INFLUENCING FACTORS ON ADOPTION OF MOBILE BANKING TECHNOLOGY BY THE BANKERS OF INDIA

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Abstract

Mobile Technology-enabled banking system helps to transform the financial services to their customers. Use of technology-enabled financial information mediums in expanding banking is one of the key focus areas of banks like, Automated Teller Machines (ATMs), online banking, m-banking, tele-banking, credit/debit cards . Presently, the banking sectors in India are moving towards mobile technology-enabled financial information and it is not only to improve their own internal processes but also to increase financial services to their customers without discrimination. Efficient implementation of mobile technology has facilitated accurate and timely management of the increased transaction volume of banks of that comes with larger customer base. By designing and offering simple, safe and secure technology, banks reach at doorstep of customer with delight customer satisfaction. In order to this current research made with the aim of explore the influencing factors on adoption of mobile banking technology by the bankers and compare the factors between bankers through the using 365 valid questionnaires. This study is to find out 10 different factors on adoption of m-banking technology and among them 8 different factors are highly influenced to adoption of m-banking technology by the bankers. Finally, hypotheses testing conclude that nine influencing factors of mobile banking technology adoption do not differ between public and private sector banks in India.

Keywords: M-banking, Technology, Factors, SMS Banking, Bankers, Adoption

1. Introduction and Execution of The Study

1.1. Introduction

The transformation of the financial information after liberalization period is successive development of innovation base that have resulted in different Self-Service Technology (SST)-enabled mediums between bankers and customers. They include ATM (Automated Teller Machine), Tele Banking, Internet Banking, Credit/Debit cards and Mobile Banking. Among these Self-Service Technologies, Mobile banking (m-banking) is the latest and most innovative information medium and is the new trend among the customers with the feature to access their accounts at any time – 24 hours a day X 365 as well as greatly enrich the connotation of banking services (Sheng. M, et.al), saving time and money for users, banks offer m-banking as a less expensive alternative to traditional banking. In addition, it offers significant cost-saving advantages by the banker's way of reduced transaction costs comparison to the ATMs and is even expected to replace many delivery and payment systems (Viren H.M). On the other hand, m-banking provides the same infrastructure like ATM. This is followed by technology-oriented banks to acquire information on customer habits and preferences, for later marketing purposes (Turban. E, et.al) Innovation in financial services has been the "lifeblood of efficient and responsive capital markets"(Van Horne, J). Moreover, m-banking is one of the financial inclusion media because it is providing efficient banking services with reasonable cost to all sections of people without discrimination. On the other hand, financial inclusion helps to extensive usages of information technology solutions.

1.2. Originate of m-banking in India

One of the most leading sectors in the world in the adoption of mobile technology is the banking industry including India. India was depicted to be the fastest growing mobile communications nation in Asia. Presently, banking industry of India has engaged the use of Information and Communication Technology (ICT) as a platform for effective and efficient means of conducting financial transactions. But, banking sector of India found technology-oriented financial services in the year of 1987 through the Automated Teller Machines (ATMs). It was installed by HSBC bank, after 20 years completion of the execution process of cash dispensers for the first appearance in the world made by Barclays bank in UK, 1967. To strengthen the banking sector, financial reforms were initiated as a part of the economic reform started in India since 1991 onwards. Reforms were introduced in two phases, based on the report of Narsimahan committee in the year of 1991 and 1997. The second committee report, suggested whatever programme required by the banking sector reforms and make it in the India's banking system to become internationally competitive. This

suggestion also helped to making fast development of technological-oriented financial services provided by the bankers to their customers in the past two decades. In recent days, finance-related services that are offered by employing mobile telecommunication technologies are generally referred to as m-banking technology-enabled financial information or services (Tiwari. R, et.al). So, the first m-banking and payment initiatives were announced during 1999. The first bank to provide mobile banking facilities in India was ICICI bank in the year 1999, followed by HDFC bank and IDBI bank. Self-service Technological advances have reshaped the size and nature of the financial industry, allowing it to extend beyond the traditional to modern concept of saving and borrowing through extension of the technological progression in the banking sector. The terms m-banking, m-finance, m-transfers and m-payments refer to the inter-services between customers and bankers. Now, m-banking development is a next generation of electronic banking which delivers financial services when the customers use their handheld devices to access their accounts and pay their bills from a bank which operates their account without having to physically visit their bank. In recent days, mobile banking is performed between bankers and its customers in the form of Short Message Service (SMS) or the Mobile Internet for the purpose of attaining higher levels of customer satisfaction and increased loyalty by providing 24X7 and bankers will benefit further from reduced administrative expenses, lesser number of branches and lower handling charges with better service to the customers than branch banking. However, around the globe various IT initiatives developed by the bankers and use the mobile phone to provide financial services to those without access to traditional banks. Innovations in mobile technology the banks are conduct fast paced demands among the various group of peoples or customers in the 21st Century through the high-quality of response and m-banking which is an integral part of
m-commerce has become very popular among mobile users ever since its existence in 2007.
The success of m-banking services depends upon the mobile network operator,
m-banking technology vendor, bank and the customer. Further, m-banking has great deal of capabilities to offer value-added service, transformation of information and decision making services to the organization. M-banking is a type of m-commerce service since it allows consumers to perform the following technology-enabled financial information availed from the banks through the mobile device. Therefore, the Government of India and the Reserve Bank of India (RBI) encourage banks to provide banking facilities to those peoples through m-banking technology. In the year 2008, the RBI issued m-banking guidelines to the banks. This disqualifies mobile network operators from offering their own service.

1.3. Present position of m-banking in the Banking Sector of India

Presently, 12 private sector banks, 4 foreign sector banks, 12 nationalized banks, all State Bank Groups and one co-operative bank implemented the m-banking services to their customers. Its overall performance of March'11 is 8278529 transactions and its value is Rs. 7154270120. Among this development, the sharing of co-operative bank is 44 transactions and its value of Rs. 12620.

1.4 Statement of the Problem

The mobile technology has given potential for banks regarding customers' expectations. The changes that mobile technologies have brought to banking are enormous in their impact on officers/employees, and customers of banks. Advances in mobile technology are allowing for delivery of financial products and services more conveniently and effectively than traditional banks. Rapid access to important financial information and the ability to act quickly and effectively will distinguish the successful banks of the future. The bank gains a vital competitive advantage by having a door marketing of their financial products and accountable customer service environment and new, streamlined business processes. For that reason, relevant literature and past research works were extensively reviewed a wide range of published works, in order to conduct the present study more effectively.

This study found out several previous studies related to current study area but though a number of studies have been conducted in the international arena only few studies can be found in the Indian context. The study is devoted to how the bankers observe about m-banking services through the filling by following research gaps. Further, most of the foreign studies are focussed on adoption of mobile banking / Information Technology aspects from customers' view except Lebanese Bank (Naoufel. D, et.al), Sudanese Commercial Banks (Mohamed. O, et.al) and Germany Banks (Tiwari. R et.al 2001). Therefore, this study is conducted to study the adoption factors of mobile banking by the bankers of Indian context.

The above related issues and research gaps raised the following questions in the minds of the researcher.

What are the factors influencing the adoption of m-banking technology by the bankers?

How the adopting factors on m-banking differ between bankers?

In order to find out the answers for the above raised issues the researcher has undertaken this research work titled *"Influencing Factors on Adoption of Mobile Banking Technology by the Bankers of India"* with the following objectives.

1.5. Objectives of the Study

1. To explore the influencing factors on adoption of mobile banking technology by the bankers
2. To comparison of adoption factors of mobile banking technology between the bankers.

1.6. Hypotheses of the Study

In consistent with the objectives the following hypotheses were formed by the researcher:

Ho_1: f_1, f_2.f_3...f_n independently will have a negative effect on adoption of mobile banking technology by the bankers.

Ho_2: Related factors (f_1,f_2,f_3……f_n) have lesser influence on the adoption of mobile banking technology by the bankers.

Ho_3**:** The influencing factors (f_1, f_2, f_3, ……..f_{10}) on the m-banking technology adoption between the bankers do not differ significantly.

2. Methods And Materials

The present study has been done by adopting empirical research design. This study has been conducted by using the following methodology as given under the suitable headings.

2.1. Data and Source

Primary data related to mobile banking are used in this study.

Primary data helps to find the influencing factors on adoption of m-banking technology by the bankers. Primary data were collected from bankers who are working in the rank of officers/managers (employees) of bank branches of Tamilnadu, India. It is collected through the well-framed questionnaire-cum-interview schedule (questionnaire-cum-interview schedule is hereafter referred to as questionnaire only) and these instruments cover the objectives of the present research. Further, secondary sources related to theoretical inputs of this paper were collected from books, journals, various online–free journals, websites and discussion with expertise of professionals in the field of m-banking.

2.2. Questionnaire

The researcher approached the bank officers who are working in the bank branches of public and private sector banks in Tamil Nadu State of India. The two-page questionnaire was given and responses were collected from the officers regarding their opinion level of various qualities (of types 31 variable) of m-banking using a Five-point Likert format ranging from 'positive opinion' score of 5 to 'negative opinion' score of 1. In addition, overall adoption of m-banking was also collected from the bank officers through the Five-point Likert scaling technique ranging from very high (5) to 'very low' (1). The above opinion was collected from the bank officers based on their banking sector. Regarding collection of primary data, a total of 500 questionnaires were distributed based on the proper sampling method. Out of a total of 500 questionnaires distributed, 425 were collected back. 60 sets were rejected with the reason such as illegible handwriting and partial / not response given by the bank officers. The 365 questionnaires that make up 73% of the data were input in the final study.

2.3. Sampling area and Framework

Tamilnadu state is the sampling area for current research work. It is selected for the intention of finding out the influencing factors on adoption of mobile banking by the bank officers. Tamilnadu has thirty-one districts (before dividing Tiruppur into a separate district) and Tamilnadu has 5890 bank branches of commercial banks. Those branches become public sector (4250 branches), private sector (1339 branches), foreign sector banks (29 branches) and RRBs (272 branches). Moreover, Tamilnadu stands fourth in the number of bank branches and the remaining three states are Uttarpradesh, Maharashtra and Karnataka. So, Tamilnadu is also the suitable place for conducting the research. Moreover, all the public and nineteen private sector banks have opened their branches in Tamilnadu. But, 95% of the bank branches are public and private sector banks in Tamilnadu. Due to this reason, the bank officers were divided into two different groups, which differed in terms of their banking sector like public and private sector bank officers. Among the thirty-one districts in Tamilnadu, the researcher planned to select two major districts, namely, Chennai, the state capital and Coimbatore including Tiruppur, known as the South Indian Manchester, as sample districts. Hence, the researcher wished to undertake this study in those districts of Tamil Nadu. In each district 250 bank officers were surveyed for sample. Based on the stratified disproportionate random sampling technique, the bank officers are to be grouped into public and private sector banks officers. The sample of bank officers taken for the study represents five officers from each bank branches and each sample district providing 50 bank branches. The bank branches become 25 in the public and 25 in the private sectors banks.

2.4. Period of Study

The primary data were collected during the period from January to June'2011.

2.5. Application of Statistical Tools

The results of the analysis are presented in suitable headings derived from the various statistical tools like factor analysis, independent sample t-test, correlation, regression and Kendall's W test.

2.6. Limitations of The Study

The major limitation of the study is to restrict number of statements are thirty one in numbers of mobile banking technology aspects and not consider for foreign sector banks.

3. Analysis and Discussions

This part to find empirically tenable and logically well-founded answers to the questions raised in the statement of problem, extensive field research was conducted supplemented by a wide research. A survey was organized to explore the influencing factors on adoption of m-banking technology by the bankers. For this purpose, 365 valid bank officers/managers (officers/managers are hereafter referred as bankers) are considered throughout this part. In addition, the bankers are divided into Public (211 valid sample) and Private Sector (154 valid sample). Hereafter bankers of public and private sector are referred as public sector banks and private sector banks. The framed analyses are tested with suitable data using the correct tools and the results are also presented throughout this chapter.

3.1. Influencing factors on adoption of m-banking technology by the bankers (N=365)

Factor analysis is a multivariate statistical technique used to condense and simplify the set of large number of variables to smaller number of variables called factors. This technique is helpful to identify the underlying factors that determine the relationship between the observed variables and provides an empirical classification scheme of clustering of statements into groups called factors.

Using all the 31 variables regarding adoption of m-banking technogy services namely A1,A2,A3,……. and A31, Factor analysis is performed in order to group the variables on priority basis based on the strength of inter-correlation between these opinions, called 'Factors' and clustering these variables in to the factors extracted and the results are presented in the following tables. Firstly, the Kaiser-Meyer-Olkin Measure of sampling adequacy shows (.688) higher than the 0.5 which explains that the sample used in the factor analysis is adequate. Further, Bartlett's Test of

Sphericity test shows that the asymptotic significant value of chi-square is .000 (Approx. χ^2 4463.580, df 465) which is less than the one percent level of significant value 0.01. It indicates that there is relationship among the variables chosen for this analysis.

Attribute	I	II	III	IV	V	VI	VII	VIII	IX	X	Communalities
A1	-0.132	0.095	**0.494**	0.273	0.362	0.188	0.022	0.025	-0.118	0.172	0.556
A2	0.128	-0.186	-0.095	0.001	-0.151	-0.019	-0.097	0.056	-0.015	**0.781**	0.706
A3	0.027	0.041	0.151	-0.146	**0.724**	0.171	-0.080	-0.035	-0.050	0.024	0.610
A4	0.134	0.127	0.047	-0.030	**0.738**	0.141	0.106	-0.027	-0.240	-0.080	0.677
A5	0.084	0.144	0.023	0.242	**0.672**	-0.239	0.132	0.054	-0.074	-0.275	0.697
A6	-0.043	0.217	-0.096	0.107	0.171	0.230	**0.658**	-0.006	-0.015	-0.009	0.585
A7	0.040	**0.624**	0.079	-0.131	-0.167	0.366	0.188	-0.015	-0.210	-0.006	0.656
A8	-0.042	**0.762**	0.091	0.165	0.022	0.118	0.030	-0.022	-0.013	-0.239	0.691
A9	0.128	**0.600**	-0.157	0.319	0.125	-0.306	0.129	0.004	0.043	-0.068	0.635
A10	0.028	**0.725**	-0.154	0.276	0.082	-0.050	-0.063	0.039	0.130	-0.135	0.676
A11	0.238	0.258	-0.067	**0.579**	0.064	-0.308	0.225	-0.134	0.161	0.058	0.660
A12	0.024	**0.548**	0.147	0.109	0.334	-0.044	0.355	-0.070	0.130	0.266	0.667
A13	0.044	**0.536**	0.280	-0.151	0.237	-0.168	0.403	0.005	0.207	0.102	0.690
A14	0.147	0.076	-0.023	0.358	0.063	**0.613**	0.108	-0.085	-0.182	0.025	0.589
A15	-0.008	0.124	0.084	**0.753**	-0.030	0.235	0.166	0.085	0.121	0.105	0.706
A16	0.043	0.066	0.045	**0.839**	-0.042	0.089	-0.016	-0.020	-0.062	-0.118	0.740
A17	0.136	0.026	**0.911**	-0.023	0.049	0.065	0.103	0.047	-0.057	-0.082	0.880
A18	0.152	0.016	**0.896**	0.029	0.081	-0.132	0.037	-0.024	0.004	-0.076	0.858
A19	**0.795**	-0.066	-0.114	0.046	0.034	0.218	0.074	0.004	0.069	0.082	0.717
A20	**0.703**	-0.006	-0.053	-0.114	0.245	0.343	-0.002	0.022	0.005	0.133	0.706
A21	**0.788**	0.079	0.214	0.059	-0.037	-0.168	0.269	0.054	0.005	-0.061	0.785
A22	**0.579**	0.147	0.160	0.115	0.036	0.041	0.269	0.082	0.119	-0.203	0.534
A23	0.259	-0.097	-0.016	0.043	0.158	**0.719**	0.033	0.111	0.097	-0.045	0.645
A24	0.035	0.121	0.060	0.026	-0.247	0.045	0.010	0.025	**0.578**	0.209	0.462

A25	**0.653**	0.005	0.074	0.003	-0.082	0.240	-0.227	0.063	-0.040	0.154	0.576
A26	**0.751**	0.129	0.148	0.122	0.126	-0.184	-0.283	-0.057	0.027	0.019	0.752
A27	0.257	**0.517**	0.287	-0.171	0.263	-0.223	0.082	0.036	-0.098	0.110	0.593
A28	0.071	0.060	0.247	0.162	-0.092	-0.062	**0.742**	-0.038	-0.130	-0.134	0.695
A29	0.085	-0.032	-0.146	0.052	-0.090	-0.078	-0.084	-0.025	**0.720**	-0.188	0.608
A30	0.041	0.117	0.044	0.051	-0.105	-0.108	-0.127	**0.796**	-0.203	0.083	0.741
A31	0.064	-0.114	-0.012	-0.059	0.076	0.154	0.083	**0.787**	0.193	-0.026	0.714
Eigen Value	**3.340**	**3.037**	**2.383**	**2.274**	**2.214**	**1.925**	**1.795**	**1.338**	**1.272**	**1.138**	**20.716**
% of Variance	**11.063**	**9.797**	**7.688**	**7.334**	**7.143**	**6.209**	**5.791**	**4.316**	**4.103**	**3.669**	**67.113**
Cumulative % of Variance	**11.063**	**20.860**	**28.548**	**35.882**	**43.025**	**49.234**	**55.025**	**59.341**	**63.444**	**67.113**	
Extraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization											

Table:- 1 Influencing Factors on Adoption of M-Banking Technology by the Bankers

Table 1 gives the rotated factor loadings, communalities, eigen values and the percentage of variance explained by the factors. Out of the 31 variables, 10 factors have been extracted and these 10 factors put together explain the total variance of these influencing factors to the extent of 67.113 %. In order to reduce the number of factors and enhance the interpretability, the factors are rotated. The rotation increases the quality of interpretation of the factors. There are several methods of the initial factor matrix to attain simple structure of the data. The varimax rotation is one such method to obtain better result for interpretation is employed and the results are given in Table 2.

Factor	Variables	Rotated Factor Loadings
I -11.063	A19 (Technical infrastructure)	.795
	A21 (Effective feedback mechanism and customer enquiry)	.788
	A26 (Efficient budget allocation to technolgy-oriented service)	.751
	A20 (Motivate to do other works in the banks)	.703
	A25 (Risk free technology)	.653
	A22 (Source of income)	.579
II-9.797	A8 (Helps to check the fraud related issues)	.762
	A10 (Market risk)	.725
	A7 (Timely service)	.624
	A9 (Reducing paper based work)	.600
	A12 (Low service charge)	.548
	A13 (Functional boost)	.536
	A27 (Ease of use)	.517
III-7.688	A17 (Providing financial service to the unbanked center)	.911
	A18 (Mobile banking service will reach critical mass)	.896
	A1 (Size of the Bank)	.494
IV- 7.334	A16 (Cost of doing bank service)	.839
	A15 (Reliable security measures)	.753
	A11 (Technical expertise)	.579
V-7.143	A4 (Customer Awareness)	.738
	A3 (More number of financial product/information)	.724
	A5 (Reliable Information)	.672
VI- 6.209	A23 (Reduced by crowd at the bank counters)	.719
	A14 (Reduced by usage of other e-channels)	.613
VII – 5.791	A28 (Reduce the number of employees)	.742
	A6 (Expansion of financial service)	.658
VIII – 4.316	A30 (Building customer's trust)	.796
	A31 (Versatility of technology)	.787
IX – 4.103	A29 (Financially supported by the bank)	.720
	A24 (Complex level of mobile banking technology)	.578
X – 3.669	A2 (Perceived relative advantage)	.781

Table :- 2 Clustering of Parameters into factors on Adoption of Mobile Banking Technology

Ten factors were identified as being maximum percentage variance accounted. The **6** variables A19, A21, A26, A20, A25 and A22 were grouped together as factor I and accounts 11.063 % of the total

variance. The **7** variables A8, A10, A7, A9, A12, A13 and A27 constituted the factor II and accounts 9.797 % of the total variance. The **3** variables A17, A18 and A1 constituted the factor III and accounts 7.688 % of the total variance. The **3** opinions A16, A15 and A11 constitute the factor IV and accounts 7.334 % of the total variance. The **3** variables A4, A3 and A5 constituted the factor V and accounts 7.143% of the total variance. The **2** variables A23 and A14 constituted the factor VI and accounts 6.209% of the total variance. The **2** variables A28 and A6 constituted the factor VII and accounts 5.791% of the total variance. The **2** variables A30 and A31 constituted the factor VIII and accounts 4.316% of the total variance. The **2** variables A29 and A24 constituted the factor IX and accounts 4.103% of the total variance. Further, a variable (A2) constituted the factor X and accounts 3.669% of the total variance. Thus the factor analysis condensed and simplified the 31 adoption variables and grouped into 10 factors explaining 67.113 % of the variability of all the variables. Finally, 10 factors named as follows, and these factor names were derived from within the factor. The provided factor names were based on the high rotated factor loadings within the factor and it is given table 3.

Factor	Name of the factor
I	Technical Infrastructure (f_1)
II	Helps to check fraud related issues (f_2)
III	Service to unbanked center (f_3)
IV	Cost of doing bank service (f_4)
V	Customer awareness (f_5)
VI	Crowd at the bank counters (f_6)
VII	Reduce the number of employees (f_7)
VIII	Building customer's trust (f_8)
IX	Financial support (f_9)
X	Perceived relative advantage (f_{10})

Table :-3 Adopting factors on mobile banking technology

3.2. Relationship of the influencing factors to the overall adoption of m-banking technology by the bankers (N=365)

The Pearson Bi-variate correlation co-efficient (r) should be applied because it helps to found the correlation (effect) level about influencing factors (f_1, f_2, f_3, f_4, f_5, f_6, f_7, f_8, f_9 and f_{10}) and overall adoption of m-banking technology through the testing of hypothesis.

Ho_1: f_1, f_2, $f_{3,}$……f_{10} independently will have a negative effect on adoption of m-banking technology by the bankers.

Independent variable	Dependent variable	r co-efficient	Effect level
Technical Infrastructure (f_1)	Overall adoption of m-banking technology	0.132	Low positive effect
Helps to check fraud related issues (f_2)	Overall adoption of m-banking technology	-0.095	Low negative effect
Service to unbanked center (f_3)	Overall adoption of m-banking technology	-0.494	Moderate negative effect
Cost of doing bank service (f_4)	Overall adoption of m-banking technology	-0.273	Low negative effect
Customer awareness (f_5)	Overall adoption of m-banking technology	-0.362	Low negative effect
Crowd at the bank counters (f_6)	Overall adoption of m-banking technology	-0.188	Low negative effect
Reduce the number of employees (f_7)	Overall adoption of m-banking technology	-0.022	Low negative effect
Building customer's trust (f_8)	Overall adoption of m-banking technology	-0.025	Low negative effect
Financial support (f_9)	Overall adoption of m-banking technology	0.118	Low positive effect
Perceived relative advantage (f_{10})	Overall adoption of m-banking technology	-0.172	Low negative effect
** = Correlation at 1% level, * = Correlation at five percent level			

Table- 4 Relationship of the influencing factors and overall adoption of m-banking technology

From table 4, it is noticeable that 'r' co-efficient values between influencing factors and overall adoption of m-banking technology come out to be 0.132, 0.095, -0.494, -0.273, -0.362, -0.188, -0.022, -0.025, 0.118 and -0.172 between different factors and overall adoption of m-banking technology. For that reason, hypotheses are accepted and concluded that f_2, f_3, f_4, f_5, f_6, f_7, f_8, f_{10} have independently negative effect on adoption of m-banking technology. On the other hand, $f_1$and f_9 have independently positive effect on m-banking adoption by the bankers.

3.3. Final framework for influencing factors on adoption of m-banking technology by the bankers (N=365)

As per the recommendation of r-path co-efficient value (Refer table 4) that suggests that all the independent and dependent variable are suitable for developing a model using Step-wise multiple regression with the purpose of exploring the influencing factors on adoption of m-banking technology by the bankers. **Step-wise Multiple Regression** analysis is made of Y-Overall adoption of m-banking score by the bankers, with the explanatory factor scores like X_1-Technical infrastructure (f_1)**;** X_2-Helps to check fraud related issues (f_2); X_3- Service to unbanked center (f_3); X_4- Cost of doing bank service (f_4); X_5- Customer awareness (f_5); X_6- Crowd at the bank counters (f_6); X_7- Reduce the number of employees (f_7) ; X_8- Building customer's trust (f_8); X_9- Financial support (f_9) and X_{10}- Perceived relative advantage (f_{10}). The following regression model is fitted for performance:

$$Y = b_o + b_1.X_1 + b_2.X_2 + b_3.X_3 + \ldots\ldots\ldots$$

where,

b_1, b_2,……. are partial regression coefficients; b_o-constant and the results are presented in the following table.

Ho_2: Related factors (f1, f2, f3, ...fn) have lesser influence on the adoption of m-banking technology by the bankers.

Model	Unstandardized Coefficients		t	Sig.	R^2
	B	Std. Error			
(Constant)	3.386	0.047	72.406	0.000**	
Service to unbanked center (f_3)	-0.655	0.047	-13.981	0.000**	
Customer awareness (f_5)	-0.479	0.047	-10.229	0.000**	
Cost of doing bank service (f_4)	-0.361	0.047	-7.717	0.000**	
Crowd at the bank counters (f_6)	-0.250	0.047	-5.328	0.000**	
Perceived relative advantage (f_{10})	-0.227	0.047	-4.851	0.000**	
Technical infrastructure (f_1)	0.174	0.047	3.724	0.000**	
Financial support (f_9)	0.156	0.047	3.334	0.001**	**0.555**
Helps to check fraud related issues (f_2)	-0.126	0.047	-2.696	0.007**	
Dependent Variable: Overall adoption of m- banking					

Table-5 Final model for influencing factors on adoption of m-banking technology by the bankers

Regression Fitted: $Y = 3.386 – 0.655\ X_3 - 0.479\ X_5 – 0.361\ X_4 – 0.250\ X_6 – 0.227\ X_{10} + 0.174\ X_1 + 0.156\ X_9 - 0.126\ X_2$

	SS	df	MS	F	Sig.
Regression	156.051	1	156.051	117.407	
Residual	482.480	363	1.329		
Total	638.532	364			.000**
Regression	239.582	2	119.791	108.697	
Residual	398.949	362	1.102		
Total	638.532	364			.000**
Regression	287.122	3	95.707	98.320	
Residual	351.409	361	0.973		
Total	638.532	364			.000**
Regression	309.787	4	77.447	84.810	
Residual	328.745	360	0.913		
Total	638.532	364			.000*
Regression	328.571	5	65.714	76.111	
Residual	309.961	359	0.863		
Total	638.532	364			.000**
Regression	339.644	6	56.607	67.803	
Residual	298.887	358	0.835		
Total	638.532	364			.000**
Regression	348.518	7	49.788	61.288	
Residual	290.014	357	0.812		
Total	638.532	364			.000**
Regression	354.320	8	44.290	55.477	
Residual	284.211	356	0.798		
Total	638.532	364			.000**
** = Significant at one percent level					

Table- 6 Analysis of Variance for Regression

The step-wise multiple regression model indicates that out of the 10 explanatory factors, 8 factors, namely, X_3 X_5, X_4, X_6, X_{10},X_1, X_9 and X_2 have significantly contributed to Y as their 't' values are significant at one percent level of significant value. The significant 'F' in the analysis of variance of multiple regression model for Y indicates the overall significance of the model fitted. The coefficient of determination R^2 value shows that these variables put together explain the variations of Y to the extent of 55.5 %. For that reason, the null hypothesis is rejected. It can be reported that eight related factors have high influence on the overall adoption of m-banking technology by the bankers.

3.4. Comparison of influencing factors on adoption of m-banking technology between the public and private sector banks

Independent sample t-test used to find out the difference between the public and private sector banks regarding their influencing factors on m-banking technology adoption. Here, each factor is treated as dependent variable and banking sector is independent variable. Further, mean score of each group of the bankers is supportive to find out which group of banks has more adoption of m-banking compared with other group by testing the hypothesis with appropriate measurement of data.

Ho_3**:** The influencing factors (f_1, f_2, f_3, ……..f_{10}) on the m-banking adoption between the public and private sector banks do not differ significantly.

Table – 7: Difference of influencing factors on m-banking technology adoption between Public and Private Sector Banks								
Factor	**Banking Sector**	**N**	**Mean**	**SD**	**df**	**t-value**	**Sig. (2-tailed)**	**Result**
Technical Infrastructure (f_1)	Public	211	0.020	0.981	363	0.442	0.659	NS
	Private	154	-0.027	1.028				
Checking frauds (f_2)	Public	211	0.040	1.010	363	0.905	0.366	NS
	Private	154	-0.055	0.986				
Service to unbanked center (f_3)	Public	211	-0.003	0.991	363	-0.058	0.954	NS
	Private	154	0.004	1.015				
Cost of doing bank service (f_4)	Public	211	0.011	0.980	363	0.242	0.809	NS
	Private	154	-0.015	1.030				
Customer awareness (f_5)	Public	211	0.043	1.028	363	0.955	0.34	NS
	Private	154	-0.058	0.960				
Crowd at the bank counters (f_6)	Public	211	-0.006	0.969	363	-0.134	0.894	NS
	Private	154	0.008	1.044				
Reduce the number of employees (f_7)	Public	211	0.038	1.000	363	0.852	0.395	NS
	Private	154	-0.052	1.001				
Building customer's trust (f_8)	Public	211	-0.004	0.991	363	-0.091	0.927	NS
	Private	154	0.006	1.015				
Financial support (f_9)	Public	211	-0.057	1.016	363	-1.269	0.205	NS
	Private	154	0.078	0.975				
Perceived relative advantage (f_{10})	Public	211	0.187	1.022	363	4.283	.000**	S
	Private	154	-0.256	0.911				

Table -7 Difference of influencing factors on m-banking technology adoption between Public and Private Sector Banks

From the table 7, it is clear that the calculated values of 't' (ignore the sign) are 0.442, 0.905, 0.058, 0.242, 0.955, 0.134, 0.852, 0.091, and 1.269 whose significant values are 0.659, .366, .954, .809, .340, .894, .395, .927, and .205 respectively which is greater than five percent level of significant

value 0.05. Therefore, the null hypothesis is accepted, i.e., there is no significant difference of influencing factors (f_1, f_2, f_3, f_4, f_5, f_6, f_7, f_8, f_9) of m-banking technology adoption between public and private sector banks.

On the other hand, calculated value of 't' between influencing factor (f_{10}) and banking sector is 4.283, whose significant value is 0.000 which is less than one percent level of significant value 0.01. So, the null hypothesis is rejected and it can be reported that there is a significant difference of influencing factor (f_{10}) of m-banking technology adoption between bankers of public and private sector.

4. Conclusion

This study conclude that ten different factors influenced to adoption of m-banking technology by the bankers like, technical infrastructure, service to unbanked center, cost of doing bank service, customer awareness, crowd at the bank counters, reduce the number of employees, building customer's trust, financial support and perceived relative advantage. Among them all factors (except reduce number of employees and building customer trust) highly influenced to adoption of m-banking by the bankers of India. This followed by all the influencing factors (except perceived relative advantage) of m-banking technology adoption between public and private sector banks do not differ significantly.

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