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A Study On Impact Of Information Technology In Banking Sector With Reference To Southern Tamilnadu

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Abstract- *This study addresses the impact of information technology on the banking services offered to the customers. Information technology provides economies of scale in service delivery, covering new customers and developing innovative services. Banking sector in India has made rapid pace in reforming and aligning technology to the new competitive business. It adopts internet, mobile, and communication systems to deliver speedy service. This present study was started with the objective of knowing customers demographic profile, factors influencing on service accessibility, customer satisfaction on technology based service and strategies required to improve this service portfolio. This study was conducted in Southern Tamilnadu, which covered 100 samples in number. The data for the study was collected through well-constructed and open-ended questionnaire. This study seeks to test the above objectives with simple percentage analysis, factor analysis, and multiple linear regression test, mean score, t-test and chi-square test. This study was concluded that banking services through information technology platform offers satisfied service to the customers and simultaneously needs to improve as per changing technology inclination.*

Key words used: Commercial Banks, Banking Service, Information Technology, Service Accessibility, Customer Satisfaction, Technology-enabled Service.

I INTRODUCTION

Banking technology is identified as the information and communication technologies employed by banks to deliver different services to its customer in a safe and reliable way in an electronic platform. Both customers and banks have been increasingly profited from the adoption of state-of-the-art information technology during the last two decades to deliver its regular work. Customer service, branch productivity, innovation in service delivery, fast and reliable service, seamless fund transfer, risk management and real time information system are some of the benefit derived through the information technology. Growth of information technology has opened up new markets, new products, new services and efficient delivery channels for the banking sectors. The progress of technology and the development of worldwide banking networks have significantly increased the transfer of funds from one place to another place and provision of core banking services to its customers. Information technology provides the opted solutions to banks to take care of their front office and back office obligations. Implementation of information technology in banks were started in the early 2000s with an emphasis of the adoption of core banking solutions, centralization of operations and complete automation of banks. Information technology offers a chance for banks to build new systems that address a wide range of customer needs including many that may not be imaginable today. Technology innovations are tracking a big impact in the reshaping of the banking industry, by leading to the development of new financial products and of new means of delivering to its customers.

II REVIEW OF LITERATURE

Barnes et al. (2003) suggested that modern innovations in telecommunications have facilitated the instigate of new access methods for

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banking services, one of these is mobile banking; whereby a customer interacts through a mobile phone with the bank. Shu and Strassmann (2005) perceived that even though Information Technology has been one of the most essential dynamic factors relating all efforts, it cannot improve banks' earnings. Kozak (2005) investigated the pressure of the evolution in Information Technology on the profit and cost effectiveness of the banking. This study designated optimistic relationship among the executed Information Technology and together productivity and cost savings. Sathye (2005) investigated the impact of the introduction of transactional Internet banking on performance and risk profile of major credit unions in Australia. Amaoko (2012) contributed optimistically to the provision of banking services and the growth of the Ghanaian banking industry. Morufu et al. (2012) researched on banker's perception of electronic banking in Nigeria purposely to find out how bankers perceive the benefits and threats associated with electronic banking by investigating banks employees' perception on electronic banking and its implications on bank service delivery. Agboola (2006) observed that payments are automated and absolute volume of cash transactions have declined under the impact of electronic transaction brought about by the adoption of ICT to the payment system particularly in the developed economies.

III OBJECTIVES OF THE STUDY

This study is carried out with the following objectives:

1. To identify the demographic profile of customers involved in the use of modern day banking services.
2. To ensure factors influencing on service accessibility of customers with the adoption of information technology enabled system.
3. To examine constructive strategies to improve the technology enabled services from the customer's standpoint.

IV RESEARCH METHODOLOGY

This research could be started with the suitable research plan and methodology, the sample for the study is customers who are all accessing services in the commercial banks with the aid of information technology in Southern part of Tamilnadu. This study randomly selects 100 samples at the various places across the sample area. This study collects data from the respondents, who are all having savings bank account and used information technology based service at least one year time frame. This study formulated on the basis of descriptive research design. The survey instrument has been constructed with three parts; first parts deals with demographic profile of respondents, second part seeks to ensure the factors influencing on service accessibility of customers with the adoption of information technology. Third part covers constructive strategies to improve the IT enabled service from the customer's point of view. The survey instrument was pretested; therefore questionnaire has been designed for collecting data. Collected data has been analyzed by using simple percentage analysis, principal component factor analysis, and multiple linear regression analysis and T-test.

V RESULTS AND DISCUSSIONS

A Analysis of Demographic Profile

The demographic profile of bank customers is analyzed presented in Table-1. Simple percentage analysis has been adopted to analyse demographic profiles of respondents.

Table – 1: Demographic Profile of Respondents

Profile	Distribution	Frequency	Percentage
Gender	Male	83	83%
	Female	17	17%
Age	18 – 25	23	23%
	26 – 40	35	35%
	41 – 59	27	27%
	60 & Above	15	15%
Academic Qualification	Illiterate	2	2%
	Up to HSC	36	36%
	Diploma/UG	38	38%
	PG/Professional	24	24%
Monthly Income	Less than 15,000	21	21%
	15,001 – 35,000	32	32%
	35,001 – 50,000	34	34%
	Above 50,001	13	13%
Marital status	Married	69	69%

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	Unmarried	31	31%
Occupation	Housewife/Retired	10	10%
	Employed	32	32%
	Business/Profession	39	39%
	Agriculture	11	11%
	Student	8	8%
Type of Service	Internet banking	36	36%
	Mobile banking	12	12%
	Direct branch visit	52	52%
Frequency of use	Daily	2	2%
	Weekly	19	19%
	Monthly	51	51%
	As and when	28	28%

Source: Primary Data

It could be ascertained in the above table-1, profile of the respondents are clearly analyzed. The gender level shows that about 83 per cent are male respondents while the rest 17 per cent are female respondents. Age of the customers apparently expresses that majority 35% are ranges between 26 – 40 years. 38% customers are diploma / under graduate degree holders, monthly income of the respondents' states that 34% respondents are earning income of Rs.35,001 – 50,000. Marital status reveals that 69% respondents are married and rest 31% are unmarried respondents. Occupation of the respondents are gathered in five intervals and shows that 10% are housewife/retired category, 32% are employed in private and public sector, 39% are conducting their own business or profession, 11% are agriculturists and remaining 8% are students and other category. Type of service shows that 52% are directly visit to banks and frequency of use reveals that 51% customers are using once in a month technology enabled service.

B Factors Influencing Service Accessibility

Factors influencing on service accessibility of customers with the adoption of information technology enabled system is designed with six parts such as, banking services, add-on services and delivery, front office services, safety of services, technology-enabled services and reliability of services. Taking this fact into consideration, this analysis has been conducted with principal component factor analysis. In order to check the reliability factor among the factors and components, the Cronbach alpha has been executed and it strongly acknowledges that reliability of data ranges from 0.93 to 0.97.

Table – 2: Factor Analysis

Factors (Mean)	Variables	Factor Loadings	Eigen Value	% of Variance
Banking Services (2.89)	Internet banking	0.811	13.94	27.12
	Mobile banking	0.816		
	Core banking	0.812		
	Debit and credit cards	0.813		
	Private Banking	0.682		
	ATM facility	0.825		
	Electronic Fund Transfer	0.723		
	Agency Services	0.702		
	ECS facility	0.724		
	Cheque deposit in drop box	0.786		
	RTGS	0.670		
Add-on Services & Delivery (2.39)	24x7 Service access	0.811	10.26	18.67
	Competitive charges	0.765		
	Service quality improvement	0.727		
	Balance/Statement enquiry	0.788		
	Cheque book facility	0.799		
	Online shopping provision	0.586		
	Standing instructions fulfillment	0.767		
	Demat services	0.750		
	Loan applications	0.711		
Front Office Services (2.28)	Speedy service	0.806	7.21	13.06
	Short waiting time	0.735		
	Secured transactions	0.769		
	Guidance on service access	0.636		
	Cash withdrawal	0.789		

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	Provision of clear instruction Retail banking	0.654 0.722		
Safety of Services (2.21)	Convenient ATM Location Cheque/cash deposit Transparency Advanced Technology Better control on transactions Convenient and time saving Balance enquiry and maintenance	0.803 0.801 0.753 0.576 0.763 0.624 0.756	5.63	7.87
Technology-Enabled Services (2.17)	Friendly technology to adapt Less cost Adequate voice prompts Access on necessity Back office support	0.777 0.726 0.736 0.711 0.697	3.22	4.47
Reliability of Service (2.10)	Error free service Familiar on service Fast data transmission Comfortable transaction	0.793 0.723 0.687 0.646	2.63	3.76

Source: Primary Data

It is evident from Table-2, the factorial mean shows that banking services (2.89), add-on services and delivery (2.39), front-office services (2.28), safety of services (2.21), technology-enabled services (2.17) and reliability of services (2.10). The content validity ratio is also computed for all the components and the scale falls more than 0.5 only considered. This factor analysis is performed with six factors and 43 variables and it explains 74.95% of variance in data. Banking services is the main influencing factor to the customers, which covers eleven components and explains 27.12% of variance in data with Eigen value of 13.94. ATM facility, mobile banking, debit and credit cards, core banking and internet banking are most influencing factor to use banking services in this category. Furthermore, add-on services and delivery have noteworthy influence in accessing services because of information technology implementation in banks. It explains 18.67% of variance in data with Eigen value of 10.26. Information technology helps to avail 24x7 service access, cheque book facility, and balance enquiry often to the customers. Technology assists to deliver front-office services in an efficient manner; it has been loaded with seven components and 13.06% variance in data with Eigen value of 7.21. Speedy service and guidance on service access actively largely create benefit to the customers. Information and communication technology assist to deliver fast and fine service to the bank customers for all banking needs.

Technology ensures safety in many aspects to the bank customers; hence, safety of services is loaded with seven components. It explains 7.87% variance in data with Eigen value of 5.63. Customers are using technology-enabled services by themselves in lot of circumstances and it is loaded with five components. It explains 4.47% variance in data with Eigen value of 3.22. Friendly technology to adapt, adequate voice prompts and less cost are the leading factor, which influences use banking services. Finally, reliability in the use of service through technology creates several ifs and buts to the customers. Hence their belief as to reliability is checked with four components, it explains 3.76% variance in data and Eigen value 2.63. Error free service and familiar on service is largely influence on the use of banking services. All these six factors are largely influenced on the accessibility of banking services with the adoption of information technology.

The trustworthy of results derived in the factor analysis has been tested with multiple linear regression analysis. Access of banking service is dependent on various factors and components listed in the above factor analysis. As a result, the factors are taken as independent variables and service accessibility is assumed as dependent variable. Based on this fact, multiple linear regression analysis has been performed and results are presented in table-3.

Table – 3: Multiple Linear Regression Analysis

Independent Variables	Dependent Variable	Un-standardized coefficients		Beta coefficients	t-value	Sign.
		B	S.E.			
Constant	Service Accessibility	-0.819	0.654		-1.643	0.128
Banking Service		0.379	0.093	0.383	4.342[@]	0.006
Add-on Service & Delivery		0.252	0.082	0.178	1.811[$]	0.073
Front-Office Services		0.231	0.072	0.151	1.647[$]	0.163
Safety of Services		0.207	0.075	0.123	0.668[*]	0.184

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Technology-Enabled Services		0.161	0.069	0.134	1.651$	0.056
Reliability of Services		0.129	0.067	0.131	1.233*	0.102
R	0.798					
R^2	0.64					
Adjusted R^2	0.56					
F Value	25. 718@					

Note: @ significant at 1%, $ significant at 5% and *significant at 10%.

Table-3 evidences that all independent variables such as, banking service, add-on service and delivery, front-office services, safety of services, technology-enabled services and reliability of services are absolutely correlated with the service accessibility. The values of R^2 and adjusted R^2 are found as 0.64 and 0.56 respectively which shows that 64% variation on the banking service accessibility. Banking service is the highest beta coefficient factor (0.383) and its t-value is statistically significant at 1% level. It is widely recognised that it has considerable influence on the service accessibility of commercial banks. Similarly, add-on services and delivery, front-office services and technology-enabled services are also significantly correlated with the service accessibility in banks and statistically significant at 5% level. Safety of services and reliability of services are also bearing influence in service accessibility with the adoption of information technology and statistically significant at 10% level. Based on the results from the above analysis, all six factors are having significant influence in the service accessibility of banking services.

C Strategies to Improve Technology Enabled Services

The following variables are identified in pre-test and discussion with field experts, the customers are asked to rate the most important strategies to improve technology enabled services. One sample t-test is taken to analyse the above variables with assigning test value 3 to the ascertained variables.

Table – 4: One-Sample T-Test

Variables	Test Value = 3					
	T	df	Sig.	Mean difference	95% Confidence Interval of the difference	
					Lower	Upper
SMS for cash transactions	22.364	99	.00	.971	.877	1.112
Weekly account statement	21.755	99	.00	.925	.862	1.105
E-Cheque provisions	18.263	99	.00	.851	.812	.975
Unlimited withdrawal	16.358	99	.00	.784	.674	.829
Cyber crime safety	19.284	99	.00	.753	.685	.838
ATMs on rural areas	19.775	99	.00	.845	.752	.974
Increased memory storage	18.127	99	.00	.815	.774	.932
E-mail alerts	21.705	99	.00	.921	.920	.998

(Source: Primary Data)

It is obvious from the table-4 that the calculated t-test values are significantly higher than the test value 3 at 5% level. It shows that technology enabled service mainly requires innovative strategies to develop. The customers are intensely believe SMS for cash transactions, e-mail alerts and weekly account statement are the important strategy to improve technology based services. Followed to that cybercrime safety and ATMs on rural areas are the second important factor to improve technology platform. Finally, e-cheque provisions, increased memory storage and unlimited withdrawal are also similarly gained importance in bringing improvement in technology based services.

D Chi-square Test

The relationship between the demographic profile customers and type of service and frequency of use are tested with chi-square test. In this connection, null hypothesis (H_0) states that there is no relationship between demographic profile of customers and type of service / frequency of use. As contrary to that alternate hypothesis (H_1) states that there is a relationship between demographic profile of customers and type of service / frequency of use.

Table - 5: Chi-Square Test (Significant at 5% level)

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No relationship between	Degrees of Freedom	Table Value	Calculated Value	Result
Gender and Type of Service	2	5.991	6.839	Rejected
Age and Type of Service	6	12.592	13.253	Rejected
Income and Frequency of use	9	16.919	18.185	Rejected
Education and Frequency of use	9	16.919	19.106	Rejected
Occupation and Frequency of use	12	21.026	22.245	Rejected

It could be identified in table-5 that the demographic profile of customers such as gender and age have been tested with type of service and monthly income, academic qualification and occupation have been checked with frequency of use. It is recognized from above test, the null hypothesis for all cases have been rejected and accepts the alternate hypothesis. The calculated chi-square value is more than table value at 5% significant level. Hence it is concluded that there is a relationship between demographic profile of customers and type of service / frequency of use.

VI CONCLUSION

The summary of responses obtained as well analysis of these responses is provided as under. 83% are males, mostly falls in the age group of 26 – 40 years, 38% are diploma/UG degree holders. Monthly income is Rs.35, 001 – 50,000 to 34% of respondents, 69% are married, 39% are belongs to own business, 52% are directly visiting to branch and 51% are using banking services monthly once. Factor analysis reveals that all six factors having impact on the using of technology enabled banking services. Put together the factors and variables explain 74.95% of variance in data. Customers are expecting some strategies to improve technology enabled service portfolio. The chi-square test rejects the null hypothesis about the relationship between demographic profile and type of service and frequency of use of banking services. It is widely acknowledged that the customers now seeks to fulfil their lifestyle aspiration at right times with right kind of technology for deposit, withdrawal and transfer of funds. This is leading to growing demand for competitive and sophisticated technology based services. The time has arrived to shift towards a customer-friendly approach; customers granted an opportunity to take pleasure in their share of benefits stemming from information technology development. Information technology has massive influence on the use of banking services and affords utmost satisfaction to the customer with new contemporary strategies often. It is concluded that information technology innovation in banks facilitate to avail all version of service to the customers in a cost effective way.

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