



BANKING SECTOR AND INFORMATION TECHNOLOGY - A TWO DIMENSION STUDY IN COIMBATORE CITY

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ABSTRACT

The advent of information technology to every aspect of human life and business has been so obvious that it does not need to be accentuated more. Information technology has been of great essence in banking system. Indian banking has undergone a total transformation over the last decade. Moving seamlessly from a manual, scale-constrained environment to a technological leading position, Information technology has attracted many foreign banks to India, thereby opening up new markets, new products and efficient delivery channels for the banking industry in the development of Indian Economy, Commercial Banks in India are now becoming a one-stop Supermarket. The focus is shifting from mass banking to class banking with the introduction of value added and customized products. Technology allows banks to create what looks like a branch in a business building's lobby without having to hire manpower for manual operations. The branches are running on the concept of round the clock working, made possible by the use of IT services these technologies driven delivery channels are being used to reach out to maximum number of customers at lower cost and in most efficient manner

KEY WORDS: Banking Sector, Information technology (IT), Banker and Customer.

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I. INTRODUCTION

Banking industry is backbone of Indian financial system and it is afflicted by many challenging forces. One such force is revolution of information technology. In this Globalized era, technology support is very important for the successful functioning of the banking sector that is Information and Communication Technology (ICT) is at the centre of the global change. The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness. ICT directly affects how managers decide, how they plan and what products and services are offered in the banking industry. It has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery. This paper indeed focuses on the perception of bankers and customers towards IT in banking sector¹.

The banking sector includes a lot of key players, including retail and commercial banks, mobile (telecommunication) network operators, and financial institutions [17]. Information Technology (IT) has changed how business is conducted, how individuals live, work and think. There is stiff competition amongst banks and has also paved way for many new and exciting banking products and services being offered nowadays for customers with so many banks to choose from. The banking sector has paved way for the use of IT in different ways namely the personal computer (PC), personal digital devices (PDAs), tablets, smartphones, automatic teller machines (ATM) and standalone machines with in the banks. All the above technologies named assist the customer and employees to access bank account information they need at the present time².

¹ air, K.N.C. (2006). *Technology in banking "A strategic differentiator"*. Chartered Financial Analyst.

² Bhattacharya, A. (2006). *Technology in banking "A strategic Resource"*. Chartered Financial Analyst.

II. STATEMENT OF THE PROBLEM

Banks and financial institutions are now offering many services that benefit their potential and current customers in many ways. The management has now seen that with the technology they have to keep up with the times in order to keep the customers happy and interested in their products. IT has also brought about stiff competition wars within the industry. IT also aids the employees of the bank as well as the banks and financial institutions themselves. Operations are now automated making life simpler and easier. Telecommunication Mobile Operators, Internet Service Providers (ISPs), computer hardware manufacturers, software developers, mobile device manufactures and the operating software manufactures have all assisted in the giving the banking sector the much needed boost. Mobile devices meet the following criteria, having light operating software (mobile phones, smartphones, tablets and Personal Digital Assistant (PDA)) and being portable³.

The scientific and technological development witnessed in the banking arena, and the resulting widespread use of the tools and electronic banking channels in developed countries which exceeds in terms of quantity and quality that seen in developing countries, expansion is linked to the main parties accountable for it and represented in banks and their customers as the monetary authority, the regulator of the banking sector, responsible for legislation, regulations, monetary and banking policies which contribute in providing the banking environment that banks operate within its scope, thus affecting the size and quality of e-banking, Banks as being considered the responsible party for providing quantitative and qualitative Electronic Banking Tools which requires knowledge of the importance of each of the organizational factor, financial, behavioral, environmental, and other factors associated with the application of information technology. One of its important components is the Electronic Banking Tools; due to their impact on banks' profitability and market share and Individuals as dealers with the Electronic Banking Tools and trying to determine the extent of their habits and banking behavior progress and awareness with regard to broaden the use of E-banking base⁴.

³ Goi, C. L. (2005). *E-Banking in Malaysia: Opportunity and challenges*. *Journal of Internet Banking and Commerce*, 10(3), Retrieved from <http://www.arraydev.com>.

⁴ Piciu, G. C., *Riscul în economie. Aplicații în domeniul financiar-bancar*, Editura Economica, București, 2008.

III. NEED OF THE STUDY

The need of the study is to state the advantages and disadvantages, the different models to test the effects of individual's intention to adopt mobile banking, the different technologies that are being implemented currently by banks and what the future holds for mobile banking. Information Technology (IT) has evolved over time and has changed the way business is conducted. The way people conduct business has been made easier and more efficient. IT has opened many doors for new technologies that are used within business and for individual use; the Banking sector is of no exception. Mobile banking is the fastest growing channel of banking as a result few people are walking into bank branches nowadays. Banks now need to remain relevant by catering to the needs and expectations of the customers and to the technology advancements. By providing better services and products customers are able to utilise. The role of IT in the banking sector can be divided into two categories: Communication and connectivity, and individual and business transactions. IT enables for sophisticated products to be developed with better frameworks, execution of dependable strategies and help with communication so to connect with people from different countries, businesses across the globe, geographical distance and diverse markets⁵.

IV. REVIEW OF LITERATURE

Mcphail, Fogarty, Gerard (2020) study conducted on Australian bank customers, where the study aimed to identify the demographic variables for the customers and the use size of IT self-service banking of those customers. The study focused on the four E-channels which are: ATM, Spoken Bank, Internet Banks, and POS. the study found that the older the client, the less convictions in using new electronic channel, especially for the Spoken Bank; the age factor was found to have more impact than other factors, such as academic achievement and income. The study suggested that to focus on the privileges of using E-channels in saving time and effort, in addition, it is necessary to study the cultural and social factors of the environment surrounding the customer⁶.

Anguelov, Hilgert and Hogarth (2019) study that was lead on the American Banks' clients intended to attest that the growth and reception of electronic banking technology practice such as: ATMs, Internet

⁵ Brynjolfsson, E. and Hitt, L.M., „Beyond computation: information technology, organizational transformation and business performance,” *Journal of Economic Perspectives*, 14(4), 2000, pp. 23-48.

⁶ McPhail, J., & Fogarty, G. (2020). Mature Australian consumers' adoption and consumption of self-service banking technologies. *Journal of Financial Services Marketing*, 8(4), 302–313.

Bank, and electronic payment means relays on the consumer characteristics and features as demographic variables; age, income, and other. The study revealed that E-Banking products are used by those of high-income, high financial resources, youth groups, and individuals with advanced educational accomplishment. The study resolved that the main vital impediment in respect to the Service is the lack of privacy and security, and ease of use. The study endorsed that the American Federal Bank to issue Depository Receipts to be electronically subscribed⁷.

Dr. Satish Tanaji Bhosale (2018)“Technological Developments in Indian Banking Sector” This paper talks about the role of banking sector in the development of Indian Economy, So banks need to optionally leverage technology to increase penetration, improve their productivity and efficiency, deliver cost-effective products and services, provide faster. Efficient and convenient customer service and thereby, contribute to overall growth and development of the country⁸.

Manoharan (2017) highlighted the e-payment system in India and its performance impact on Indian banking sector. The author described that competition in banking industry had forced the banks to rethink the way they operate their business. So, e- banking has made it possible to find alternate banking practices. In the paper, the author divided the payment system in India into three parts, i.e., large value payment system, retail payment system, and retail electronic system⁹.

Sobol and Cron (2016) “Impact of information Technology on Indian banks”, this article has conducted the study to find the relationship between computerization and several measures of overall firm performance. Three performance comparisons are presented: users versus non-users of computers, three levels of usage, and class of computer usage. Results indicate that computerization is related to overall performance. Non-users tend to be small firms with about average overall performance¹⁰.

Prabhakar Rao (2014), Indian banking in 2015 IBA Bulletin Special Issues, in this study discussed about the revolutionary changes that witnessed in the financial sector around the world. He stated that net worked branches. ATMs, technology based payment and settlement system, technology vision of RBI, floating rate of interest have changed the Indian banking sector. He concluded that brick and mortar bank

⁷ Anguelov, C., Hilgert, M., & Hogarth, J. (2019). *US Consumers and Electronic Banking: 1995-2003*. *Federal Reserve Bulletin*, 90(1), 13–16

⁸ Dr. Satish Tanaji Bhosale (2018) “Technological Developments in Indian Banking Sector”, *Information Information Technology Journal* 6 (4): 490-49.

⁹ Manoharan (2017) “e-payment system in India and its performance impact on Indian banking sector”, *Journal of Internet Banking and Commerce*, 6 (1)

¹⁰ Sobol and Cron (2016) “Impact of information Technology on Indian banks”, *International Journal of Bank Marketing*, 19(7): 276–291

branches will disappear and customers will be able to operation their accounts through electronic devices¹¹.

Cowdhury M.S.A. and Marufullah M (2013), in their research paper entitled "Usage of Information Technology by the Commercial Banks Operating in Bangladesh-Current Situation and Its Future " describe that the positive impact of Information Technology on productivity of banks is difficult to determine in net profit and asset (predominantly loans) increases . However, banks can enhance productivity by increased spending on IT and better management of IT resources. That would lead to increase in their competitiveness through differentiation and customer service improvement, reduced costs, better risk avoidance and maintaining the stability of their customer base and market share¹².

V. OBJECTIVES OF THE STUDY

- To know the profile of respondents in the study area
- To study the perception of customers and bankers towards IT in the study area.
- To understand the various services rendered by banking sectors to their customers through information technology.

VI. RESEARCH METHODOLOGY

- Sample size – Bank employees 50 (5 each) and customers 150 (15 each)
- Respondents - Customers of the bank (account holders) and Bankers (Employees)
- Sampling Method - Stratified sampling method,
- Sample Plan - Interview schedule (Primary Data)
- Sample Unit – the banks in Coimbatore city (10).
- Sample area - Coimbatore city
- Data analysis - SPSS (IBM 25.0)

¹¹Prabhakar Rao (2014), *Indian banking in 2015, IBA Bulletin Special Issues*, (pp 170-173).

¹² Cowdhury M.S.A. and Marufullah M (2013), "Usage of Information Technology by the Commercial Banks Operating in Bangladesh-Current Situation and Its Future ", *Journal of Economic Crime Management*, Volume 4, Issue 2.

Table 1
Distribution on sample units and respondents

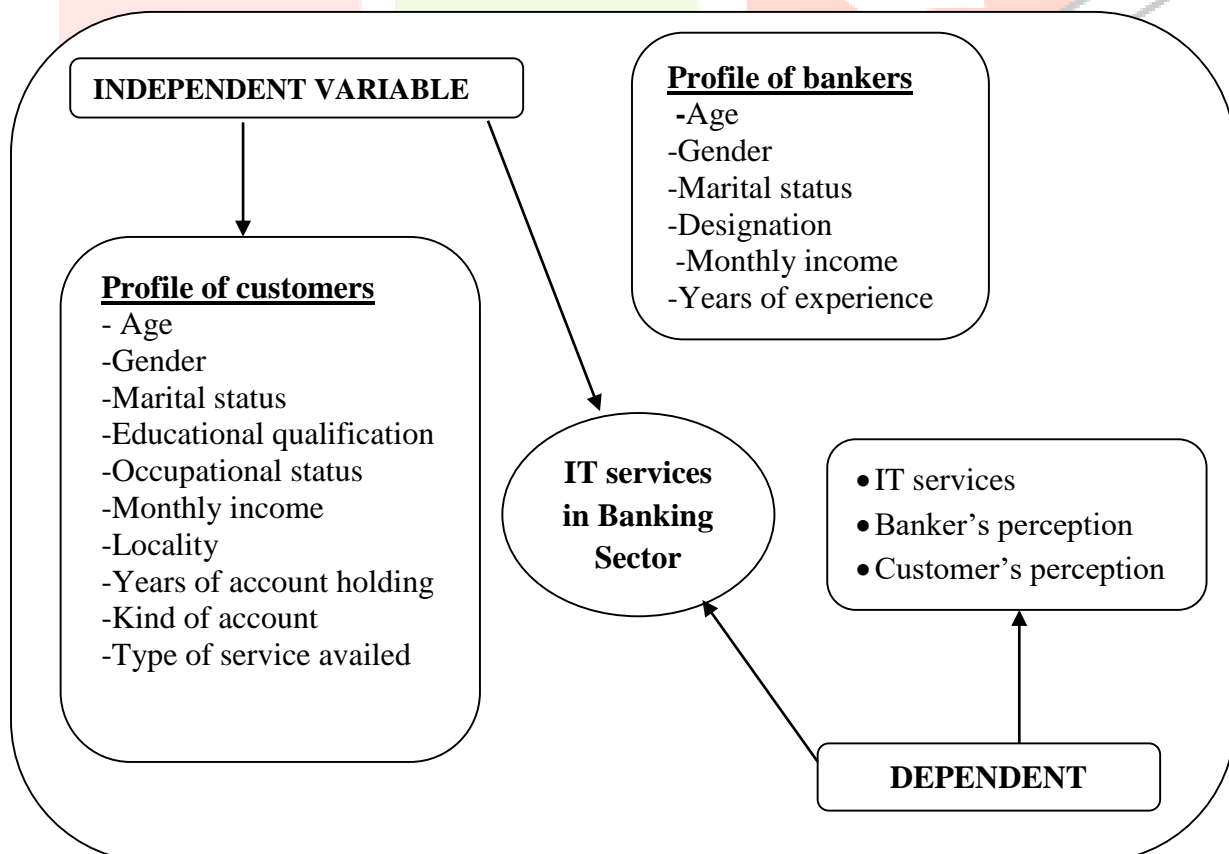
Sl.no	Name of the banks	No. of respondents	
		Bank Employees	Customers
1.	AXIS bank (S1)	15	15
2.	Bank of India (S2)	15	15
3.	Canara bank (S3)	15	15
4.	Central Bank of India(S4)	15	15
5.	HDFC bank (S5)	15	15
6.	ICICI bank (S6)	15	15
7.	Indian bank (S7)	15	15
8.	Indian Overseas Bank (S8)	15	15
9.	State Bank of India (S9)	15	15
10.	Union Bank of India (S10)	15	15
Total		150	150

Source: Primary data

VII. LIMITATIONS OF THE STUDY

- ❖ The study is confined to the respondents of Coimbatore city only.
- ❖ Only a few banks based in the study area was taken for the study.
- ❖ Due to time constrain , the research period was limited
- ❖ The primary data were collected through interview method which is subjected to recall bias.

VIII. FRAMEWORK OF ANALYSIS



IX. FRAMED HYPOTHESIS

Ho: There is no significant relationship between the profile of respondents (bankers and customers) and IT service rendered by the Banks.

Ho: There is no significance relationship between service rendered and perception of respondents (bankers and customers).

X. ANALYSIS OF DATA

Table 2
Distribution on profile of bankers (Employees) - 150

Sl.no	Particulars	Variable	No. of respondents	Percentage
1	Age	41-50 years	48	32
2	Gender	Female	87	58
3	Marital status	Married	108	72
4	Designation	Assistant manager	33	22
5	Monthly income	50001-100000	45	30
6	Year of experience	Less than 5 years	60	40

Source: Primary Data

Table 3
Distribution on profile of Customers - 150

Sl.no	Particulars	Variable	No. of respondents	Percentage
1	Age	36-45	57	38
2	Gender	Male	102	68
3	Marital status	Married	89	59
4	Educational qualification	UG/PG	50	33
5	Occupational status	Business	19	28
6	Monthly income	30001-40000	39	26
7	Locality	Semi-urban	60	40
8	Years of account holding	11-15 years	41	27
9	Kind of account	Savings	111	74
10	Type of service availed	Regular service	95	63

Source: Primary Data

Table 4
Distribution on IT services in banking sector (Simple ranking)

Sl.no	Particulars	Mean	S.D	Rank
1	ATM Banking	3.17	2.20	II
2	Telephone Banking	4.40	1.79	V
3	Credit card	2.18	0.68	VIII
4	Debit card	3.45	2.43	I
5	Mobile banking	4.88	2.17	III
6	PC Banking	1.89	1.45	VII
7	Electronic Fund Transfer(EFT)	2.72	1.81	IV
8	Internet banking	4.33	1.73	VI

Source: Primary Data

Table 5
Distribution on banker's (employees) perception towards IT in banks (WAS)

Sl.no	Perception of bankers	5	4	3	2	1	MS	MR
1	PB-1	385	211	51	3	2	4.86	1
2	PB-2	347	201	64	10	4	4.66	2
3	PB-3	202	240	80	36	5	3.75	14
4	PB-4	232	225	78	25	9	3.79	13
5	PB-5	282	194	100	15	3	4.00	10
6	PB-6	181	204	136	28	3	3.68	16
7	PB-7	527	162	7	2	1	4.64	3
8	PB-8	352	246	28	11	3	4.27	7
9	PB-9	333	213	60	13	4	4.15	8
10	PB-10	361	246	33	8	1	4.33	6
11	PB-11	206	195	117	40	1	3.73	15
12	PB-12	410	244	9	6	1	4.46	5
13	PB-13	208	340	49	8	3	4.13	9
14	PB-14	235	194	122	18	4	3.83	12
15	PB-15	384	276	8	2	1	4.47	4
16	PB-16	286	195	102	13	4	3.99	11

Source: Computed Data

Table 6
Distribution on customer's perception towards IT in banks (WAS)

Sl.no	Perception of customers	5	4	3	2	1	MS	MR
1	PC-1	162	162	8	2	1	4.59	3
2	PC-2	352	246	28	11	3	4.27	6
3	PC-3	333	213	60	13	4	4.15	7
4	PC-4	361	246	32	8	2	4.32	4
5	PC-5	223	168	121	42	3	3.71	10
6	PC-6	525	165	3	2	1	4.69	2
7	PC-7	403	185	34	17	4	4.28	5
8	PC-8	342	205	61	12	4	4.84	1
9	PC-9	232	225	82	24	8	3.80	8
10	PC-10	190	248	81	34	6	3.72	9
11	PC-11	181	204	136	27	4	3.67	11

Source: Computed Data

Table 7
Chi-square distribution on profile of the bankers and IT services rendered

Sl.no	Variables	Chi-square value	Standardised statistics
1	Age	0.082	1.629
2	Gender	0.317	1.000
3	Marital status	0.028	1.845
4	Designation	0.026	1.845
5	Monthly income	0.317	1.000
6	Year of experience	0.123	1.515

Source: Computed Data

Table 8
Chi-square distribution on profile of the customers and IT services rendered

Sl.no	Variables	Chi-square value	Standardised statistics
1	Age	0.246	0.741
2	Gender	0.336	0.430
3	Marital status	0.072	1.779
4	Educational qualification	0.782	0.310
5	Occupation	0.050	1.923
6	Monthly income	0.388	0.915
7	Locality	0.236	1.235
8	Years of account holding	0.017	2.178
9	Types of service availed	0.651	0.482
10	Kind of account	0.483	0.781

Source: Computed Data

Table 9
Distribution on service rendered and perception of respondents (Correlation)

Sl.no	Service rendered	Perception of banker	Perception of customer
1	ATM Banking	0.379	0.027
2	Credit card	0.937	0.031
3	Debit card	0.703	0.051
4	Electronic Fund Transfer(EFT)	0.260	0.838
5	Internet banking	0.031	0.283
6	Mobile banking	0.188	0.063
7	PC Banking	0.340	0.015
8	Telephone Banking	0.707	0.017

Source: Computed data

NB: significance @ 5% level of significance

Distribution on variables

Variables	QWL	WE	WS
QWL	1.000	0.582	0.520
PLE		1.000	0.511
PLS			1.000

Table 10
Distribution on IT services rendered and sample units (Factor analysis)

Sl.no	Particulars	F1	F2	F3	F4	F5	F6	F7	F8	h2
1	S1	0.919	0.932	0.241	0.195	0.102	0.841	0.712	0.428	0.941
2	S2	0.939	0.198	0.386	0.153	0.466	0.666	0.370	0.201	0.900
3	S3	0.102	0.325	0.666	0.419	0.425	0.665	0.452	0.432	0.937
4	S4	0.466	0.545	0.609	0.137	0.386	0.609	0.616	0.193	0.721
5	S5	0.425	0.649	0.164	0.662	0.470	0.164	0.830	0.715	0.900
6	S6	0.386	0.666	0.371	0.366	0.417	0.371	0.457	0.305	0.909
7	S7	0.466	0.665	0.452	0.325	0.101	0.102	0.163	0.864	0.866
8	S8	0.241	0.609	0.616	0.875	0.091	0.919	0.198	0.319	0.211
9	S9	0.919	0.998	0.941	0.949	0.925	0.939	0.919	0.928	0.946
10	S10	0.939	0.919	0.567	0.319	0.195	0.102	0.841	0.919	0.875
	Eigen Value	2.645	1.227	1.596	4.844	2.545	2.227	1.506	1.046	
	Percentage of variation	8.111	16.906	11.754	14.598	18.181	15.906	10.754	7.469	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalisation, A
Rotation converged in 8 iterations

Source: Computed Data

XI. FINDINGS OF THE STUDY

Profile of bankers: It was found that majority on respondents under age group fall under the category 41-50 years 16(32%) followed by Gender – Female 29(58%), Marital status – married 36(72%), Designation – Assistant professor 11(22%), Monthly income- 50001-100000 15(30%) and years of experience – less than 5 years 20(40%).

Profile of Customers: It was evident those majorities on respondents under age group fall under the category 36-45- 57 (38%) followed by Gender- Male 102 (68%), Marital status- Married 89 (59%), Educational qualification - UG/PG 50 (33%), Occupational status- Business 19 (28%), Monthly income- 30001-40000 39 (26%), Locality - Semi-urban 60 (40%), Years of account holding - 11-15 years 41 (27%), Kind of account Savings–111 (74%) and Type of service availed - Regular service 95(63%).

IT Services (simple ranking): Among the eight important IT services it was found that Debit card was ranked first followed by ATM Banking second, Mobile banking third, Electronic Fund Transfer (EFT), Telephone Banking, Internet banking, PC Banking and last Credit card.

Perception of Bankers (WAS): PB-1: Less Human Interpretation, PB-2: Paper less transaction, PB-3: Reduce mailing cost, PB-4: Inventory Holding will be reduced, PB-5: Fast recovery, PB-6: Reduce Rush of Customers in Bank, PB-7: Increase in branch Productivity, PB-8: Updated information, PB-9: Increase in employee Productivity, PB-10: Innovation in Products & Services, PB-11: Reduce load on other branches, PB-12: Time Reduction, PB-13: Bank Branching with anytime, PB-14: Facilitate Centralized Data Base, PB-15: New product Launch, PB-16: Online-Real -Time Data Availability. It was found that PB-1 that is less human interpretation is ranked first followed by PB-2: Paper less transaction and so on and the last rank is Reduce Rush of Customers in Bank.

Perception of customers (WAS): PC-1: Queue management, PC-2: Facility of fund transfer to third party, PC-3: Access to current and historical transaction data, PC-4: Anytime and anywhere banking facility, PC-5: Low transaction fees, PC-6: Easy to use and user friendliness, PC-7: Convenience, PC-8: reduction in paper bank formalities, PC-9: online transfer and payments, PC-10: Flexible virtual banking system and PC-11: reliability. It was found that PC-8: reduction in paper bank formalities followed by PC-6: Easy to use and user friendliness and last rank PC-11: reliability.

Profile of banker and service rendered (Chi-square): The chi-square value @ 5% level of significance showed significant relationship thus the H_0 is rejected and H_a is accepted which means there is significant relationship between demographic profile of respondents (bankers) and service rendered.

Profile of customer and service rendered (Chi-square): The chi-square value @ 5% level of significance showed significant relationship thus the H_0 is rejected and H_a is accepted which means there is significant relationship between demographic profile of respondents (customers) and service rendered.

Service rendered and perception of respondents (Correlation): The result of Pearson and Kendall correlation shows high positive correlation i.e. a perfect positive linear reliability is found between the factors, therefore the null hypothesis is rejected and the alternative hypothesis [H_a : There is no significant relation between service rendered and perception of respondents (banker and customer)] is accepted.

Factor analysis: Sample units: It was found that State bank of India (S9) showed the highest factor loading h^2 0.946.

XII. SUGGESTION and RECOMMENDATIONS

- Marketing campaign aimed at increasing awareness among banking customers with E-channels and services provided through it. Through this marketing campaign, which must be periodically, customers are introduced to the features and benefits they receive through their use to the service over these E-channels like saving time, effort, fees and other.
- Up keeping campaign to E-cards promoting, Along with, the ATM card, as the bank ought to advertise further E-cards such as Visa card, MasterCard, on-line shopping cards, and other cards that boost customers to employ such electronic channels. It is imperative that commercial banks to perform procedures in order to facilitate customers get those cards such as exempting the client of card issuance commission for the first-year. The bank should concentrate on creating awareness to the business holders and other people.
- The involvement of female customers should be improved by the bank, the transactions relating to senior citizens like pension and retirement benefits should be provided through e banking and the activities should be undertaken by the bank to attract the new customers towards internet banking.
- The bank should minimize the traditional way of methods to maximize the internet banking services, ensure the security and confidentiality of customer information, provide a platform from where the

customers can access different accounts at single time without extra charge and create a trust in mind of customers towards security of their accounts.

- It is important to acknowledge and understand of the obstacles that prevent the expansion of E-banking customers, as well as the study of the client's current and future needs, listening to their problems and suggestions in this regard. That can be achieved by commercial banks through carrying out studies on this topic periodically and by trained and qualified staff targets to encourage customers to employ electronic channels. Aimed at the same purpose, it is essential to investigate several free services that clients can attain over these E-channels, even for a limited period, additionally to the central bank to support these studies conducted by banks.

XIII. CONCLUSION

To conclude Information technology is the most important facilitator for the transformation of the Indian banking industry. This paper focuses on the main objective of understanding the importance of technology in banking industry and to find out the awareness, perception, and the level of satisfaction of customers towards the use of technology in banking industry in Mangalore in India based on primary data. The data collected for the purpose will be analysed and interpreted to draw a meaningful conclusion. This study will have a positive contribution to the field of existing knowledge on technology in banking industry¹³.

Banks and financial institutions will continue to experiment with financial innovations and technological innovations and electronic, information-based services. Particularly with the invention of the internet, there is a great potential for growth and experimenting different innovations. At this stage it is therefore unknown as to what payoffs will these financial institutions will get once they have heavily invested in these new technologies. As every innovation has some drawbacks, banks should therefore be prepared for worse scenarios, as it has been experienced that many computers and sometime systems go down bringing the entire office world to an untimely end. For this reason it is management's responsibility to keep abreast with the new systems and technologies and make sure it is sure updated with the flow of information technology¹⁴.

¹³ Allen, F. and Gale, D., *Financial Innovation and Risk Sharin*, Cambridge, Mass, MIT Press, 2003, pp. 265-290.

¹⁴ Berger, A. N., „The economic effects of technological progress: evidence from the banking industry”, *Journal of Money, Credit, Banking*, 35 (2), The Ohio State University Press, Ohio, 2003, pp. 141-176.

XIV. AGENDA FOR FUTURE RESEARCH

1. Role of IT in various service sectors
2. Comparative study on E-Banking in Private and Public sector banks

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