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Banking the Unbanked in Nigeria: The Role of Financial Technology

IWEDI, Marshal[1] KOCHA, Chukwuenenye[2] EDEH, Mark Bekweri[3] and TURAKPE, Morrison J[4]

[1&2]Department of Banking and Finance, Rivers State University, Port Harcourt, Nigeria.
E-mail: marshal.iwedi@ust.edu.ng
[3]Department of Accountancy, Rivers State University, Port Harcourt, Nigeria. E-mail: Bmarkedeh@yahoo.com
[4]Department of Banking and Finance, Ken Saro-Wiwa Polytechnic, Bori. E-mail: morrison3just@yahoo.com

Abstract: This paper examines the effects of financial technology on banking the unbanked in Nigeria. To measure the financial technology, the study used point of sale machine, automated teller machine, mobile banking device and web banking device, while total deposit to gross domestic product was used as a proxy for banking the unbanked. The study employed time series financial methodology to collect quarterly data for the period 2009 –2020 from Central Bank of Nigeria statistical bulletin 2021. Granger Causality Test was used to analyze the data. The results showed that banking the unbanked causes the number of ATMs to increase because an increase in the number of ATMs will make financial services more accessible to a broader range of people. This shows that more ATMs are positively correlated with higher financial inclusion. Only one-way causality exists between mobile banking transactions and banking the unbanked. Mobile banking transaction causes banking the unbanked because an increase in the use of mobile money technologies allows people to conduct financial transactions more efficiently, as they do not have to travel long distances to banks and exchange offices to carry out transactions. This indicates that the relationship between mobile banking technology and financial inclusion is positive. This indicates that the more people use mobile technology to conduct financial transactions, the higher the level of banking the unbanked. Based on these findings, the study concludes that financial technology is critical factors that influence the level of banking the unbanked in Nigeria. The study recommends that the Central Bank of Nigeria should make uniform the cost of accessing digital financial service and effort should be made to increase internet access, especially in rural areas where the infrastructure is not well developed.

Keywords: Banking the Unbanked, Financial Technology, Point of sales machine, Automated teller machine, mobile banking technology, web banking technology.

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1. Introduction

Financial exclusion remains a highly critical problem that hinders developing economies from eradicating poverty. Additionally, financial exclusion is interwoven with social dependency making financial excluded/underserved adults population strongly dependable in their social network (MasterCard insights, 2014). Iwedi, Igbanibo and Uzo-ahunanya (2018) assert that lot of efforts have been deployed over the years to expand access to financial products and services to unbanked and underserved Nigerians. In 2012 the national financial literacy framework was initiated to provide a guide for dissemination of financial education in 2013, tiered know-your- customer, requirements were released to allow for simplified account opening documentation for customers within certain households, micro insurance guidelines and guidelines for banking regulation and agent banking were released (Central Bank of Nigeria, 2020). The year 2014 saw the establishment of financial inclusion secretariat where stakeholders will meet to coordinate the implementation of the framework. Through the years, numerous other policies and initiatives have come from concerted efforts of financial inclusion stakeholders and have to the improvement in financial inclusion numbers recorded (Iwedi, 2020 and Iwedi, Okey-Nwala and Wachuku, 2023).

Thus, the importance of banking the unbanked or underbanked arises from the problem of financial exclusion of people and firms from the formal financial services across the world. According to World Bank report titled "The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19" revealed that about 64 million Nigerians of its nearly 200 million people still do not have a bank account with a financial institution or mobile money platform. According to the report, Nigeria is among the seven countries in the world with half of the worlds unbanked or financially excluded. Other countries include Bangladesh, China, India, Indonesia, Mexico, and Pakistan. However, despite the progress made in the journey of financial inclusion. It is worrisome that 35.9% Nigerians are still unbanked from gaining access to banking services and product in 2022 for several reasons bordering on limited access to brick and mortar banks due to distance from dwelling places, poverty, cost of banking services, irregular income and unemployment and finally institutional exclusion (EFInA, 2020). Of the 106 million adult Nigerians in 2020, 44.8% were banked, while 5.7% and 13.6% were served by other formal channels and informal financial service providers such as ajo, esusu. This is the current reality of Nigeria's financial inclusion campaign, 10 years after the big push for financial inclusion began in 2012.

In recent times, Nigeria has witnessed the emergence of FinTech. Currently there are about 200 financial technology companies delivering banking and financial services for customers with the aid of internet-mediated technologies such as Mobile phones, point of sale machines, tablets among others (CBN, 2022). These financial technology firms are creating a never before experienced pressure to traditional banks by uncovering new value propositions through innovation and non-traditional technology led business models. Therefore, it is in the light of the above this study is carried out to examine the role of financial technology on banking the unbanked in Nigeria.

2. Literature Review

2.1. Financial Literacy Theory

This study is underpinned by the financial literacy theory. This theory states that financial literacy will increase people's willingness to join the formal financial sector. It argues that financial inclusion and accessibility can be achieved through education that increases the financial literacy of citizens. When people become financially literate they will seek formal financial services wherever they can find it. The financial literacy theory of financial inclusion has some merits; firstly, financial literacy can make people aware of formal financial services that are available to them. When they become aware of existing formal financial services that can improve their welfare they will join the formal financial sector owning a formal account. Secondly, through increased financial literacy people can take advantage of other benefits in the formal financial sector such as investment & mortgage products. Thirdly, financial literacy can also help become self sufficient & help them have some stability in their personal finance. Finance literacy can help people to distinguish between needs & wants, helping them create and manage a budget, teaching them to save so that they can pay dues when due & also plan for retirement. One of the demerits of financial literacy theory of financial inclusion is that it addresses the 'willingness' not 'capacity' to join the formal financial sector.

2.2. Empirical Review

Empirically, literature is rich in explaining the link between banking the unbanked. Evidently, Iwedi, Owakah and Wofuru-nyenke (2023) examined the effect of financial technology on financial inclusion in Nigeria using quarterly secondary data and these data were extracted from Central Bank of Nigeria Statistical Bulletin (2021) from 2009-2019. The study proxy financial technology using point of sale, automated teller machine, web banking technology and mobile banking technology, while financial inclusion in Nigeria was proxy using deposit ratio. Time series data were analyzed using the vector auto regression (VAR) estimation technique. The results show that web banking technology has a positive and significant effect on financial inclusion in Nigeria, whereas point of sale, automated teller machine and mobile banking technology have a positive but not significant effect on financial inclusion in Nigeria. This suggests that an increase in the usage of financial technology (ATM, POS, WEB and mobile technology) will cause more Nigerians to be financially included. Based on the findings, the study recommends that policymakers should encourage the development of affordable and accessible 3G and 4G mobile networks in order to provide rural and remote customers with better access to mobile banking and other financial technologies. Okey-Nwala, Wachuku and Iwedi (2023) studied whether financial service accessibility stimulates economic growth in Nigeria. In addressing this research, they collected data on number of bank branches; automated teller machine usage and the volume of deposit accounts for the period of 40 years ranging from 1981 to 2021. The study employed the unit root test, granger causality test and regression techniques to analyzing the data obtained. The results show that various indicators of financial service accessibility have substantial positive impact on the economic growth in Nigeria. The study concludes that financial service accessibility has positive impact on the economic growth in Nigeria.

Iwedi, Kocha and Wike (2022) studied the effect of digitalization of banking services on the Nigerian economy using a twelve year aggregate annual digital banking service data, as provided by Central Bank of Nigeria Statistical Bulletin. Multiple regression procedure was used to establish that WEB Pay and Mobile Pay exhibit strong relationship with Nigeria's economic growth in Nigeria. Azman-Saini (2022) conducted a research investigating the relationship between FinTech countries' financial stability in a panel of 63 countries from 2006 to 2017. The result indicates that FinTech promotes financial stability through the channels of artificial intelligence, cloud technology, and data technology. Ozili (2021) conducted an analysis on recent evidence on financial inclusion from all the regions of the World. He found that financial inclusion affects, and is influenced by, the level of financial innovation, poverty levels, the stability of the financial sector, the state of the economy, financial literacy, and regulatory frameworks which differ across countries. Chinoda, Mashamba and Andrew (2021) studied Fintech, financial inclusion and income inequality nexus in Africa. This study found that financial inclusion mediates the financial technology inequality relationship, thus playing a fundamental role in reducing income and inequality in Nigeria.

3. Methodology

3.1 Data and Estimation Techniques

The study adopted the financial time series methodology in collecting quarterly data, and these secondary data were extracted from Central Bank of Nigeria Statistical Bulletin

(2021) for a period ten years, ranging from 2009–2019. Quarterly time series data on volume of transaction on automatic teller machine (ATM), volume of transaction on point of sale (POS), volume of transaction on web banking technology (WBT), and volume of transaction on mobile banking technology (MBT) in Nigeria form the independent variables, while the ratio of total deposit to gross domestic product was used as a proxy for financial inclusion in Nigeria. The estimation technique of the Pairwise granger causality techniques was used to analyze the data. The Pairwise granger causality techniques was used because it has proven to be useful in *determining whether one time series is useful in forecasting another*.

4. Result of Granger Causality Test

Table 1: Role of financial technology on banking the unbanked in Nigeria

Null Hypothesis:	*Obs*	*F-Statistic*	*Prob.*
POS does not Granger Cause DPR	43	1.53277	0.2229
DPR does not Granger Cause POS		1.64790	0.2066
ATM does not Granger Cause DPR	43	2.64860	0.1115
DPR does not Granger Cause ATM		6.53832	0.0145
MBT does not Granger Cause DPR	43	3.19623	0.0814
DPR does not Granger Cause MBT		0.03765	0.8471
WBT does not Granger Cause DPR	43	1.61620	0.2110
DPR does not Granger Cause WBT		2.75893	0.1045
ATM does not Granger Cause POS	43	0.86563	0.3577
POS does not Granger Cause ATM		8.30225	0.0063
MBT does not Granger Cause POS	43	0.01799	0.8940
POS does not Granger Cause MBT		0.20866	0.6503
WBT does not Granger Cause POS	43	2.58767	0.1156
POS does not Granger Cause WBT		11.8284	0.0014
MBT does not Granger Cause ATM	43	6.40909	0.0154
ATM does not Granger Cause MBT		0.93974	0.3382
WBT does not Granger Cause ATM	43	7.57691	0.0088
ATM does not Granger Cause WBT		4.86214	0.0333
WBT does not Granger Cause MBT	43	0.77293	0.3846
MBT does not Granger Cause WBT		4.08413	0.0500

Source: Extracted from E-view 9.0 Output

Table 1 shows the granger causality between financial technologies and financial inclusion. One-way causality exists between financial inclusion and the number of ATMs. Financial inclusion causes the number of ATMs to increase because an increase in the number of ATMs will make financial services more accessible to a broader range of people. This shows that more ATMs are positively correlated with higher financial inclusion. Only one-way causality exists between mobile banking transactions and financial inclusion. Mobile banking transaction causes financial inclusion because an increase in the use of mobile money technologies allows people to conduct financial transactions more efficiently, as they do not have to travel long distances to banks and exchange offices to carry out transactions. This indicates that the relationship between mobile banking technology and financial inclusion is positive. This indicates that the more people use mobile technology to conduct financial transactions, the higher the level of financial inclusion. However, this does not necessarily mean that more people will use mobile technology to access financial services.

5. Conclusion

The increase in the number of ATMs reflects technological advancement in the country and the emergence of alternative payment methods such as mobile money and E-Wallets. However, the number of ATMs has not kept pace with the growth of the population and the need for people to access banking services throughout the day. The increase in the number of POS has been attributed to the increase in the level of digital technology in Nigeria. The number of mobile banking transactions increased to around 600,000 in 2016 before declining. The decline in the uptake of these services was due to regulatory issues and the fact that the banks that provide the service had to provide incentives for consumers to use mobile banking. The increase in web-based transactions can be attributed to the increased use of mobile phones to access the internet, as well as financial technology innovations by Nigerian banks. For example, the introduction of mobile banking and mobile money has made it easier for people to access financial services via their phone without the need to visit a bank branch. The greater the number of POSs in a country, the less likely it is to be financially inclusive. This is because it increases access to formal financial institutions and thus makes it easier to open a bank account and start saving money, but many people still do not have accounts. In addition, some people avoid using POS systems because of their cumbersome interface or because cash is the preferred mode of payment. The more ATMs a country has, the more likely that country is to be financially inclusive. This is because it opens the country up to international commercial and financial flows. Nevertheless, the lack of ATM services in remote parts of the country can make banking very difficult for people who are far away from urban centres. The MBT coefficient is low, indicating that mobile banking transactions have a limited impact on increasing financial inclusion in Nigeria. This is because the uptake rate for these services has not been very high and the services are still fairly new to the market. Due to the populations' low level of internet access, there is little impact on improving the level of financial inclusion in Nigeria through the use of web-based banking technology. In addition, the cost of accessing the internet can be a barrier to adoption for many people, especially in rural areas where the infrastructure is not well developed.

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