

## Nexus Between Financial Technology and Financial Inclusion in Nigeria

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### **Abstract**

*Over the years, the banking sector in Nigeria has come up with technologically-driven financial services aimed at increasing the attractiveness of banking services to Nigerians. With the advent of financial technology, it is expected that financial inclusion would be enhanced. Thus, this study examined the nexus between financial technological advancement and financial inclusion in Nigeria for the period 2013-2022. Financial technology was proxied by automated teller machine banking technology, Point of Sale banking technology, web banking technology and mobile banking technology while financial inclusion was proxied by deposit mobilized by rural branches of deposit money banks in Nigeria. Ordinary Least Squares (OLS) simple regression technique was employed to analyze the data in order to determine the 'individual' impacts of the independent variables on the dependent variable. Findings showed that ATM, POS, web and mobile banking technologies had positive and significant impact on financial inclusion in Nigeria. However, the study showed that the 'individual' impacts of POS ( $t = 10.72$ ) and mobile ( $t = 10.61$ ) on financial inclusion in Nigeria were more significant than those of ATM ( $t = 5.11$ ) and web banking ( $t = 6.51$ ), respectively. The study concluded that financial technology has a significant relationship with financial inclusion in Nigeria. The researcher recommended, that deposit money banks should fashion out ways of making POS and mobile banking more accessible to all categories of businesses and individuals so as to enhance financial inclusion in Nigeria.*

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### **Introduction**

The general impression of many is that the banking sector plays prominent roles in the conduct of economic activities through the mobilization of deposits and granting of loans to their customers. It is therefore not surprising that in many urban areas in Nigeria, the presence of so many banks dominate the landscape of the towns. However, the compelling argument is that Nigerian banking sector would have mobilized more deposits if all Nigeria's bankable population is financially included. But this has not been so given that a large number of bankable adults in Nigeria have remained unbanked as the operations of the banks remain concentrated in the urban areas rather than the rural areas. In 2016, it was estimated that only 38.3 percent of Nigeria's adult population enjoyed banking services while a whopping 61.7 percent were unbanked (EFlnA, 2016). This

means that 61.7 percent of Nigeria's adult population does not enjoy formal banking and financial services. One reason given for the high proportion of unbanked population was the inconveniences they unbanked citizens attached to operating bank accounts. This has impugned on the deposit mobilization efforts of the banks that would have increased if more adults opened and operated bank accounts. More so, exclusion of Nigerian bankable populace from the formal banking system has continued to make the Central Bank of Nigeria (CBN) experience difficulty in controlling the volume of money in circulation thereby making the CBN to lose its grip on inflation rate (Ene, Abba & Fatokun, 2019).

In the views of CBN (2009), about 83.9 percent of total money in circulation in Nigeria is not within the nation's banking system but in the hands of the unbanked informal sector. The implication of this is that only 16.1 percent of total money in circulation in Nigeria is controlled by the formal banking sector. This portends a very dangerous trend and to curb this trend, the government came up with the policy of financial inclusion. Financial inclusion is a deliberate policy of government aimed at ensuring that economic agents have access to financial services timely and at an affordable cost. It was argued that financial inclusion would aid in delivering financial services to the disadvantaged and low income segment of the society at affordable cost thereby eliminating the excess money held by the informal sector (Nkwede, 2015).

Perhaps in recognition of poor level of financial inclusion and agreeing with the government, the banking sector in Nigeria came up with technologically-driven financial services aimed at increasing the attractiveness of banking services to Nigerians. This is what is referred to as financial technology or FINTECH (Akhisar, Tunay & Tunay, 2015). Financial technology is a set of innovations that compete with and/or largely sidelines traditional financial methods in the delivery of financial services. Therefore, financial technology includes a wide range of options aimed at making financial services more accessible to the general public (Abu, 2016). It includes the use of smart phones to carry out mobile banking, use of internet-enabled devices for investing service and adoption of crypto currency to mention but a few. Because of its peculiar and advanced nature, financial technology-driven services are usually provided as an end-to-end process through the internet (Olatokun & Igbinedion, 2009).

### **Statement of the Problem**

The penchant of the deposit money banks (DMBs) to establish their branches in the urban areas to the neglect of the rural areas remains one of the highest impediments to the financial inclusion efforts of the government in Nigeria. Often times, many of the deposit money banks have multiple branches in the same town in Nigeria whereas the same set of banks find it unattractive to establish a single branch of their banks in the rural communities. In this way, the awareness of what banking entails is lost on the rural dwellers that rather prefer to keep their monies in dig-up holes and other strange places. The resultant effect is that the amount of deposit that would have been mobilized by the deposit money banks is adversely affected and the financial inclusion effort of the government is undermined.

### **Objectives of the Study**

The broad objective of the study was to examine the nexus between financial technological advancement and financial inclusion in Nigeria, whereas the specific objectives were as follows:

- (i) To determine the impact of ATM banking technology on deposit mobilized by rural branches of Deposit Money Banks in Nigeria.
- (ii) To analyze the impact of POS banking technology on deposit mobilized by rural branches of Deposit Money Banks in Nigeria.
- (iii) To investigate the impact of mobile banking technology on deposit mobilized by rural branches of Deposit Money Banks in Nigeria.
- (iv) To evaluate the impact of web banking technology on deposit mobilized by rural branches of Deposit Money Banks in Nigeria.

### **Conceptual Review**

#### **Financial Technology**

Financial technology has been defined as set of financial technological innovations meant to replace the traditional financial service delivery methods. According to Shehu, Aliyu and Musa (2013), financial technology includes all technologies that make financial transactions easy, more accessible and smooth as a way of ensuring that bank customers are free from all encumbrances inherent in the old financial transaction methods. Financial technology as an operational concept was borne through calls by individuals, firms and organizations to find an easier and faster way of carrying out financial transactions devoid of delays and clumsiness which marred the traditional banking methods. Thus, the concept of financial technology is closely associated with the adoption of internet in financial transactions. This is because technology-backed financial services are provided as an end-to-end process through the use of internet (Akhisar, Tunay & Tunay, 2015).

#### **Measurement of Financial Inclusion**

Financial inclusion has been measured in several ways in the literature. In the views of Adalassossi and Kaya (2015), financial inclusion is measured by accessibility, suitability, availability and usage of financial system. Accessibility entails the individuals' ability to obtain financial services from the financial institutions at anytime desired. Suitability involves whether the services rendered by the financial institution meets the demand of the customer. Availability entails the extent to which financial services are in existence while usage is used to explain whether or not financial services platforms are patronized by the populace. Given these dimensions, Adalassossi and Kaya (2015) argued that financial inclusion was the ability of poor households to have access to basic financial services such as savings, loans and advances from formal and semi-formal financial institutions.

According to Global Partnership for Financial Inclusion (2012), there are categories of indicators of financial inclusion. Examples of these categories are formally banked adults, formally banked enterprises, enterprises with outstanding loans by regulated institutions, adults with credit by regulated institutions and point of sale. In these categories, certain indicators of financial inclusion were identified among which are percentage of adults with an account at a formal financial

institution, number of depositors per 1,000 adults, percentage of adults with at least one loan outstanding from a regulated financial institution, number of borrowers per 1,000 adults, percentage of SMEs with an account at a formal financial institution, number of SMEs with deposit accounts, percentage of SMEs with an outstanding loan, number of branches of banks per 1,000 adults, number of ATMs per 100,000 adults and number of POS terminals per 100,000 inhabitants.

Nwafor and Yomi (2018) argued that financial inclusion was measured by commercial banks deposit from rural areas, commercial banks loans to rural areas, commercial banks loans to deposit ratio and commercial banks loans to small and medium scale enterprises while Oruo (2013) identified measures of financial inclusion to include branch networks, loans to rural area, demand deposit, liquidity ratio and capital adequacy ratio. On the part of Nkwede (2015), indicators of financial inclusion are amount of loans granted by rural branches of deposit money banks, number of bank branches and deposit mobilized by rural branches of deposit money banks. In all of these, it is evident that there are different indicators of financial inclusion and the usage of any of the indicators is dependent on what a study is.

### **Theoretical Review**

#### **Technology Acceptance Theory**

This theory was propounded by Fred Davis in 1989 and was predicated on the assumption that individuals' acceptance and usage of a technology is dependent on perceived usefulness and perceived ease-of-use of the said technology. In this theory, perceived usefulness explains the belief of an individual that the use of a particular technology would improve his/her job performance. Based on the foregoing, technology acceptance theory argued that if an individual's job performance increases due to use of a particular technology, the tendency of that individual adopting that technology increase thereby increasing the level of financial inclusion. However, perceived ease-of-use explains the degree to which an individual believes that the use of a particular technology would not be cumbersome. The higher the ease of using a particular technology, the higher the willingness of individuals to adopt such technology and with it comes increased financial inclusion. This theory favours this study because the perceived usefulness and ease-of-use of electronic channels had encouraged Nigerians to adopt financial technology thereby embracing the financial inclusion efforts of the government.

#### **Diffusion of Innovation Theory**

Diffusion of innovation theory was propounded by Gabriel Trade and Rogers in 1962 and it explains how, why and the rate of spread of technology among cultures and societies. The major assumption of diffusion of innovation theory is that cultural inclinations determine how and why societies accepts or rejects any technological innovations such as financial technology-driven banking services. Thus, this theory explains why some countries or societies are early adopters of financial technologically-driven systems whereas others are late adopters. The argument of the diffusion innovation theory is that as more people embrace financial technology, the speed with which financial services are carried out increases thereby increasing the level of economic activities as well as enhancing financial inclusion. This theory also favours this study because it

could be used to explain why Nigerians have accepted financial technology and how financial theory has influences financial inclusion in Nigeria.

### **Empirical Literature**

Gakii (2012) investigated the factors that determine financial inclusion in Nairobi. The study adopted mobile financial services such as mobile money transfer, mobile payments and money banking as measures of financial inclusion and they served as dependent variables. On the other hand, age, gender, education level, tariffs associated with service and volume of transactions served as determining factors and the independent variables. The study employed the descriptive analytical methodology and multinomial Logit model in analyzing the data used. Findings revealed that all the measures of financial inclusion were significantly determined by age, gender, education level, tariff of service and volume of transactions in Nairobi.

Oruo (2013) did a study to ascertain the relationship between financial inclusion and GDP growth in Nairobi. The study covered the period 2002 to 2012. The study adopted branch networks of banks and number of automated teller machines as measures of financial inclusion and they served as independent variables while GDP growth rate was adopted as dependent variable. Ordinary Least Squares (OLS) multiple regression technique was employed in analyzing the data collected in the study. Findings revealed that branch networks of banks have strong positive relationship with economic growth while number of automated teller machines (ATM) has a weak negative relationship with economic growth in Nairobi. The study concluded that financial inclusion significantly influenced economic growth in Nairobi.

Basal (2013) examined the perspectives of technology in achieving financial inclusion in rural India. The study made use of mobile banking and ATM banking as factors that influence financial inclusion in rural India. The study specifically investigated the contributions of information and communication technology towards achieving financial inclusion in India. Qualitative research method was employed analyze the perspectives of individuals on how technology could help in achieving financial inclusion I rural India. Findings revealed that mobile banking and ATM have huge influence on financial inclusion with ATM and mobile banking enabling banking services to be provided to the populace.

Onaolapo (2015) investigated the effects of financial inclusion on the economic growth of Nigeria. The study covered the period 1982 to 2012. Branch network, loan to rural area, demand deposit, liquidity ratio and capital adequacy ratio were adopted as proxies for financial inclusion and they served as the explanatory variables while gross domestic product was adopted as proxy for economic growth and it served as the dependent variable. The study employed the Ordinary Least Squares (OLS) method as the empirical technique. Findings revealed that branch network, loan to rural area, liquidity ratio and capital adequacy ratio had positive and significant effect on economic growth in Nigeria. The study concluded that financial inclusion reduces poverty thereby increasing economic growth in Nigeria.

Nkwede (2015) examined the relationship between financial inclusion and economic growth in Africa. The study adopted Nigeria as its case study. The study covered the period 1981 to 2013. Loans granted by rural bank branches, number of bank branches and deposits mobilized by rural branches of banks were adopted as proxies for financial inclusion and they served as independent variables while gross domestic product was used as proxy for economic growth and it served as dependent variable. Ordinary Least Squares (OLS) was employed as the analytical tool in the study. Findings revealed that loans of rural bank branches and the number of bank branches have positive significant effect on economic growth in Nigeria. On the other hand, it was revealed that deposits of rural bank branches have negative significant effect on economic growth in Nigeria.

Ene, Abba and Fatokun (2019) investigated the impact of electronic banking on financial inclusion in Nigeria. The study covered the period 2008 to 2017. Financial inclusion was measured by the number of bankable adults with access to formal sector banking system products scaled by number of bankable adults and it served as dependent variable. On the other hand, number of ATMs in the country and number of POS in the country were adopted as proxies for electronic banking and they served as independent variables. Ordinary Least Squares (OLS) regression method was employed to analyze the data used in the study. Findings showed that number of ATM had positive and insignificant impact on financial inclusion in Nigeria. Nevertheless, the study showed that number of POS had positive and significant impact on financial inclusion in Nigeria. The study concluded that electronic banking had significant impact on financial inclusion in Nigeria.

### Methodology

Data for the study were sourced from the Central Bank of Nigeria (CBN) *Statistical Bulletin* (2020). Ordinary Least Squares (OLS) simple regression technique was employed to analyze the data used in the study. The use of Ordinary Least Squares (OLS) simple regression technique enabled the researchers to determine the ‘individual effect’ rather than the ‘joint effect’ of each of the independent variables on the dependent variable.

### Model Specification

The study anchored on the technology acceptance and diffusion innovation theory which brought to the fore the reasons why a society accepts technological innovations. This is central to establishing the relationship between financial technology and financial inclusion which is the focus of this study. The model for the study is specified as:

$$\text{Financial inclusion} = f(\text{financial technology}) \dots\dots\dots (1)$$

Replacing financial inclusion with its proxy which is deposit mobilized by the rural branches of DMBs and disaggregating financial technology into ATM banking technology, POS banking technology, Web banking technology and Mobile banking technology, equation (1) becomes:

$$\text{DRBK} = f(\text{ATMT}) \dots\dots\dots (2)$$

$$\text{DRBK} = f(\text{POST}) \dots\dots\dots (3)$$

$$\text{DRBK} = f(\text{WEBT}) \dots\dots\dots (4)$$

$$\text{DRBK} = f(\text{MOBT}) \dots\dots\dots (5)$$

Transforming equations (2) to (5) into their econometric forms, the regression equations became:

$$\text{DRBK} = \beta_0 + \beta_1\text{ATMT} + \mu \dots\dots\dots (6)$$

$$\text{DRBK} = \alpha_0 + \alpha_1\text{POST} + \mu \dots\dots\dots (7)$$

$$\text{DRBK} = \delta_0 + \delta_1\text{WEBT} + \mu \dots\dots\dots (8)$$

$$DRBK = \hat{W}_0 + \hat{W}_1MOBT + \mu \dots\dots\dots (9)$$

Where;

DRBK = Deposit mobilized by rural branches of deposit money banks

ATMT = Automated teller machine banking technology

POST = Point of Sale banking technology

WEBT = Web banking technology

MOBT = Mobile banking technology

$\mu$  = error term

**Data Analysis**

**Table 1: Diagnostic Test**

Ramsey RESET Test

Equation: UNTITLED

Specification: DRBK C ATMT POST MOBT WEBT

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	1.524459	6	0.1782
F-statistic	2.323977	(1, 6)	0.1782
Likelihood ratio	3.928568	1	0.0475

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.001016	1	0.001016
Restricted SSR	0.003639	7	0.000520
Unrestricted SSR	0.002623	6	0.000437

LR test summary:

	Value	df
Restricted LogL	31.57777	7
Unrestricted LogL	33.54205	6

Unrestricted Test Equation:

Dependent Variable: DRBK

Method: Least Squares

Date: 07/14/22 Time: 03:56

Sample: 2009 2020

Included observations: 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-79.67030	54.39513	-1.464659	0.1934
ATMT	-0.432404	0.302599	-1.428965	0.2029
POST	-0.011691	0.112646	-0.103786	0.9207
MOBT	-2.181591	1.418104	-1.538385	0.1749
WEBT	67.54950	43.88918	1.539092	0.1747
FITTED^2	-6.449496	4.230676	-1.524460	0.1782

  

R-squared	0.925981	Mean dependent var	8.073735
Adjusted R-squared	0.864299	S.D. dependent var	0.056762
S.E. of regression	0.020910	Akaike info criterion	-4.590342
Sum squared resid	0.002623	Schwarz criterion	-4.347889
Log likelihood	33.54205	Hannan-Quinn criter.	-4.680107
F-statistic	15.01214	Durbin-Watson stat	1.959620
Prob(F-statistic)	0.002443		

The table above shows that T-statistic and F-statistics result value of 0.1782 and 0.1782 respectively are above 0.05 indicating that there is a linear relationship between the dependent variable (DRBK) and the independent variables (ATMT, POST, MOBT and WEBT), it also shows that the mathematical specification in this model is well specified.

**Table 2: Automated Teller Machine Banking Technology and Deposit Mobilized by Rural Branches of DMBs in Nigeria**

Variable	Coefficient	Std. Error	T-statistic	Prob.
ATMT	33.86461	6.628334	5.11	0.001
C	-52174.03	25881.21	-2.02	0.079

R-squared = 0.7654 F-statistic = 26.10 Prob.(F-statistic) = 0.0009 DW-statistic = 2.017719

**Source: Author's computation (2023) using STATA 13 software package**

The result showed that there was a positive relationship between ATM banking technology and amount of deposit mobilized by rural branches of deposit money banks in Nigeria. This outcome conforms to economic theory because the higher the usage of ATM, the higher the level of financial inclusion (measured by deposit mobilized by rural branches of DMBs). From the result, 1 unit increase in the use of ATM led to ₦33.86 billion increase in the deposit mobilized by rural branches of deposit money banks (DMBs) in Nigeria. The magnitude of the impact was 5.11 and the probability value of ATMT (0.001) was less than the test significant level (i.e.  $p < 0.05$ ). Thus,



the study concluded that ATM banking technology had significant impact on deposit mobilized by rural branches of deposit money banks in Nigeria. The coefficient of determination (R-squared) of 0.77 showed that 77 percent of variations in deposit mobilized by rural branches of DMBs is attributed to the use of ATM technology. The model was significant, appropriate and reliable because the probability F-statistic (0.0009) was less than the test significant level (0.05). The Durbin-Watson statistic (2.02) lied within the acceptance region being that  $2 \leq DW < 4$  and this indicated that there was no positive autocorrelation.

**Table 3: Point of Sale Banking Technology and Deposit Mobilized by Rural Branches of DMBs in Nigeria**

Variable	Coefficient	Std. Error	T-statistic	Prob.
POST	106.6615	9.948001	10.72	0.000
C	-306.5038	9209.768	-0.03	0.974

R-squared = 0.9349 F-statistic = 114.96 Prob.(F-statistic) = 0.0000 DW-statistic = 2.259065

**Source: Author's computation (2023) using STATA 13 software package**

The result showed that there was a positive relationship between POS banking technology and amount of deposit mobilized by rural branches of deposit money banks in Nigeria. This outcome conforms to economic theory because the higher the usage of POS, the higher the level of financial inclusion (measured by deposit mobilized by rural branches of DMBs). From the result, 1 unit increase in the use of POS led to ₦106.66 billion increase in the deposit mobilized by rural branches of deposit money banks (DMBs) in Nigeria. The magnitude of the impact was 10.72 and the probability value of POST (0.001) was less than the test significant level (i.e.  $p < 0.05$ ). Thus, the study concluded that POS banking technology had significant impact on deposit mobilized by rural branches of deposit money banks in Nigeria. The coefficient of determination (R-squared) of 0.93 showed that 93 percent of variations in deposit mobilized by rural branches of DMBs is attributed to the use of POS technology. The model was significant, appropriate and reliable because the probability F-statistic (0.0000) was less than the test significant level (0.05). The Durbin-Watson statistic (2.26) lied within the acceptance region being that  $2 \leq DW < 4$  and this indicated that there was no positive autocorrelation.

**Table 4: Web Banking Technology and Deposit Mobilized by Rural Branches of DMBs in Nigeria**

Variable	Coefficient	Std. Error	T-statistic	Prob.
WEBT	697.5973	107.1752	6.51	0.000
C	-19997.59	16729.78	-1.20	0.266

R-squared = 0.8412 F-statistic = 42.37 Prob.(F-statistic) = 0.0002 DW-statistic = 2.041849

**Source: Author's computation (2023) using STATA 13 software package**

The result showed that there was a positive relationship between web banking technology and amount of deposit mobilized by rural branches of deposit money banks in Nigeria. This outcome conforms to economic theory because the higher the usage of web banking, the higher the level of financial inclusion (measured by deposit mobilized by rural branches of DMBs). From the result, 1 unit increase in the use of web banking led to ₦697.60 billion increase in the deposit mobilized

by rural branches of deposit money banks (DMBs) in Nigeria. The magnitude of the impact was 6.51 and the probability value of WEBT (0.000) was less than the test significant level (i.e.  $p < 0.05$ ). Thus, the study concluded that web banking technology had significant impact on deposit mobilized by rural branches of deposit money banks in Nigeria. The coefficient of determination (R-squared) of 0.84 showed that 84 percent of variations in deposit mobilized by rural branches of DMBs is attributed to the use of web banking technology. The model was significant, appropriate and reliable because the probability F-statistic (0.0002) was less than the test significant level (0.05). The Durbin-Watson statistic (2.04) lied within the acceptance region being that  $2 \leq DW < 4$  and this indicated that there was no positive autocorrelation.

**Table 5: Mobile Banking Technology and Deposit Mobilized by Rural Branches of DMBs in Nigeria**

Variable	Coefficient	Std. Error	T-statistic	Prob.
MOBT	137.4005	12.95551	10.61	0.000
C	-5127.184	9587.311	-0.53	0.607

R-squared = 0.9336 F-statistic = 112.48 Prob.(F-statistic) = 0.0000 DW-statistic = 2.803051

**Source: Author's computation (2023) using STATA 13 software package**

The result showed that there was a positive relationship between mobile banking technology and amount of deposit mobilized by rural branches of deposit money banks in Nigeria. This outcome conforms to economic theory because the higher the usage of mobile banking, the higher the level of financial inclusion (measured by deposit mobilized by rural branches of DMBs). From the result, 1 unit increase in the use of mobile banking led to ₦137.40 billion increase in the deposit mobilized by rural branches of deposit money banks (DMBs) in Nigeria. The magnitude of the impact was 10.61 and the probability value of MOBT (0.000) was less than the test significant level (i.e.  $p < 0.05$ ). Thus, the study concluded that mobile banking technology had significant impact on deposit mobilized by rural branches of deposit money banks in Nigeria. The coefficient of determination (R-squared) of 0.93 showed that 93 percent of variations in deposit mobilized by rural branches of DMBs is attributed to the use of mobile banking technology. The model was significant, appropriate and reliable because the probability F-statistic (0.0000) was less than the test significant level (0.05). The Durbin-Watson statistic (2.80) lied within the acceptance region being that  $2 \leq DW < 4$  and this indicated that there was no positive autocorrelation.

### Discussion of Findings

The study showed that all the measures of financial technology adopted in the study had positive and significant individual effects on financial inclusion (proxied by deposit mobilized by rural branches of deposit money banks) in Nigeria. However, the magnitude of the effects varied as it is evident that the effects of Point of Sale banking technology (POST) and mobile banking technology (MOBT) were more significant than those of Automated Teller Machine banking technology (ATMT) and web banking technology (WEBT). This finding corroborates Ene, Abba and Fatokun (2019) which found that Point of Sale devices had more significant impact on financial inclusion than Automated Teller Machine devices in Nigeria. The more significant impact of Point of Sale (POS) banking technology and mobile phone banking technology on financial inclusion in Nigeria might be attributed to the ease which the POS has brought into the

payment system in Nigeria and the high penetration of mobile phones in Nigeria, respectively. On the other hand, the less significant impact of ATM banking technology and web banking technology could be associated with the incessant seizure of ATM cards by the ATM machines and other frustrations associated with ATM banking. Furthermore, the fear of being defrauded by internet fraudsters had created fears in the mindset of the population as it pertains to the use of web banking. This might have affected the level of influence of web banking technology on financial inclusion in Nigeria.

### **Conclusion**

This study evaluated the relationship between financial technological advancement and financial inclusion in Nigeria. To do this, the researchers adopted automated teller machine banking technology, Point of Sale banking technology, web banking technology and mobile banking technology as proxies for financial technology while deposit mobilized by rural branches of deposit money banks was adopted as proxy for financial inclusion. Rather than investigating the ‘joint effect’ of ATM banking technology, POS banking technology, web banking technology and mobile banking technology on financial inclusion, the study investigated the ‘individual effects’ of the aforementioned variables on financial inclusion. This was aimed at determining the level of influence of each of these variables on financial inclusion in Nigeria. Simple regression technique was employed to analyze the data collected in the study. Findings revealed that ATM banking technique, POS banking technique, web banking technology and mobile banking technology had significant impact on financial inclusion in Nigeria. However, the impacts of POS banking technology and mobile banking technology were more significant than those of ATM banking technology and web banking technology in Nigeria. The study concluded that financial technology had positive and significant relationship with financial inclusion in Nigeria.

### **Recommendations**

The following recommendations were made:

- (i) Deposit money banks should fashion out ways of making POS and mobile banking platforms more accessible to all categories of businesses and individuals so as to enhance financial inclusion in Nigeria.
- (ii) Deposit money banks in Nigeria should provide ATM points in the rural areas and where some already exist, they should increase the number of ATM points. In this way, ATM banking technology will more significantly enhance financial inclusion in Nigeria.
- (iii) Central Bank of Nigeria should come up with stricter and enforceable policies that would curb internet fraud in Nigeria. This will minimize the level of fears entertained by Nigerians on the use of internet banking technology. When this is done, internet (web) banking technology will more significantly enhance financial inclusion in Nigeria.

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