

THE ROLE OF TECHNOLOGY IN ADVANCING FINANCIAL INCLUSION IN NIGERIA: A STUDY OF KEY DIGITAL CHANNELS

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ABSTRACT

This study examines the role of digital financial channels in advancing financial inclusion in Nigeria, focusing on Automated Teller Machines (ATMs), Point-of-Sale (POS) systems, web banking, and mobile money. Annual data from 2012 to 2022 were sourced from the Central Bank of Nigeria and the Federal Reserve Economic Data. The Augmented Dickey-Fuller test confirmed stationarity of the variables, while the Granger causality test was used to assess predictive relationships between all the variables. The results show two significant unidirectional causalities at the 5% statistical significant level from mobile account ownership to mobile money transactions, and from POS transactions to web banking. These findings suggest that expanding mobile account ownership drives greater use of mobile money, while increased POS usage supports wider adoption of web-based banking. In contrast, the causal links from ATMs to POS transactions and from mobile money to POS transactions were not significant at the 5% statistical significant level, indicating weaker predictive effects. Based on these findings, the study recommends policies that encourage mobile account ownership and strengthen POS infrastructure to build on the significant channels of influence, while addressing barriers that may limit the potential of ATMs and mobile money in supporting inclusion.

Keywords: *Financial inclusion, Agent banking, Technology adoption, Nigeria, Mobile money*

1. INTRODUCTION

Financial inclusion has gradually become very important to the global development agenda of nations as it ensures balanced economic growth and poverty reduction. An economy is strong and all-inclusive when enterprises and individuals can access financial service infrastructures that allow them to save to borrow, invest, and to insure against risk (Demirgüç-Kunt et al., 2018). Huge role in encouraging financial inclusion, especially through the ownership of mobile accounts and this has become a topic of discussion in Nigeria's economic environment. It was discovered in 2020 that about 36% of the adult population in Nigeria were still financially excluded, but the introduction of mobile money has changed this, allowing millions to access financial services and resources that would otherwise be inaccessible due to problems like high banking fees and banking infrastructure geographical differences (Sodipo Akin et al., 2021; Ezeh, 2018 and Adou et al. 2021).

Technology has significantly changed the trajectory of financial inclusion by providing digital solutions that go beyond the limits of traditional banking systems. Innovations like ATMs, Mobile money platforms, POS systems and Web banking now offer financial services to previously underserved people. Web banking has helped increase access to financial services in places where physical banking infrastructures are lacking. Mobile money operations have enabled those without bank accounts to receive and send money, and this has helped bridge the financial access gap to an extent. These innovations have together

improved financial inclusion in Nigeria, especially in underserved areas (Agboola, 2019; Quadri et al, 2024). Mobile money is also an important promoter of financial inclusion in Nigeria as it allows people to bypass the already established banking institutions, which creates a “leapfrog” effect in the country’s financial ecosystem (Adou et al., 2021; GSMA, 2024).

Despite these achievements, technology’s effect on financial inclusion in Nigeria remains unsatisfactory across Nigeria. Factors like user uptake, digital literacy, affordability and infrastructure availability affect the effectiveness of these solutions. For instance, ATMs are more common in urban areas than rural areas because of logistics and population density challenges (Iwedi, 2023). Likewise, mobile money platforms are often constrained by limited internet coverage and low digital literacy levels in certain areas, even though they are user-friendly (Inegbedion et al., 2022). These problems draw attention to the need for specific strategies that address both the cultural and technological barriers in Nigeria and make the most of the effect of mobile money on financial inclusion. Stakeholders can improve people’s access to financial services, fuel economic growth and reduce gaps in financial access (Digicore, 2024; World Bank Group, 2024). This research studies the individual effects of web banking, POS systems, and mobile money on financial inclusion in Nigeria by making use of a predictive time series framework, which poses a more rounded understanding of technology’s role in advancing financial inclusion. By ascertaining the digital channels with significant relationships to financial inclusion, this study provides actionable insights for policymakers who are planning to close the financial inclusion gap in underserved areas in Nigeria. The findings also promote global development goals by showing how digital financial innovations can drive inclusive growth and reduce inequality in Nigeria.

1. Literature Review

1.1 The Role of Technology in Nigeria

Financial technology helps more Nigerians get access to basic financial services. Services like account opening, depositing money and cash withdrawals are easier because of an increase in the use of mobile banking platforms and electronic payment options. This has drastically reduced the number of people in the banking halls (Ugwuanyi & Okore, 2022; Adewale, 2024). Mobile payments are becoming very important, especially in villages where there are few or no banks nearby. Studies also show that web banking helps more people access financial services (Owedi et al., 2023; Adewale, 2024). However, problems like system interoperability, concerns about keeping personal information safe, and focusing more on cities than villages slow down their growth (Ogunode & Akintoye, 2023). To fix these problems, regulations need to be stronger to ensure women are included, digital infrastructure needs to be improved on and service delivery needs to be guaranteed to all people (Ezeocha, 2024; Ogunode & Akintoye, 2023).

Mobile money services like Paga and Opay have helped bring banking services to people who do not have bank accounts, especially in villages. However, it faces obstacles like low smartphone adoption and regulatory bottlenecks. Mobile money uses mobile phones to deliver financial services, transform financial services and allow people to transfer funds, make payments, and save money without a traditional bank account (Akighir et al., 2022). ATMs offer basic financial services, including cash withdrawals, deposits, and balance enquiries, without the need to visit a bank branch. The extensive usage of ATMs in Nigeria has made banking services available to those living in rural and peri-urban regions, as they do not need to stand in long lines to exchange currency. However, their impact on financial inclusion is typically limited by hefty service fees and network outages (Eyinade, 2022).

Web banking also allows customers to conduct financial transactions online. This technology reduces the need for physical visits to bank branches, which provides convenience and efficiency. The adoption of web banking with Internet access has been on the rise among urban populations in Nigeria. Despite this, limited infrastructure and low digital literacy, especially in rural areas, hamper its broader impact on financial inclusion (Babajide et al., 2021). Nigeria’s cashless policy is based on point-of-sale (POS)

systems, which have grown in popularity and made both urban and rural financial transactions easier. In rural locations where there are no ATMs, these systems take debit payments and offer cash-back services. The ability of POS systems to facilitate financial transactions at retail stores and agent banking locations has led to an increase in its usage resulting in financial services being brought closer to disadvantaged populations (EFInA, 2021).

Nigeria's financial scene has been changed by technology, which has created new ways to help more people access financial services. By using both these technologies and local agents, Nigeria can help financially excluded people get access to banking services and reach full financial inclusion.

2.1 Theoretical Review

The research used 2 theories: the Diffusion of Innovation (DOI) theory as its main framework and Technology Acceptance Model (TAM). The diffusion of innovation in (DOI) theory was created by Everett Rogers in 1962, and it is a framework to study how new ideas, technology or products slowly spread through groups or society. The theory focuses on factors that affect whether people will use something new, taking into consideration how useful it seems, how well it fits with their current way of doing things, whether people can try it out, how easy it is to use, and whether people can visibly see the results. It shows how people and communities adopt new technology. For instance, the first set of people to use these technologies in communities usually encourages other people around them to use the same technology, which helps more people to accept it. It shows how important factors like agents, banks and government officials are in speeding up the use of new financial innovations. These parties are essential for removing problems that stop people from using these innovations and making them more useful and helpful.

In 1989, Fred Davis created the technology acceptance model. He believed that how people use systems depends on whether they accept it, which is directly affected by external factors like pictures and abilities of the actual system (Chuttur, 2009). This model provides a strong framework for studying how people learn and use new technology, and it is built on 2 main ideas, which are how useful people think it is and how easy people think it is to use. The first idea means whether a person believes a specific new technology will make their work easier and better. The second idea means how simple it is to understand and operate new technology. This model simply explains how technology helps more people access financial services by changing how users behave.

2.2 Empirical Review

Abimbola, Babalola, Farouk, and Olokoyo (2018) studied the potential of financial inclusion in Nigeria and how the actions of financial institutions, the government, and mobile initiatives help to reduce poverty in Nigeria. Using the EViews statistical software, they analyzed annual data from the World Bank, NDIC, Central Bank of Nigeria, and the National Bureau of Statistics to construct a dataset between 1992 and 2016. This longitudinal, observational study used ordinary least squares regression to investigate the relationships between financial inclusion and poverty reduction. It demonstrated that agricultural loans, outreach, and savings mobilization activities are significantly linked to higher per capita income. Although the 25-year period is good enough, a more significant data set would make the analysis more robust. Furthermore, analyzing multiple poverty measures might enhance the study's results.

Babajide, Okunlola, Lawal, Akinjare, and Lawal-Adedoyin (2021) consider the effects of financial inclusion on Nigeria's per capita income and, specifically, how deposit money banks (DMBs) in rural and urban centres contribute. Based on time series data from 1982 to 2018 and multiple econometric techniques, they conclude that rural banking, especially deposits and credit, is a major contributor to per capita income, emphasizing the role of financial inclusion for economic development in rural areas. In

contrast, urban banking services do not significantly affect income growth, implying saturation. Although the results highlight the importance of rural financial growth, a deep investigation of the relatively weak impact of urban financial inclusion and the contribution of digital financial instruments such as mobile banking or microfinance in rural settings could have been made.

Babajide, Adegboye, and Omankhanlen (2015) discuss the relationship between Nigeria's economic growth and financial inclusion (FI). The authors apply ordinary least squares (OLS) regression and secondary data from World Development Indicators to study FI's outcomes on production parameters such as capital per worker. Their goal is to pinpoint the drivers of FI and assess its effects on economic growth. They state that FI enhances economic growth by enabling the financial inclusion of disadvantaged social strata, as witnessed by its significant roles in productivity and capital formation. Nevertheless, such work could have, for example, attempted to consider more recent developments in FI concerning the new digital financial instruments that have emerged.

Ugwuanyi and Okore (2022) aimed to understand financial technology's role in shaping Nigeria's financial inclusion in a study called "Financial Technology and Financial Inclusion in Nigeria. Three hundred rural individuals close to Enugu provided primary data for the study, which employed a survey design. As the study has shown, financial technology has facilitated the availability of many financial services, brought those closer to the consumer's door, and reduced visits to bank branch offices. Based on the report, it is proposed that sound policy should receive more attention. The development and benefits of financial technology should be sustainable, and the benefits should also be sustainable. Nevertheless, the results may not generalize to as vast an extent as possible due to the limited sample size of 300 respondents surveyed and the limitation in the study scope to rural settings.

Although this study concentrated on the individual effects of mobile money, POS systems, ATMs, and web banking on financial inclusion in Nigeria, it recognizes that these channels often interact and reinforce one another in practice. Future research should therefore move beyond examining single channels in isolation and explore their joint effects, as this would provide a more comprehensive understanding of how digital financial technologies collectively influence financial inclusion outcomes.

1. **Methods**

This study uses a quantitative, cause-and-effect research design to examine the effect of digital financial channels on financial inclusion in Nigeria. The study used time series data from 2012 to 2022 sourced from the Central Bank of Nigeria and the Federal Reserve Economic Data. The sample period was chosen because it captures Nigeria's digital financial transformation period, and it was also selected due to data availability from reliable sources. Although the model is expressed in a regression format, the study does not rely on ordinary least squares (OLS) estimation. Instead, a time-series estimation approach was employed. First, the Augmented Dickey-Fuller (ADF) test was applied to check for stationarity and eliminate the possibility of spurious results. Once the stationarity properties were established, the Granger causality test was used to investigate predictive relationships between the digital financial channels and financial inclusion, as well as to determine the direction of causality, whether unidirectional or bidirectional. To ensure robustness, post-estimation diagnostic tests were also conducted, including the Jarque-Bera normality test, the Breusch-Godfrey serial correlation test, and the Breusch-Pagan heteroskedasticity test. This study used Mobile Money Account ownership (MAO) as the dependent variable, while ATM, POS, WEB, and MMO transactions are the independent variables.

The rationale for choosing Mobile Money Account Ownership (MAO) as the dependent variable is that it represents financial outcome in Nigeria, while the independent variables capture the major digital financial channels in Nigeria. This study adapted the empirical model of Emuveyan et al (2021). The model captures the direct influence of each digital financial channel on economic output, allowing for individual and joint

impact assessment. The model was slightly modified in this study to capture the direct influence of each digital financial channel on financial inclusion in Nigeria. Thus, the functional relationship and the resultant econometric model are specified below:

The linear regression model is:

$$MAO = f(ATM, POS, WEB, MMO) \text{ ----- (1)}$$

While the estimation technique is:

$$MAO = \beta_0 + \beta_1 ATM + \beta_2 POS + \beta_3 WEB + \beta_4 MMO + \mu \text{ ----- (2)}$$

Whereas:

MAO is Mobile money account ownership (% age 15+)

ATM is the value of Automated teller machine transactions

POS is the value of a Point-of-sale transaction

WEB is the value of Web/Internet banking transactions

MMO is the value of Mobile money transactions

β_0 = Constant

$\beta_1 - \beta_4$ = coefficients to estimate the independent variables

μ = Error term at period

Furthermore, to make the Mathematical expression estimable and for better capture of the effects of the independent variables on the dependent variable, since the independent variables are in naira form and the dependent variable is in number form, the study put the independent and dependent variables in their logarithm forms. The new model is now:

$$LMAO = \beta_0 + \beta_1 LATM + \beta_2 LPOS + \beta_3 LWEB + \beta_4 LMMO + U_t \text{ ----- (3)}$$

Where:

L=Logarithm

Other variables are as earlier defined.

A priori expectations of the model

MMO (Mobile money transactions): Positive (+). Mobile money is expected to have the strongest positive impact on mobile account ownership, as it reduces access costs and reaches previously unbanked populations.

POS (Point-of-Sale transactions): Positive (+), but weaker than MMO. POS activity expands retail access and agent networks, encouraging account use; however, its effect may be smaller than that of mobile money.

WEB (Web/internet banking): Small positive (+). Web banking is likely to benefit mainly already banked and internet-connected users, so its effect on new account uptake is expected to be limited.

ATM (ATM transactions): Weak or ambiguous (+/0). ATM effects are expected to be small or indeterminate because ATMs tend to serve existing account holders and are concentrated in urban areas.

1. Discussion of results

1.1 Unit Root Test

Table 4.1a. Unit Root Test (At Levels)

VARIABLES	ADF TEST STATISTICS	ADF CRITICAL VALUE			ORDER OF INTEGRATION	REMARKS
		1% Level	5% Level	10% Level		
LNMAO	-1.5767	-3.6104	-2.939	-2.6079	I(0)	NOT STATIONARY
LNMMO	0.1870	-3.6104	-2.939	-2.6079	I(0)	NOT STATIONARY
LNPOS	1.0659	-3.6104	-2.939	-2.6079	I(0)	NOT STATIONARY
LNWEB	0.802	-3.6104	-2.939	-2.6079	I(0)	NOT STATIONARY
LNATM	0.8167	-3.6104	-2.939	-2.6079	I(0)	NOT STATIONARY

Source: Researcher's computations using E-views 12 (2024)

Table 4.1b. Unit Root Test (at first difference)

VARIABLES	ADF TEST STATISTICS	ADF CRITICAL VALUE			ORDER OF INTEGRATION	REMARKS
		1% Level	5% Level	10% Level		
D(LNATM)	-1.7556	-4.4206	-3.298	-2.7711	I(1)	NOT TATIONARY
D(LNMAO)	-3.999	-4.4206	-3.2598	-2.7711	I(1)	STATIONARY
D(LNMMO)	-3.4137	-4.5826	-3.321	-2.9014	I(1)	STATIONARY
D(LNPOS)	-4.5541	-4.5826	-3.321	-2.9014	I(1)	STATIONARY
D(LNWEB)	-3.5769	-4.8035	-3.4033	-2.8418	I(1)	STATIONARY

Source: Researcher's computations using E-views 12 (2024)

The results of the unit root test using the Augmented Dickey-Fuller (ADF) are shown in Tables 4.2a and 4.2b. It shows that in the process of comparing the test statistic value to the Mackinnon critical value at 1%, 5%, and 10% levels of significance. At levels, it was observed that none of the variables were stationary, while all the variables were found to be stationary at their first difference, except for LNATM. Hence, most of the data series were integrated of order 1, thus, all the data series were changed to achieve the first difference status. Next, a Granger causality test is carried out to reveal the causal and effect relationship between the dependent variable and the independent variables. Also, the test reveals the direction of causality, whether it is bi-directional or uni-directional.

1.1 Granger Causality Test

Fig 4.1 Result of Granger Causality Test

Pairwise Granger Causality Tests
Date: 08/27/24 Time: 11:09
Sample: 2012 2022
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
DLATM does not Granger Cause DLMAO	9	2.52693	0.1630
DLMAO does not Granger Cause DLATM		0.04996	0.8306
DLMMO does not Granger Cause DLMAO	9	0.28492	0.6127
DLMAO does not Granger Cause DLMMO		10.1364	0.0190
DLPOS does not Granger Cause DLMAO	9	2.43390	0.1698
DLMAO does not Granger Cause DLPOS		3.21335	0.1232
DLWEB does not Granger Cause DLMAO	9	0.34011	0.5810
DLMAO does not Granger Cause DLWEB		3.19303	0.1242
DLMMO does not Granger Cause DLATM	9	0.00203	0.9655
DLATM does not Granger Cause DLMMO		0.34521	0.5783
DLPOS does not Granger Cause DLATM	9	0.13911	0.7220
DLATM does not Granger Cause DLPOS		4.27713	0.0841
DLWEB does not Granger Cause DLATM	9	3.42446	0.1137
DLATM does not Granger Cause DLWEB		0.40504	0.5480
DLPOS does not Granger Cause DLMMO	9	4.58215	0.0761
DLMMO does not Granger Cause DLPOS		0.00802	0.9316
DLWEB does not Granger Cause DLMMO	9	0.40377	0.5486
DLMMO does not Granger Cause DLWEB		0.39786	0.5515
DLWEB does not Granger Cause DLPOS	9	0.00147	0.9706

Source: *Researcher's computations using E-views 12 (2024)*

The Granger Causality determine which of the variables causes the other and the magnitude of such causation. Specifically, the analysis focuses on the natural log of account ownership (DLMAO) as the dependent variable, with independent variables being the natural logs of transaction values through various channels: Mobile Money Operations (DLMMO), Automated Teller Machines (DLATM), Point of Sale systems (DLPOS), and Web/Internet banking (DLWEB).

The results of the test provide insights into whether past values of these transaction channels can predict account ownership, or vice versa.

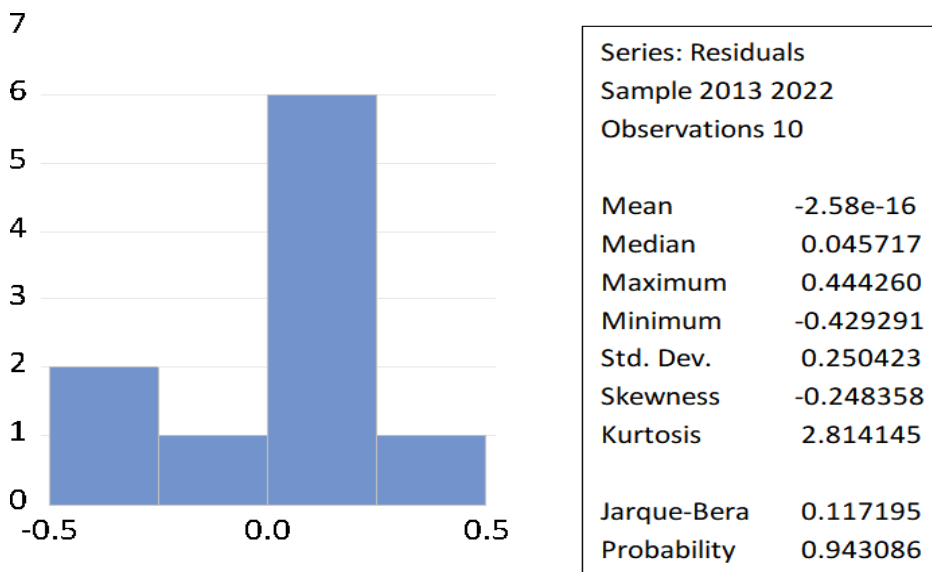
Regarding the relationship between DLATM and DLMAO, the test results in Fig 4.2 above show that the F-statistics for both null hypotheses, DLATM does not Granger Cause DLMAO, and "DLMAO does not Granger Cause DLATM are 2.52693 and 0.04996, with p-values of 0.1630 and 0.8306, respectively. Since these p-values exceed the conventional significance level of 5%, neither hypothesis can be rejected. This implies that changes in the value of ATM transactions do not significantly predict mobile account ownership, nor does mobile account ownership predict changes in ATM transaction values. A similar pattern is observed in the cases of DLPOS and DLWEB, where the p-values also exceed 0.05, indicating no significant Granger causality between these variables and mobile account ownership.

However, the relationship between DLMMO and DLMAO has a different outcome. The test shows that the null hypothesis "DLMMO does not Granger Cause DLMAO" has an F-statistic of 0.28492 and a p-value of 0.6127, meaning it cannot be rejected. On the other hand, the null hypothesis "DLMAO does not Granger Cause DLMMO" has an F-statistic of 10.1364 and a p-value of 0.0190, leading to its rejection at the 5% significance level. This suggests a unidirectional Granger causality where mobile account ownership can predict future changes in the value of mobile money transactions, but not the reverse. Thus, while mobile account ownership does not seem to influence ATM, POS, or web/internet banking transactions, it plays a significant role in predicting mobile money operations.

4.0 Post-Estimation Tests

To confirm the reliability of the model, some post-estimation tests were carried out. The Jarque-Bera test checked for normality of errors, the Breusch-Godfrey test examined serial correlation, and the Breusch-Pagan test tested for heteroskedasticity. These tests ensure the model is well-specified and the results are dependable.

Figure 4.2: Normality Test



Source: Researcher's computations using E-views 12 (2024)

From the normality test, the probability of the Jarque-Bera is 0.943086 higher than 5%, thus, the residual series are usually distributed. Therefore, one of the key assumptions of the Ordinary Least Squares were not violated. The model of this study is therefore statistically valid.

Fig 4.3: Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.851447	Prob. F(2,3)	0.5095
Obs*R-squared	3.620949	Prob. Chi-Square(2)	0.1636

Source: Researcher's computations using E-views 12 (2024)

From the table above, the probability value of the Breusch-Godfrey Serial correlation LM test was greater than 5%. Hence, there is no serial correlation in the model. Furthermore, one of the key assumptions of the OLS which is the absence of serial correlation was not violated.

Table 4.4.: Test for Heteroskedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey

Null hypothesis: Homoskedasticity

F-statistic	1.083825	Prob. F(4,5)	0.4537
Obs*R-squared	4.643986	Prob. Chi-Square(4)	0.3258
Scaled explained SS	1.053108	Prob. Chi-Square(4)	0.9016

Source: Researcher's computations using E-views 12 (2024)

From the table above, the probability value of the Breusch-Pagan heteroskedasticity test was higher than 5%. Hence, the error variances were constant in repeated sampling. Furthermore, one of the key assumptions of the OLS, namely the absence of homoskedasticity, was not violated.

Discussion

The adoption of digital banking channels in Nigeria presents a multifaceted impact on financial inclusion, with varying degrees of effectiveness across different platforms. Web banking, while offering convenience and enhanced service quality to existing customers, demonstrates limited influence on expanding financial inclusion in Nigeria. Studies show that online banking mainly helps those who already own a bank account, especially people who live in cities and know how to use technology and have good Internet access (Ene et al, 2019). The need for an Internet connection to use online banking limits its use in villages where many people without bank accounts live. Also, cybersecurity concerns stop people from using digital financial services (Agboola, 2019). To increase the effect of web banking on financial inclusion, it is important to deal with problems related to Internet infrastructure and safety concerns, making digital financial services more accessible and more trustworthy for underserved communities.

ATMs mostly provide basic financial services in cities, so they do not help much with increasing financial inclusion. Studies showed that ATM's mainly help people who already have bank accounts rather than most without bank accounts (Quadri et al, 2024). There are few ATM's in local communities and villages because they cost a lot to build and maintain, so they are less effective at increasing financial inclusion. Addressing these problems is important to extending ATM services beyond cities and making them more helpful with financial inclusion strategies. Even though POS systems have spread and made financial transactions faster, their effect on Nigeria's financial inclusion seems limited. Problems like high transaction fees and unreliable network make it hard for people to trust and willingly use the system, which will in turn convince them to own a bank account. Therefore, addressing these problems is important to use POS systems to promote financial inclusion in Nigeria.

Unlike the other digital channels, mobile money is a significant driver of financial inclusion in Nigeria. Mobile money services work through basic cell phones, allowing people without bank accounts to conduct financial transactions, closing the gap between the banked and unbanked populations. This supports global evidence that shows that mobile money increases financial inclusion (Suri et al, 2016).

However, not having enough agents and regulatory limitations slow down the spread of mobile money services. Solving these problems by increasing the number of agents and encouraging interoperability among different mobile money operators is crucial to maximising the potential of mobile money in increasing financial inclusion in Nigeria. The effectiveness of various digital banking channels in increasing financial inclusion in Nigeria varies.

While web banking, ATMs and POS systems are convenient, their impact is not felt by many people without bank accounts. On the other hand, mobile money services showed great potential in closing the financial gaps if the existing barriers are dealt with. A joint effort to improve Internet infrastructure, eliminate cybersecurity concerns, and create enabling government regulation is important to harnessing the full potential of digital banking to enhance Nigeria's financial inclusion.

1. Conclusion

This study examined how key digital innovations affect financial inclusion in Nigeria. The analysis revealed that mobile money is the only digital channel with a significant causal relationship to mobile account ownership, making it a crucial tool for reaching the unbanked population. In contrast, web banking and ATMs primarily serve people who already use banks and therefore contribute little to extending services to those outside the formal system. POS systems show some potential in rural areas because of their relatively low cost, but challenges such as high transaction fees, unreliable networks, and weak infrastructure limit their overall impact.

Overall, the findings indicate that technology has played a significant but uneven role in advancing

financial inclusion in Nigeria. The Granger causality results confirm that mobile money is the most important driver of inclusion, while ATMs, POS, and web banking remain less effective in reaching new users. This suggests that Nigeria's progress in financial inclusion through technology has been driven mainly by mobile money. It suggests strengthening mobile money operations, addressing agent and regulatory constraints, and improving infrastructure will be essential to maximize this impact and to enable other digital channels to contribute more effectively to inclusive finance in Nigeria.

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