank website also plays an important role in influencing the customer’s decision to apply for on line internet banking services. 84% respondent said that easy access to website is available through desk top, lap tops or mobile through wifi bit out of that only 71% use for financial transactions and 29% used for view only for statement for account balances, investments and loans / credit card outstanding. But at times connectivity or Wifi is not available so they do not use. The banks have marketing opportunity to improve this usage of on line-Banking services from 63% to 82% if through awareness and explaining the benefits of e-Banking they can move the customers who are not availing and those who are availing are not opting for financial transaction.

**Table 8**  
**Relationship Between Occupation wise Respondents with Easy Access and Use of their respective Bank Website**

<i>S No.</i>	<i>Occupation</i>	<i>Respondents</i>	<i>Easy Access</i>	<i>% Easy Access</i> <i>Bank Website</i>	<i>View</i> <i>Only</i>	<i>% View</i> <i>Bank</i> <i>Website</i>	<i>Financial</i> <i>Transactions</i>	<i>% Financial</i> <i>Transactions</i>
1	Business	25	20	80	5	25	15	75
2	Employee	70	50	71	16	32	30	60
3	Professional	25	25	100	0	0	24	100
4	Student	70	65	93	25	38	45	69
5	Others	10	7	70	3	43	4	57
	Total	200	167	84	49	29	118	71



**Survey Views of Retail Banking Branch Heads / Senior Management at Circle / Regional offices :** Table 9 shows that 25 banks selected for survey from the five categories of banks reflect that different banks are in different level of technology. New Generation private sector banks have advanced level of On line-Banking platforms since 2012 -13 where as now Public Sector banks and old generation private sector banks are also now catching up.

**Table 9**  
**Banks selected for survey**

<i>Public Sector Banks</i>	<i>Old Generation P Private Sector banks</i>	<i>New Generation Private Sector Banks</i>	<i>Foreign Banks</i>	<i>Cooperative Banks</i>
State Bank of India	Federal Bank Limited	ICICI Bank Limited	CITI Bank	Khatri Coop.Bank Ltd
Punjab National Bank	South Indian Bank	HDFC Bank Limited	Standard Chartered Bank	Saraswat Co-op Bank
Canara Bank	J&K Bank limited	AXIS Bank limited	Deutsche Bank Limited	Delhi State Co-op Bank
Orinetal Bank of Commerce		Kotak Mahindra Bank	HSBC	
Central Bank of India		Yes Bank Limited		
Bank of Baroda				
Bank of India				
Indian Overseas Bank				
Union Bank of India				
Allhabad Bank				

**Survey with 25 retail banking branch heads** were conducted face to face to understand the banker's point of view towards various factors of e-Banking implementation, customer perspectives for adaptation, risk management and customer satisfaction. Brief summary of survey is reflected in this table to find the answers to research purpose and gaps.

**Table 10**  
**Banks selected for Surveys**

<i>S No</i>	<i>Dimensions</i>	<i>Response Agree</i>	<i>Disagree</i>	<i>Suggestions</i>
1	Increase in marketing of banking and financial services	Yes (50)	No	1. Customer awareness has increased about bank products through websites 2. Time saving for both customers and bank officials 3. Yes marketing of banking prodcuts has increased
2	Evaluation of new technology Implementation	Yes (50)	NA	1. New Advance Technology software 2. Customer Survey

*contd. table 10*

S No	Dimensions	Response		Suggestions
		Agree	Disagree	
				2. Branches and marketing executives keep reporting customer 's requirements
3	Important factors impact customer adaptation of E-Banking	NA	NA	1. Bank Website 2. Any time Self service internet banking 3. perceived usefulness, risk and cost 4. Convenience 5. accessibility 6. accuracy 7. security 8. Bank Image. 9. Demographic Profile of customers
4	Assessment of Customer Satisfaction	Yes	NA	1. Customer Feedback 2. Customer Complaints 3. Meeting customer expectation through visits or call 4. SERVQUAL Model - Service quality dimensions
5	Advantages of Net banking	YES		
6	Frauds - Increase or Decrease	YES (Decreased)	No (Increase)	Check Frauds have reduced and Nature of frauds changed Customer to be more careful regarding passwords security and not sharing.
7	Reduction of cost	Yes	No	1. Paper cost reduced 2. Travel Time and Conveyance charges Reduced
8	Relationship between adoption of E-Banking & Customer Satisfaction			Positive relationship between assurance, reliability, accuracy, responsiveness and trust.
9	Indian banking System to be Checkless or cash less by the year : 2020, 2025, 2030 or Never	Yes (35) by 2030	No (15)	70 % respondents say that by 2030 E-Banking will reach 90% 30% respondents say it will continue in relation of 70: 30%

**Views of Retail Banking Staff at Branches:** From the above 25 banks selected, interview was conducted with two staff members each (25 x 2 = 50) at front office dealing with customer services. Main objective of this method is to understand their perspectives on customer behavior of adaptation of on line-Banking initially and when they accept the same after bank staff awareness and faster resolution of their issues. The main findings from this exercise was the one that, faster the rate of resolution of customer initially problem during the adoption phase, faster they accept the same so reliability, assurance and trust of bank staff is important. Second, On line-Banking system can not alone attract and retain the customer but they need allotment of one dedicated relationship manager at least for HNI customers.

### DATA ANALYSIS AND FINDINGS

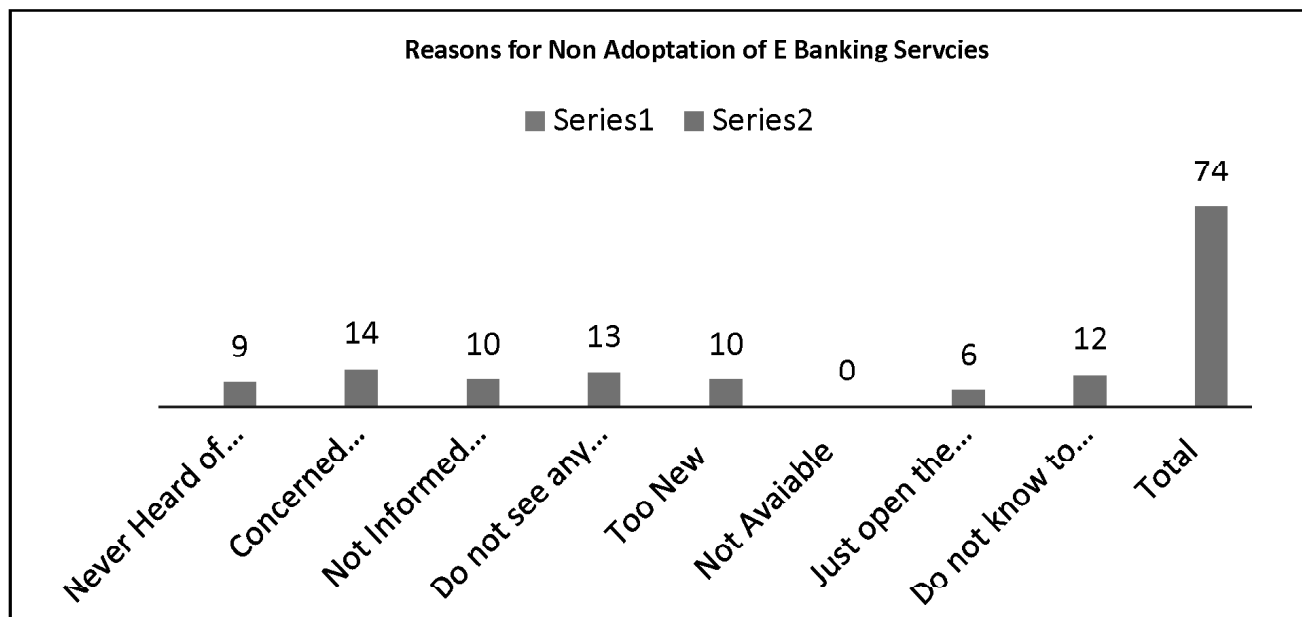
The survey also had an option for corporate to indicate their views in verbatim. The study of those comments and observations highlight the following needs with respect to electronic payments in India. Most Preferred On Line-Banking Services show that ATM usage alone ( 36) and E-Banking (50 ) consisting of ATM withdrawals, internet and mobile-Banking being used by the highest number of respondents is more preferred. 12 respondents were preferred mobile-Banking because new applications are introduced day by day by the information technology world.so it is highly useful to them to transact fraction of second using new mobile-Banking applications.

**Table 11**  
**Type of on Line-Banking Services**

<i>S No</i>	<i>Type of on Line-Banking Services</i>	<i>Figures</i>
	ATM	36
1	Internet Banking	14
2	Mobile-Banking	12
3	Telephone-Banking	6
4	SMS Banking	8
5	E-Banking (ATM, Internet & Mobile-Banking)	50
	Total Respondents 200 & Usage	126

It can be seen from our analysis of trends on of impact of technology on payment systems and customer satisfaction :

- Paper based payment instruments are declining – although they still constitute a large portion of payments by volume.



- Electronic payments are growing at a much better rate than paper based instruments. In fact, the share of value of electronic payments in the overall value is catching up with paper based value and if this trend continues, in a matter of few more years, in all countries where we studied, the value of payments through electronic payments will more than the value through paper based instruments.
- Countries are taking initiatives in implementing sound payment and settlement systems for the benefit of its customers and economy.

With reference to India, based on our study on individual customers, corporates, retail bankers and expert senior bankers, we have also seen that:

1. Indian customers – retail and corporate – are aware of the emerging payment options.
2. They are willing to move away from cheque based payment to these electronic payments.
3. That in India also, the contribution of electronic payment by value is closing with paper based instruments value – although by volume, they still have some catching up to do.
4. Central bank is aggressively promoting these payment options along with other banks to reduce the paper based transactions – including cash transactions and are being fairly successful in accomplishing the goal.

**Cost and Benefit:** Needless to say, all these electronic payment has technology as its backbone. These are also clear indication that the, in this e-age, customers are willing to accept changes and adopt the new age payments. In gender mostly the users are males. The usage of internet banking in females is very less. It is identified that only middle age people i.e age group between 21- 40 are using internet banking. Below 20 and above 40 age group people using less internet banking services.

The subsequent stages of payment evolution can typical Technology is not only making banking convenient for customers, it has also allowed banks to expand their businesses faster and bring down costs. The cost of servicing a customer is the highest at a branch followed by ATMs, online and mobile phones. When a customer walks into a branch to withdraw money, the cost to the bank may be as high as Rs 200 whereas an ATM transaction would cost around Rs 20 or even less, says Shyamal Saxena, General Manager, Integrated Distribution, South Asia, Standard Chartered Bank. Economies of scale will only bring down the cost further.

There is a tendency to discourage customers from visiting branches since it adds to the cost of the bank and is also inconvenient for customers. Moving to alternative channels is a win-win for both sides.

Banks are also discouraging direct interface with customers by levying charges for some transactions such as payment of credit card bills through cash or depositing cheques at bank counters instead of putting them in drop boxes.

Technology-based banking has also reduced the space required to set up bank branches. “Earlier, the physical infrastructure needed for a branch was, on an average, around 4,000 to 5,000 square feet. Now, banks are managing with an average of 1,000 to 1,500 square feet.

## CONCLUSION

RBI Payment System Vision 2015-2018 Implementation Road Map as mentioned above and BPSS recommendations are required to be strictly followed. The Retail payment System needs to be improved by developing appropriate applications and user-friendly websites with simple interface and local content. Knowledge of payment systems could be an element of intensive campaign for financial education as well as become an important tool for achieving financial inclusion and inclusive growth. There is a need to create World Class efficient, reliable, affordable and global standard payment systems.

Indian banks deployed technology-intensive solutions to increase revenue, enhance customer experience, optimize cost structure and manage enterprise risk. However, there is a wide variation in the technology agendas and implementation capability across different players of the-Banking industry: Tap, click and swipe-these are the new sounds of money. Modern technology is fast replacing paper with computer files, bank tellers with automated teller machines (ATMs) and file cabinets with server racks, And banks too have come a long way from the old days of manually recording transactions in registers and tallying them up at the end of the day.

Robust and Dynamic Indian Electronic Payment & Settlement System will meet all these challenges for the benefit of their countrymen and achieve its mission statement “The Establishment of safe, secure, sound and efficient payment and settlement systems for the country.” In sum while cheque volumes is shrinking and electronic payments are growing, the payers who are making difference are consumers not businesses. “The death of a distance, which is a by product of technology has become a reality in the-Banking sector and technology will continue its impact till “The death of paper “ and entire payment system move to risk free on line & real time gross settlement system where finality of the payment is ensured and confirmed to both sender and receiver. One should not forget that technology is not a last mile, it's a support function like HR, Audit etc but it have and will continue to positive impact on payment systems by increasing access to customers and making it more secure and efficient. The success of implementation of advanced banking technology depends upon increasing customer satisfaction and improvement in customer services rendered to the customer in branches or through on line-Banking systems.

## REFERENCES

- Alain Yee Loong Chong, Keng Boon Ooi, Binshan Lin, Boon In Tan, (2010), “Online-Banking adoption: an empirical analysis”, *International Journal of Bank Marketing*, Vol. 28 Iss: 4, pp. 267-287.
- Ankit Keshwani, Shailendra Singh Bisht (2012), “The Impact of trust and perceived risk on internet banking adoption In India : An extension of technology acceptance model, *International Journal of marketing*, Vol. 30, Iss : 4 pp 303-322.
- Aref A. Al Ashban, Mohammed A. Burney, (2001), “Customer adoption of tele banking technology:the case of Saudi Arabia”, *International Journal of Bank Marketing*, Vol. 19 Iss: 5, pp. 191-201.
- Arun Kumar Kaushik , Zillur Rahman, (2015), “Innovation adoption across self-service-Banking technologies in India”, *International Journal of Bank Marketing*, Vol. 33 Iss: 2, pp. 96-121.
- Carmel Herington, Scott Weaven, (2009), “E retailing by banks: e service quality and its importance to customer satisfaction”, *European Journal of Marketing*, Vol. 43 Iss: 9/10, pp.1220 – 1231.
- Frank Rees, (1987), “A Softly Softly Approach to Banking Technology”, *International Journal of Bank Marketing*, Vol. 5 Iss: 4, pp.32 – 34 *Journal of Bank Marketing*, Vol. 22 Iss: 4, pp.238 - 259.

- Jane M. Kolodinsky, Jeanne M. Hogarth, Marianne A. Hilgert, (2004), “The adoption of electronic banking technologies by US consumers”, International.
- João F. Proença, Maria Antónia Rodrigues, (2011), “A comparison of users and non users of banking self service technology in Portugal”, *Managing Service Quality: An International Journal*, Vol. 21 Iss: 2, pp.192 - 210.
- Katina Gregory, Gerhard Hambusch, (2015), “Factors driving risk in the US banking industry: The role of capital, franchise value and lobbying”, *International Journal of Managerial Finance*, Vol. 11 Iss: 3, pp. 388 - 410.
- Lakshmi Kumar, D. Malathy, L.S. Ganesh, (2011), “The diffusion of ATM technology in Indian banking”, *Journal of Economic Studies*, Vol. 38 Iss: 4, pp.483 - 500.
- Lakshmi Kumar, D. Malathy, L.S. Ganesh, (2010), “Productivity growth and efficiency change in Indian banking: Technology effect vs catch up effect”, *Journal of Advances in Management Research*, Vol. 7 Iss: 2, pp.194 - 218.
- Lisa Wessels, Judy Drennan, (2010), “An investigation of consumer acceptance of M banking”, *International Journal of Bank Marketing*, Vol. 28 Iss: 7, pp. 547 – 568.
- Lova Rajaobelina, Isabelle Brun, Élisar Toufaily, (2013), “A relational classification of online-Banking customers”, *International Journal of Bank Marketing*, Vol. 31 Iss: 3, pp.187 - 205.
- Mathew Joseph, Yasmin Sekhon, George Stone, Julie Tinson, (2005), “An exploratory study on the use of banking technology in the UK: A ranking of importance of selected technology on consumer perception of service delivery performance”, *International Journal of Bank Marketing*, Vol. 23 Iss: 5, pp. 397 - 413.
- Mortimer, Gary, Neale, Larry, Fazal e Hasan, Syed, & Dunphy, Benjamin (2015), Investigating the factors influencing the adoption of m-banking: A cross cultural study. *International Journal of Bank Marketing*, 33(4), pp. 545-570.
- Muslim Amin, (2016), “Internet banking service quality and its implication on e-customer satisfaction and e-customer loyalty”, *International Journal of Bank Marketing*, Vol. 34 Iss: 3, pp.280 – 306.
- N. Mamode Khan, N. Emmambokus, “Customer Adoption of Internet banking in India “, *International Journal of Business Research and Management (IJBRM)*, Volume (2) : Issue 2 : : 2011, page 53 – 58. [http:// www.researchgate.net/publication/228459191](http://www.researchgate.net/publication/228459191).
- Shirshendu Ganguli, Sanjit Kumar Roy, (2011), “Generic technology based service quality dimensions in banking: Impact on customer satisfaction and loyalty”, *International Journal of Bank Marketing*, Vol. 29 Iss: 2, pp.168 - 189.
- Shirshendu Ganguli, Sanjit Kumar Roy, (2011), “Generic technology based service quality dimensions in banking: Impact on customer satisfaction and loyalty”, *International Journal of Bank Marketing*, Vol. 29 Iss: 2, pp.168 - 189.
- Suk ching Ho, Chi fai Chan, Dan lin Hsu, (1990), “New Banking Technology in Hong Kong”, *International Journal of Bank Marketing*, Vol. 8 Iss: 6, pp. 9 - 15.
- Syed Ali Raza, Syed Tehseen Jawaid, Ayesha Hassan, (2015), “Internet banking and customer satisfaction in Pakistan”, *Qualitative Research in Financial Markets*, Vol. 7 Iss: 1, pp. 24 - 36.
- Tooraj Sadeghi, Kambiz Heidarzadeh Hanzae, (2010), “Customer satisfaction factors (CSFs) with online-Banking services in an Islamic country: I.R. Iran”, *Journal of Islamic Marketing*, Vol. 1 Iss: 3, pp. 249 - 267.
- Yi Shun Wang, Yu Min Wang, Hsin Hui Lin, Tzung I Tang, (2003), “Determinants of user acceptance of Internet banking: an empirical study”, *International Journal of Service Industry Management*, Vol. 14 Iss: 5, pp. 501 - 519.