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Branchless Banking Technologies and Financial Inclusion: An Investigation in Vellore District, Tamil Nadu, India

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Abstract

Objective: This paper investigates the extent of financial inclusion by branchless banking technologies in Vellore district of Tamil Nadu, India. **Methods/ Statistical Analysis:** The respondents of this study were bank account holders who have already started to infiltrate in the financial inclusion process. The typical branchless banking technologies used in this study were such as internet banking, Automated Teller Machines (ATMs), Point-of-Sale system (POS), mobile banking and kiosk banking. To statistically prove the state of financial inclusion in the study area, Structural Equation Modeling (SEM) was used. **Findings:** It is resulted that there is another significant relationship identified between income and internet banking. It is concluded that income has higher influence and direct relationship with internet banking. It is suggested that there is a need of cost cut and affordable technologies to the vulnerable. It will enhance the access and use of financial system, creates job opportunities, investments in education and to manage unexpected risks and economic shocks. **Application/ Improvement:** This study used SEM with the support of technologies to identify the level of financial inclusion.

Keywords: Financial Inclusion, Branchless Banking Technology, Vellore District

1. Introduction

The importance of branchless banking and its technologies came out to enhance the convenience of bank customers especially people who are out of reach to bank branches and to cut the costs incur by banks to install branches in unbanked regions. In India, the availability of technology is more when compared to other developing countries. Low middle income groups use abundant technological devices in day to day life like mobile devices and Automated Teller Machines. The technologies that is associated with banking system needs optimal utilization to maximize branchless banking services and to minimize the cost and time of banks and customers as well[1].

This study is carried out among the bank account holders in Vellore district of Tamil Nadu, India. Vellore district is selected as study area because it connects major cities like Chennai, Bengaluru and Coimbatore; where there is a vast moving population identified in this district that need branchless banking all the time. The reason for selecting bank customers is that they have already entered into the process of financial inclusion plan after the drive of Pradhan Mantri Jan Dhan Yojana from the year 2014. The typical and core technologies pertain to branchless banking were the variables of this study. They are internet banking, ATMs, POS, mobile banking and kiosk banking. The growth of branchless banking is tremendously growing but still the financial inclusion lies on its first phase i.e., opening of bank account. It is found that only 23% of the accounts opened in PMJDY were active and the remaining is dormant. This study came out with the level of usage of branchless banking technologies in the study area.

Technological evolution in the banking industry is a boon to India, which connected many industries to banks. Banking system in India was technologized after the lib-

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eralization of the nation in 1990sand the introduction of computers made Indian banking industry to play in the global market[2]. But before the introduction of computers in formal financial institutions like banks and post offices, the financial transactions were entered in ledger books which consumed more time and caused human errors. Maintenance of huge customer data was a great challenge[3]. The technology intervention significantly reduced the time consumption and causation of human errors in financial entries. The front and back office operations in banks become speedy because of technology. Enactment of Core Banking Solution has connected all the bank branches and created a centralized network based computing system, through which the customer relationship management became better.

With the help of technology, the proximity has come down to banking access. An individual from any part of the world can access his/ her account round the clock and technology is providing tailored service to its customers[4]. Currently, all the scheduled commercial banks have their official websites, which provide the information about the financial services provided by that bank[5]. All the banking information are transferable in those websites, so people who are able to use computer and internet can easily get informed about a bank, its products and services, branch location and so on. Apart from these facilities, people who cannot either reach branch or avail technologies, can get access to financial products and services in their doorstep through agents called business correspondents[6]. They are appointed by banks that act as a bridge between bank and customers, render financial services, and receive commission from the bank. It is noted that the relationship between electronic banking and customer value creation is positive, which means there is a possibility of more customers into banking sector if financial transactions are electronically made[7].

On one side, there are reviews that disclose the effect of technology in banking industry, whereas in the other, the limitations faced by the people to use technologies were addressed by many researchers and reviewers. Though ATM created a big revolution in India, it is cited by the World Bank that only 39% of the bank account holders have an ATM card and the remaining is having just a bank account[8]. It is also mentioned that the number of inactive accounts have increased in numbers after introduction of PMJDY[9]. The usage of internet banking is based upon availability of network[10]. In rural and remote regions, the possibility of network is very poor where there is no possibility for use of technology based banking system[11]. In case of mobile banking, the basic and minimum hardware requirement is a basic mobile phone to access second-generation wireless telephone technology connectivity i.e., 2G[12]. The speed of mobile internet in 2G used in basic mobile phones has very limited bandwidth of network usage and it will take long time to load the login of users. If a person plans to upgrade to third generation connectivity, the hardware requirement differs and the cost will be comparatively higher to 2G[13]. The internet connection is not only mandatory for the transactions; it is also required for regular updates of software being provided by the bank. Apart from these problems identified, India, which has a large number of mobile phone users in the world, can reach the customers to any part of the world, which requires appropriate plan that is suitable for low-income people to put them into use[14]. The other essential technologically driven banking services like kiosks helps the people to greater extend where people can render transactions upto Rs. 10,000 every day in their place itself[15]. From the lights of the above reviews, it is found that there is a huge population, which should know the importance of technological banking system to make them financially included.

2. Statement of the Problem

In India, installation of branchless technologies in banking sector made financial system to perform financial transactions efficiently. But when it comes to effectiveness, it fetches less improvement. Technology has created an access to financial services to all but when it comes to usage; people become hesitant which creates a paradox in this financial context[16]. World Bank, in the year 2015 reported that India is one of the largest unbanked countries in the World and moreover the country has high dormant bank accounts of around seventy-five percent, which is forty three percent of world dormant accounts[17]. The usage of bank accounts rather than savings is very low which slow down the reach of complete financial inclusion in the country.

3. Objective of the Study

This study is conducted to identify the level of financial inclusion by emphasizing the extent of usage of technology driven banking services in the study area.

4. Research Methodology

The population of this study is Vellore district. The reason for selecting this district is due to its location. This district connects major cities and states by roadways and railways, provided many number of offsite bank ATMs and kiosks and this facilitates the people who move in and around the district and who do not find time to reach the bank branch for financial transactions. Targeted population is bank account holders in the study area because they are already opened bank accounts but still not using other financial services.

Sample size determined for this study is 150[18] from the population size is 39,36,331, with a margin of error at 8%. From which, the respondents were identified by asking them whether he/ she hold a bank account and proceeded with questionnaire. Totally 300 questionnaires were distributed and 150 were taken for the study. The remaining 86 were rejected due to incomplete information and 64 were not returned back.

Descriptive research is used as the research design and simple random technique in probability sampling is used to select the sample. Structured questionnaire is the tool used for data collection. This study consists of metric and categorical variables hence Structured Equation Modeling (SEM) is used as data analysis technique.

The study consists of independent variables such as internet banking, ATMs, POS, mobile banking and kiosk banking. Dependent variables are demographic profile of respondents such as age, gender, educational qualification and income.

5. Results

The internal consistency of the study was tested and resulted with high reliability of 0.964 which is tabulated in Table 1. The data were analyzed using Structured Equation Modeling. The results are tabulated in Table 2. It is interpreted that there is a relationship between the age and all the technological factors. As the regression weights shows a relationship, it is inferred that age has high degree of influence with the branchless banking technologies.

There is another significant relationship identified between income and internet banking. It is concluded that income has higher influence and direct relationship with internet banking. When the income is earned more, the spending for internet banking will be high and vice versa.

There is no significant relationship between educational qualification and technological factors. And there is no significant relationship identified between income and technological factors except internet banking.

This regression estimates and covariates and correlations of independent variables are run through a path diagram, which is illustrated in Figure 1.

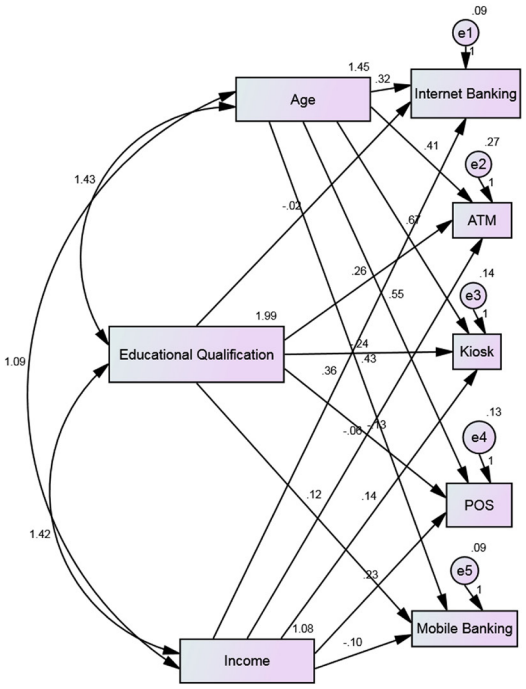

Figure 1. Path diagram.

Table 1. Reliability statistics

Cronbach's Alpha	N of items
0.964	8

Source: Primary data compilation

Table 2. Regression weights

			Estimate	S.E.	C.R.	P
Internet banking	<---	Age	.322	.042	7.620	***
ATM	<---	Age	.412	.073	5.646	***
Kiosk	<---	Age	.669	.052	12.917	***

			Estimate	S.E.	C.R.	P
POS	<---	Age	.555	.050	11.177	***
Mobile banking	<---	Age	.433	.042	10.267	***
Internet banking	<---	Edu qual	-.017	.070	-.250	.802
ATM	<---	Edu qual	.262	.120	2.176	.030
Kiosk	<---	Edu qual	-.238	.085	-2.786	.005
POS	<---	Edu qual	-.129	.082	-1.578	.115
Mobile banking	<---	Edu qual	.117	.070	1.683	.092
Internet banking	<---	Income	.358	.104	3.429	***
ATM	<---	Income	-.060	.181	-.332	.740
Kiosk	<---	Income	.144	.128	1.128	.259
POS	<---	Income	.226	.123	1.846	.065
Mobile banking	<---	Income	-.100	.104	-.956	.339

Source: Primary data compilation

6. Conclusion

From the results derived, it is clear that there is a need in the improvement of branchless technology in banking system because in regression, most of the results shown insignificant relationship. This is because of the imbalance between the cost and availability of technology. The technology is available, whereas the cost is not affordable. In case of ATM withdrawals, the RBI has set the limitations that raised the transactions cost. Because of this reason, people are nowadays using POS system o fill up the fuel for vehicle and to purchase. There is a vast section of population with less or no knowledge of using this system, which need an affordable technology by means of cost and hardware. As the access and use of financial system by the means of technology are broadened, it is possible to boost the creation of jobs and augmented investments in the field of education, which will directly support the vulnerable to manage unexpected risks and financial shocks.

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