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Financial Inclusion Policies and Performance of Nigerian Listed Deposit Money Banks

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Abstract: The development of modern technology for financial transactions poses exciting enquiries to both the finance sector operators and policy formulators with regard to appropriateness of previous institutional measures and availability of devices that will guarantee efficiency, effectiveness and financial stability of fiscal policies. This study evaluates the impact of financial inclusion strategies on the performance of Nigeria's banking industry. To get the intended outcome, this study employs an ex-post facto research strategy to investigate the relationship between financial inclusion and the economic performance of the Nigerian banking industry. The data utilised in this study is sourced from various secondary sources from 2009 to 2019. The study included descriptive statistics and the Ordinary Least Square method of Regression analysis. The findings of the study suggest that the adoption of Point of Sale (PoS) terminals significantly influences the overall efficiency and effectiveness of the banking industry in Nigeria. Additionally, it revealed that financial transactions conducted through Automated Teller Machines (ATMs) have a substantial impact on the Return on Equity (ROE) of the banking industry in Nigeria. On the other hand, it was determined that Mobile Money Transfer did not demonstrate a significant impact on the performance of the Nigerian banking sector. The report so suggests, among other recommendations, that the Central Bank of Nigeria should conduct a downward revision of electronic payment transaction rates in order to foster greater financial inclusion.

Keywords: bank performance; financial inclusion policies; Nigeria

1. Introduction

The evolution and application of technology for financial transactions raises important concern for policy makers and managers of financial institutions regarding the appropriateness of the measures and accessibility of instruments to guarantee stable and proper functioning fiscal policy. Hitherto, Nigeria had a high rate of financial exclusion, with the majority of the country's money remaining outside of banks. Governments have consequently focused on the problem of financial exclusion as a significant fiscal burden [1]. Prior to the recent initiatives aimed at fostering financial inclusion, it was observed that the Nigerian economy predominantly relied on cash transactions, with a substantial part of money in the economy being held in the form of physical currency outside of the formal banking sector [2].

Cash outside the banking sector went from 61.1 percent of all money in circulation in the 1960s to 44.3 percent in the 1970s and then to 40.9 percent in the 1980s. However, the amount of cash held outside of banks

stayed high, even though the amount of most liquid money in circulation went up [3]. Hence, Elechi and Rufus attributes the decline to greater financial awareness and government measures aimed at stimulating financial sector expansion [4].

On their part, Ogutu and Fatoki noted that the Nigeria's banking industry crisis during the 1990s brought a lack of public trust in the sector [5]. According to these researchers, the problem was further intensified due to the excessive spending of the political class, leading to an increase in the volume of currency in circulation beyond the confines of the legal banking system. Taiwo and Agwu gave the percentage of money not in bank to be 47.7 per cent when the 90s came to an end [6]. To arrest the impact of the distress in the banking sector in the 1990s, government came up with several policies which not only involved the implementation of economic changes aimed at enhancing the overall welfare of the population by addressing employment and income generation, while also incorporating strategies to promote the expansion and development of the financial sector. These efforts yielded a decreased proportion of currency not within the banks to 38.2 per cent by the end of 2005 [7].

Chude and Chude agree that, government and bodies responsible for managing monetary environment no doubt have initiated several policies for increased financial inclusion [8]. These initiatives encompass institutional engagements, such as the creation of community and microfinance banks, as well as the implementation of policies and programmes aimed at enhancing the accessibility of formal financial services for individuals who are currently excluded from the financial system. Private Banks, conversely, have also engaged in endeavours and initiatives with the objective of increasing the participation of individuals in the process of financial inclusion. However, their extent of involvement has largely been influenced by considerations of profitability.

Deposit Money Banks (DMBs) serve as the primary platform and delivery mechanism for payment operations and credit systems with intensive regulation and encouragement by the central government [9]. Hence, a growth in financial inclusion has the potential to expand the reach of banking services, resulting in favourable effects on the financial performance of banks. This can be achieved through enhanced investment opportunities and the provision of a broader range of services to a larger client base. This study is motivated by the concerns around the current level of financial inclusion and its potential impact on the financial performance of DMBs in Nigeria. The concern stems from the fact that banks primarily furnish the infrastructure, means of delivery, and operational setting in which financial inclusion initiatives flourish [10].

A plethora of reasons contribute to the high percentage of the unbanked population and those lacking access to financial services, particularly in rural settlements in Nigeria. Among them are lack of infrastructural facilities, low level of literacy, poverty and insecurity. There are many studies that stimulated financial inclusion in Nigeria [11–14]. However, it is worth noting that there is limited existing research on the correlation between financial inclusion and the financial performance of Deposit Money Banks (DMBs) in Nigeria specifically for the reporting year of 2020. The year 2020 is considered unique as a result of the significant impact of the COVID-19 pandemic on a large portion of the population that remains unbanked. Moreover, most of the previous research used Return on Assets as the profitability ratio to check how well the banking sector was doing financially. However, the current study examines RoE in proxy capacity towards the Nigerian banking industry performance. In light of the foregoing, and considering the widespread use of electronic platforms, the purpose of this research is to assess the bearing of financial inclusion policies on the success of publicly traded Nigerian DMBs.

The primary objective of this study is to assess the impact of financial inclusion measures on the performance of Nigeria's financial industry. Resulting in the following objectives.

a. Evaluate the significant effect of ATM transactions on the performance of Nigerian banking sector.

b. Appraise the impact of Mobile Money Transfer (MMT) on the performance of Nigerian banking sector.

This study also looks at how financial inclusion has affected the success of the Nigerian banking sector over eleven years, from 2010 to 2020. By selecting this particular period, it becomes possible to contemplate and document the initial years when financial inclusion reports were first published in the Statistical Bulletin of the Central Bank of Nigeria (CBN). Only ten (10) banks were sampled (5First Tier Banks and 5Second Tier Banks).

The Tier one banks are Zenith Bank, Guaranty Trust Bank, First Bank of Nigeria plc, Access Bank and United Bank for Africa plc. The Tier two banks are Sterling Bank, Unity Bank, Fidelity Bank, Stanbic IBTC and Keystone Bank. These chosen banks represent the performance of the Nigerian banking sector within the period under review.

This research endeavour will provide critical insights into the efficacy or inefficacy of financial inclusion initiatives within the Nigerian banking industry and throughout the nation. This will help policymakers figure out how to make sure that many Nigerians who don't have bank accounts get them. It will also help managers figure out how to get the best electronic banking payment systems and improve ICT (information and communication technology) to improve efficiency and profitability. To academics and researchers, this study will add to the literature in developing countries like Nigeria due to a lack of studies and complement prior research on financial inclusion strategies and bank performance due to the new perspective.

2. Literature Review

2.1. Financial Exclusion

With globalisation of business financial inclusion has gained more focus in everyday corporate finance literature. Nation states and organizations around the world prioritize the need to capture improve financial inclusion. Nevertheless, despite the considerable attention given to the concept of financial inclusion, there is a noticeable lack of discourse and clear definition surrounding the issue of financial exclusion. In developing economies such as Nigeria, people are excluded financially in different peculiar ways. Lots of researchers posits financial exclusion as populations that basic financial offerings are not available to Achugamonu, Oyelami, Saibum and Adekunle [15–17].

Negative impacts of financial exclusion are numerous but it often means inability to get out poverty. Achugamonu opined that individuals may experience exclusion from societal participation due to their socio-economic condition or their inability to fulfil the prerequisites of a conventional banking system [18]. These author further states that, financial exclusion is a significant concern for some groups, as the whole group could lack access to basic financial offerings. Financial exclusion ultimately hinders the ability of certain demographic groups to obtain the necessary resources for financing higher education, expanding their entrepreneurial ventures, or engaging in other activities that could facilitate their progress and development. Achugamonu added that significant number of people are locked away from because inability to sustain an information technology infrastructure and lacks proficiency in accessing financial resources through online platforms [18]. Aguera argues that access to financial offerings would increase financial inclusion and help acquire enduring skills that may effectively address future financial challenges are crucial.

Another causes of financial exclusion according to Choudhury and Bagchi is honest absence of financial services to those without conventional financial profile [19]. There is also the lack of insurance, loans, and everyday banking services also makes it hard for people who want to use financial services to do so. The prior research by Oyelami, Saibu and Adekunle observed the correlation between low pay and individuals experiencing complete financial exclusion [16]. According to these scholars, people who do not benefit from financial inclusion are individuals with low-wage informal employment, often involving cash payments, are typically characterised by being unmarried, having single parents, or experiencing physical disabilities. These groups of people often find themselves in the low-wage bracket which doesn't fit into conventional banking profile. Anyanwu and Anyanwu elucidated that social exclusion is a common reason for financial exclusion [20]. Defining social exclusion these scholars argue that it is when people are unemployed, financially dependent, or lack credit history become financially excluded due to their social situation, or when move across international borders to become financially excluded.

2.2. Financial Inclusion

Adetiloye and Adegbite define financial inclusion to mean access to relevant and affordable financial products and services for trade and individuals [21]. Meaning savings, transactions, payments, credit, and

insurance delivered responsibly. Chibba argue that, financial inclusion is the ability to make financial offerings available with minimal cost for individual and trade regardless of transaction volume [22]. However, Hick and Lanau defines financial inclusion as the capacity of individuals to obtain and proficiently utilise a diverse array of suitable financial services [23]. Such services must be offered in a way that prioritises the safety of consumer and pock friendliness, while also being sustainable for the service provider in a well-regulated setting. This proves that financial inclusion reduces obstacles to financial services to improve livability.

The first step to financial inclusion according to Chibba is obtaining a bank account as it allows people to storage and movement of money [22]. Ownership of bank account enables access to many other financial services, hence the need for increased account ownership. Hick and Lanau further observed that, financial access eases daily lives, and helps family units and enterprise plan for everything for the short and long-term including the unexpected. Account-holders are more likely to take advantage of credit and insurance to establish and grow enterprises, invest in education or health, manage risk, and build financial buffers, for better quality of lives.

The World Bank Group argue that, while financial inclusion has always been a challenge, several forces are currently helping to expand access to financial services that wealthier consumers get with ease [24]. It is also noted in the report the financial sector regularly improvises to increase offerings across the globe, and enhance profitability. The increased popularity of financial technology (or FINTECH), as an example, has created novel methodologies to tackle the issue of limited availability of financial services, and has developed alternative approaches for individuals and organisations to acquire these services at affordable rates.

In support of the World Bank study, Oyelami, Saibu and Adekunle added that recent FINTECH advancements have helped inclusiveness, including cashless digital transactions, low-fee robo-advisors, crowd funding, and P2P or social financing [16]. Anyanwu argues that Nigerian banks recognize the importance technology in changing the status of under banked, unbanked and low-income consumers because these groups can hardly be reached on social media [20]. Mostly their daily communication activities are carried out via text and WhatsApp messages. These scholars further acknowledged that use of text messages and Unstructured Supplementary Service Data (USSD) codes to reach these people. They can be accessed and used, in the presence or absence of broadband connectivity, to create accounts, transfer money, make payments, and get loans. Aguera further noted the use of mobile money merchants (Opay, MoMo, PoS operators) as middlemen between banks and their clients.

Based on the materials reviewed above, it can be deduced that financial inclusion facilitates the enhancement of the lives and livelihoods of individuals who are financially vulnerable, hence contributing to the advancement of the national economy. The growth of financial inclusion in Nigeria is attributed to several factors, which need banks to establish connections with marginalised clientele in order to fulfil governmental expectations.

2.3. Financial Inclusion Approaches

2.3.1. Automated Teller Machine (ATM)

ATM use is the most popular e-transact means in Nigeria today due to ease of use according to Ighoroje and Okoroyibo. However, despite its popularity, effectiveness is lacking as cash circulation is still high. Lack of effectiveness is as a result of the utilsaion for majorly cash withdrawal and balance inquiry. Other uses such as fund transfer, bills payment and mobile phone credit recharge are hardly explored. Poor education of consumers by banks is a suspected factor. Nonetheless, ATM increased cash accessibility thereby contributing to increased circulation of cash. To turn Nigeria into country f high financial inclusion, ATMs alone have not sufficed. Credit and debit cards for transactions as done in developed capital markets are needed.

2.3.2. Internet Banking

Internet banking, according to Obiekwe and Anyanwaokoro, allows customers to access their accounts and broad banking product and service information on banks' websites without having to send letters, faxes, original signatures, or telephone confirmation [25]. Siyanbola argue that, internet banking involves performing bank

transactions via World Wide Web (WWW) with computer, without having to visit banking halls [26]. Internet banking paved way or E-commerce by enabling payment all over the world. The internet banking is just like any other mobile banking transaction. It also executes payment instructions using electronic cards. Businesses use it for final payments with global customers online. Internet banking is widely accepted and used in settling bills, to buy air tickets of air tickets amongst others via online platforms of the merchants in Nigeria.

Siyanbola however, observed in 2013 low knowledge level of the advantages of this product to bank customers [26]. Increased awareness of the benefits will enable cashless policy implementation. However, in defining E-banking Uchenna argued that utilisation of internet and information technology networks for the provision of diverse value-added products and services to consumers of financial institutions is facilitated through the implementation of a system that enables individuals to engage in banking activities from any location via the internet [7]. With online banking, regular transactions which include account transfers, bill payments, balance inquiries, and terminate-payment instructions and even wired loan applications by some banks can be carried out. Furthermore, the advent of (E-banking) has facilitated the ability of clients to conveniently retrieve their account information at any given moment and from any location.

2.3.3. Mobile Banking Transactions

Mobile banking involves financial transactions enabled by mobile phones. It is popular and unique due to required low functionality structure. The facilities covered by mobile banking include account enquiry, stop payment, phone recharge card purchase, funds receipt and transfer, change of passwords and bill payments. Though this invention appears exciting, it still has low adoption among Nigerian bank customers. Hence, the Central bank of Nigeria alongside DMBs is advised to increase the level of awareness of this product to the Nigerian banking public. Given their suggestion to the apex bank, Kennedy and Jacky propose an increase in the scope of services offered to include stock market transactions, account administration and to access tailored information [27].

2.3.4. Point of Sale (PoS) Terminal

The Point of Sale (PoS) refers to the specific site where the payment for a card transaction takes place, typically facilitated by a cash register or credit card terminal. The PoS or point of purchase (PoP) is a device used to make payment. These devices are found in supermarkets, shops, hotels, filling stations and in many other selling spots. The utilisation of a terminal in commercial transactions entails the imposition of a fee referred to as the Merchant Service Charge (MSC). This fee is incurred by the trader and is applicable to all Point of Sale (PoS) terminal transactions. The maximum fee that can be levied on a merchant for any PoS terminal business is 0.75% of the transaction value, with a maximum cap of N1, 200.00.

2.4. Theoretical Framework

2.4.1. Technology Acceptance Model (TAM) Theory

The Technology Acceptance Model (TAM) theory theorized by Davis (1989), states that the primary factors influencing innovation are the perceived usefulness and simplicity of use of a technology [28]. These factors play a crucial role in shaping an individual's inclination to either adopt or reject the technology. This philosophy was modified from the Theory of Reasoned Action (TRA) by Ajzen and Fishbein and Theory of Planned Behaviour (TPB), advanced by Ajzen, specifically designed to align with the specific context of technology acceptance and usage [29, 30]. This model explains cash handling practices in Nigeria's DMBs influence corporate financial performance. According to Bátiz-Lazo, intention to use is vital to technology adoption [31]. Consequently, decision to accept a particular technology may be understood through a four-stage process, as elucidated below.

Stage one: External factors like how people feel about IT are taken into account. The individual preference is reflected in Perceived Usefulness (PU) and Perceived Ease of Use (PeU). According to Tilakaratna whereas perceived usefulness is a user perception that the implementation of a novel strategy is expected to enhance

performance [32]. PeU conversely refers to the extent utilisation of the new system would necessitate minimal exertion from the user.

Stage two: It focuses on the concept of attitude, which arises as a result of the user's views towards the use of technology, which also determines the user's approach towards acceptance or non-acceptance of the technology.

Stage three: This stage is the intention stage. It refers to the phase in which the user's attitude is assessed in terms of predicting their inclination to utilise the system and the degree to which they are likely to employ it.

Final stage/ Stage Four: This phase represents the practical implementation step, wherein the user aims to assess their proficiency in utilising the technology.

Tilakaratna posits that, the adoption of technology is dependent on the personal beliefs of the user as well as the immediate external environment in which they operate. Research have shown that, people believe technology use to be advantageous, reducing mental and physical effort [33,34]. These prior studies showed that consumer trust is as important in adopting financial products and services of banks as the widely accepted TAM use-antecedents, perceived ease of use and perceived usefulness.

2.4.2. Usefulness of the TAM Model

In his contribution to knowledge sharing by using TAM, Al-Tarawneh gave the following as the strengths of the model [35].

(1) TAM has a strong ability to predict of consumer's behavioral intention that has been positively demonstrated with a wide variety of consumer products.

(2) TAM has been effective for explaining many kinds of systems use (i.e. e-learning, learning management, web portals etc.).

(3) TAM is ideally suited to explain the adoption of purely inherent systems.

2.5. Empirical Literature

Previous empirical studies have been piloted on the subject of financial inclusion on the performance of many sectors around the world. For instance, Evans and Adeoye assessed the causes of financial inclusion in Africa by using a dynamic panel data approach for 15 countries over the period of 10 years from 2005–2014 [36]. Their findings depicts that, lagged financial inclusion, GDP per capita, money supply as percentage of GDP, adult literacy rate, Islamic banking activities and internet access have great significance in explaining the level of financial inclusion. Park and Mercado through an enhanced monetary inclusion index for 151 economies and assessing the cross-country impact of financial inclusion on poverty and income inequality across these country's income groups found that higher marketable inclusion significantly co-vary with higher economic growth and lower poverty rates, but only for high and middle-high-income economies [37]. However, these authors did not find significant effect of fiscal inclusion on income inequality in any of the income group.

Mohammed, Mensah, and Gyeke-Dako examined how financial inclusion impacts low-income families in 35 sub-Saharan African nations and found that by giving the poor net wealth and welfare benefits, financial inclusion greatly decreased poverty in those nations [38]. Jumba and Wephukhulu examined the effects of cashless transactions of 147 supermarket branches in Nairobi County on their commercial performance using descriptive research design and systematic random sampling technique to calculate a sample size of 66 respondents [39]. The research finding for this study concludes that financial accessibility, financial innovations, cash handling practices, and transactions costs significantly influences business performance. The study recommended that there is need for supermarkets in Nairobi County to accept various market payment innovations and improve financial accessibility to the several payments platforms.

Ogutu and Fatoki used quantitative research to assess how electronic banking affects listed commercial banks in Kenya [40]. Secondary data was used and obtained from Central Bank of Kenya banking supervision reports and bank annual reports. The research demonstrated a favourable correlation between mobile, ATM, internet, and agency banking and reported DMB financial performance in Kenya. These researchers also identified a good relationship between commercial bank financial performance and m-banking. From 2000 to

2018, Andabai and Bina researched how cashless policy affected Nigerian deposit money banks [11]. The research used secondary data and found that ATM, PoS terminal, and electronic mobile payment affect DMB ROA in Nigeria.

Muotolu and Nwadialor examined the Central Bank of Nigeria Cashless Policy and Deposit Money Bank Financial Performance in Nigeria [14]. A panel dataset was gathered from 14 banks from 2012, when the cashless policy was adopted, until 2017. The data was analysed using descriptive statistics. The study found that ATM has a positive and significant effect on Nigerian banks' ROA, while PoS, Internet Banking, NIP, and NEFT platforms have a positive but insignificant effect.

Ighoroje and Okoroyibo investigated if cashless policy affected Nigerian DMBs [13]. The investigation utilised historical time series quarterly data from the Central Bank of Nigeria (CBN) statistics bulletin (2021) using an ex-post facto design. The research found that ATM and Internet Banking positively and significantly affect ROE, Point of Sale (PoS) positively but insignificantly affects ROE, and Mobile Banking negatively and statistically significantly affects ROE.

3. Methodology

(1). Research Design

This study adopts the ex-post facto research design to examine the association between financial inclusion and performance of the Nigerian DMBs using data obtained from various secondary sources for the period from 2010–2020.

(2). Population and Sample Size of the Study

All the nineteen (19) DMBs presently listed on the floor of the Nigerian Stock Exchange (NSE) making up the Tier 1 and Tier 2 banks constitute the universe of this study. However, from this defined population, ten (10) banks, namely five (5) Tier 1 banks i.e. (Zenith, Guaranty Trust, First Bank, Access and United bank for Africa) and five (5) Tier 2 banks namely, (Sterling, Unity, Fidelity, Stanbic IBTC and Keystone were selected as sample for the study. These choices were informed by the need to reflect the Central Bank of Nigeria grouping and to strike a balance between the two tiers of the Nigerian banking sector.

(3). Method of Data Collection

This research used only secondary data from the Central Bank of Nigeria's Statistical Bulletin and the chosen banks' annual reports on the Nigerian Stock Exchange's daily listing. Other secondary sourced materials such as textbooks, reputable journal articles from highly reputable publishers and some internet materials were also used. The data for this study as earlier stated covers a span of eleven years (2010–2020).

(4). Definition of Variables

The dependent (response) and independent (regressors) variables make up the two types of data used in this analysis. The number of transactions was selected as the independent variable in this research, with profitability ratios serving as the dependent variable.

3.1. The Independent Variables

(1). Volume of Transactions

The variable in question denotes the aggregate number of transactions conducted by financial institutions as a result of the implementation of a cashless policy. Possible transactions may include those conducted by automated teller machines (ATMs), point of sale (PoS) systems, online payment platforms, mobile money transfers, and traditional cheque payments. However, for the purpose of this research, the scope is limited to three specific cashless policy techniques: Point of Sale (POS), Mobile Money Transfer, and Automated Teller Machine (ATM) transactions. This is due to their prevalent use within the contemporary Nigerian context.

3.2. The Dependent Variable

(1). Profitability Ratios

All the ratios and metrics used to evaluate a bank's efficiency fall under this category. The capacity of a company to make profits in relation to its assets, shareholders' equity over time, operational expenses, and its revenue may be evaluated using this group of financial measurements. This research uses Return on Equity (RoE) to evaluate the success of the Nigerian banking industry, which is a different metric from those used in the previously studied studies.

3.3. Model Specification

This research used a basic econometric regression analysis model to assess the relationship between the dependent variables and independent variables. The functional model used in this investigation is outlined as follows.

Bank Performance $= f$ (Volume of Payment) ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯i

From equation (i), Volume of Payment could be further broken down as below:

Volume of Payment $=$ f (PoS, MM, ATM) ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯.. ii

Bringing equations ii into equation i, we have:

Bank Performance $= f$ (PoS_{vol}, MM_{vol}, ATM_{vol}) ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯. iii

Hence, equation iii model can be linearly shown as below:

BankPerf$= \beta_0 + \beta_1 PoS_{volt} + \beta_2 MM_{volt} + \beta_3 ATM_{volt} + \mu$ ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯iv

Where,

BankPerf = The Bank Performance serves as a stand-in for the response variable. Return on Equity is the metric by which a bank's performance would be evaluated.

$PoS_{vol}=$ It stands for Volume of Transaction via Point of Sale. This serves as a representative measure for one of the components of the Financial Inclusion Strategy.

MM_{vol} = Is the number of transactions made via a mobile money transfer service. This is a substitute for the second Financial Inclusion Strategy.

ATM_{vol} = Stands for Volume of Transaction through Automated Teller Machine. This is a proxy for the third Financial Inclusion Strategy.

$\beta_0 - \beta_3$ = Coefficients of the variables

μ= StochasticError Term

4. Method of Data Analysis

This study used descriptive statistics and ordinary least square regression to achieve its goals. Descriptive statistics will identify key data points, and Ordinary Least Square Regression Analysis will evaluate variable associations. Regression analysis shows how changing one independent variable affects the average value of the dependent variable while maintaining the others constant. This research used Econometric Views (E-VIEWS) statistics software model 10.0.

4.1. Presentation of Results

4.1.1. Descriptive Analysis

According to the data shown in Table 1, it can be observed that the mean values for all variables imply positive returns. In relation to their respective performances, the data presented in the table indicates that the Value of Transactions through ATM exhibits a superior performance, as seen by its mean score of 466,000,000.

Additionally, there was a notable demonstration of strong performance in the Value of Transactions through Point of Sales and Mobile Banking. The observed strong performance can be attributed to the contrasting mean values of 92,279,429 and 60,417,411, respectively. According to the data shown in Table 1, it was noted that the mean values for both variables exhibit positive returns.

In relation to performance consistency, the data shown in Table 1 indicates that Return on Equity (ROE)

exhibited greater consistency in performance compared to the other variables examined. This is evident from the relatively low Standard Deviation value of 18.0067 and the mean value of 24.9264 tied to ROE. On the other hand, it is evident from the standard deviation row that the Volume of Transaction through Point of Sale (PoS), Volume of Transaction through Mobile Banking (MOBILE), and Value of Transaction through Automated Teller Machines (ATM) exhibited inconsistency, reflected by their high standard deviation values.

Regarding the column of skewness, it is apparent that all the variables included in the study exhibit a long right tail, indicating positive skewness. This can be attributed to the positive character of the outcomes of these variables [40]. According to the Jarque-Bera analysis, Table 1 presents the results indicating that only the Volume of Transaction through Mobile Banking (MOBILE) had a normal distribution, with a Jarque-Bera probability value of 0.000012. Nevertheless, the Jarque-Bera probability values indicate that Return on Equity (ROE), Volume of Transaction through Point of Sale (POS), and Volume of Transaction through Automated Teller Machines (ATM) exhibited a somewhat normal distribution.

Table 1. Descriptive Analysis of the Variables Employed.

	ROE	PoS	MOBILE	ATM
Mean	24.9264	92279429	60417411	466000000
Std. Dev.	18.0067	146000000	109000000	280000000
Skewness	1.0869	1.5479	2.5089	0.1911
Jarque-Bera	2.1869	4.8318	22.5949	0.6432
Probability	0.3351	0.0893	0.000012	0.7249
Observations	11	11	11	11

Source: Extracted from EVIEWS model 10.0.

4.1.2. Regression Analysis

Table 2. Outcome of Regression Analysis.

Variable	Extent of Relationship	t-Statistic	$t_{probability}$
C	59.5987	6.2023	0.0004
POS	0.000000257	2.7015	0.0306
MOBILE	-0.000000155	-1.6526	0.1424
ATM	-0.000000105	-3.8932	0.0060
DEPENDENT VARIABLE	R-Squared:0.6885		Adj. R-Squared:0.5551
Return on Equity	F-Statistic:5.1583		$F_{probability}$: 0.0342

Source: Extracted from EVIEWS result.

(1) Coefficient of Determination (R-Squared)

The R2 value of 0.6885 for Return on Equity, as indicated in Table 2, demonstrates the degree of goodness of fit of the regression model. The value of 0.6885 indicates that around 69% of the observed variation in Return on Equity of Nigerian banks during the examined period can be accounted for by the effects of the independent variables employed, specifically the Volume of Transaction through Point of Sale, Volume of Transaction through Mobile Banking, and Volume of Transaction through Automated Teller Machines. This implies that the unexplained portion of the Return on Equity performance of Nigerian banks over the analysed period, amounting to 31%, can be attributed to factors that were not considered in the model and have been accounted for by the error term. The aforementioned outcome demonstrates a high level of resolve exhibited by the model.

(2) F Statistic (F-test)

The calculated F statistic value of 5.1583 for Return on Equity, with a degree of freedom of 3/7, turns out to be greater than the tabular value of 4.35 (i.e., 5.1583 > 4.35). Based on the obtained outcome, the alternative hypothesis is accepted. Hence, it is hereby established that the independent variables used in this research exhibit statistical significance in elucidating the expansion of the dependent variable during the designated study timeframe.

(3) Evaluation Based on Economic Criterion

The intercept constant is 59.5987. Nigerian banks' Return on Equity would rise to 59.5987 if all explanatory factors were maintained constant.

This could be estimated as ROE = 59.5987+ 0.000000257POS – 0.000000155MOBILE - 0.000000105ATM + U.

The model estimates reveal a positive relationship between Nigerian banks' Return on Equity and Point of Sale (PoS) Transaction Volume. This means that each unit change in Nigerian banks' RoE would boost Point of Sale (PoS) volume by 0.000000257. However, MOBILE and ATM are estimated at -0.000000155 and -0.000000105 respectively. This suggests that any change in Nigerian banks' RonE would lower Mobile Banking (MOBILE) and ATM Transaction Volume by 0.000000155 and 0.000000105, respectively.

4.1.3. Test of Hypothesis

Hypothesis One

H_0: Point of Sale (PoS) terminals have no significant effect on the performance of Nigerian banking industry.

H_1: Point of Sale (PoS) terminals have significant effect on the performance of Nigerian banking industry.

Table 2 demonstrates that the t-test result of 2.7015 and its probability value of 0.0306 are below the 5% Level of Significance, rejecting the null hypothesis and accepting the alternative. The researcher concluded that Point of Sale (PoS) terminals significantly impacts the performance of Nigerian banking sector as a result of this.

Hypothesis Two

H_0: ATM transactions have no significant effect on the Return on Equity of Nigerian banking sector

H_1: ATM transactions have significant effect on the Return on Equity of Nigerian banking sector

From Table 2, the t-test value of 3.8932and its corresponding probability value of 0.0060 shows that the probability value of 0.0060 is less than the 5% Level of Significance, as such, the null hypothesis is rejected and the alternative accepted. This made the researcher to conclude that Automated Teller Machine (ATM) transactions have significant effect on the Return on Equity of Nigerian banking sector.

Hypothesis Three

H_0: Mobile Money Transfer has no significant effect on the performance of Nigerian banking sector.

H_1: Mobile Money Transfer has significant effect on the performance of Nigerian banking sector.

According to the findings shown in Table 2, the t-test result of 1.6526 and its associated probability value of 0.1424 indicate that the observed probability value of 0.1424 is larger than the predetermined significance level of 5%. Consequently, the null hypothesis is accepted, while the alternative hypothesis is rejected. Based on the findings, the researcher reached the conclusion that Mobile Money Transfer does not have a statistically significant impact on the functioning of the Nigerian banking industry.

5. Summary and Conclusion

The present study aimed to assess the effects of financial inclusion programmes on the operational dynamics of the banking system in Nigeria. In order to conduct this evaluation, the study examined the effects of Point of Sale (PoS) terminals on the performance of the banking business in Nigeria. The study also evaluated the influence of ATM transactions on the operational efficiency of the Nigerian banking industry. Lastly, the present study examined the effects of Mobile Money Transfer on the performance of the banking business in Nigeria. Upon conducting an examination of the supplied data, the subsequent conclusions of this study were condensed as follows:

(1) Point of Sale (PoS) terminals have significant effect on the performance of Nigerian banking sector.

(2) Automated Teller Machine (ATM) transactions have significant effect on the Return on Equity of Nigerian banking sector.

(3) Mobile Money Transfer has no significant effect on the performance of Nigerian banking sector.

This study's findings support the views of Ighoroje and Okoroyibo as well as Andabai and Bina where for instance, Ighoroje and Okoroyibo conducted a study to examine the impact of the cashless policy on the operational efficiency and financial performance of deposit money banks in Nigeria. The findings of the research indicate that the utilisation of Automated Teller Machine (ATM) and Internet Banking has a favourable and substantial influence on return on equity. On the other hand, Point of Sale (POS) has a positive impact on return on equity, but it is not statistically significant. Interestingly, Mobile Banking exhibits a negative and statistically significant impact on return on equity. Likewise, Andabai and Bina examined the impact of cashless policy on deposit money banks performance in Nigeria for the period 2000–2018. The study uncovered a statistically significant correlation between the utilisation of automated ATM, PoS terminal, and electronic mobile payment systems and the return on assets among banks operating in the Nigerian banking business. Furthermore, the study's finding share the same view with that of Muotolu and Nwadialor; Ogutu and Fatoki and Obiekwe and Anyanwaokoro).

Muotolu and Nwadialor carried out a study with the objective of determining how the Cashless Policy implemented by the Central Bank of Nigeria influences the financial performance of DMBs in Nigeria. The study revealed that automated teller machines (ATMs) have a noteworthy and statistically significant impact on the return on assets (ROA) of banks in Nigeria. Additionally, point of sale (POS) systems, internet banking, and the National Interbank Payment System (NIP) and National Electronic Funds Transfer (NEFT) platforms were also observed to have a favourable influence on the ROA of listed banks in Nigeria, but this effect was determined to be statistically insignificant. Earlier study by Obiekwe and Anyanwaokoro investigated the effect of Electronic Payment Methods (EPM) on the profitability of commercial banks in Nigeria. Their findings revealed that Automated Teller Machine (ATM) and Mobile Phone payment have a significant effect on the profitability of commercial banks in Nigeria.

However, Point of Sale (POS) has an insignificant effect on commercial banks' profitability in Nigeria. In Kenya an East African country, Ogutu and Fatoki explored how electronic banking affected listed commercial banks. The research concluded that mobile banking, agency banking, ATM banking, and internet banking positively affected listed commercial banks in Kenya. This confirms the substantial positive correlation between commercial bank financial performance and m-banking.

6. Recommendations

The researcher provided the following recommendations in accordance with the study's objectives, analysis, and findings

(1) The Central Bank of Nigeria should intensify its efforts on public awareness and education campaigns about fiscal inclusion, with the aim of encouraging widespread adoption of this new banking model among the general population.

(2) Enlightenment on the benefits through jingles on financial inclusion will entice the unbanked individuals into the new policy.

(3) The CBN should also review the charges for E-transactions downwards to encourage more patronage.

(4) The Nigerian government and internet service providers may encourage financial inclusion by ensuring constant electricity supplies and inexpensive internet tariffs. These elements will boost Nigerian banking.

(5) In order to facilitate the transition to a cashless economy, it is imperative to enhance electronic banking products by enhancing electronic payment processes. In order to enhance financial inclusion among Nigerians, it is essential to incorporate more features into electronic channels such as Point-of-Sale machines, web banking, and mobile banking.

(6) On the part of the banks and e-payment service platforms should be secure and effectiveness on service delivery should also be encouraged.

(7) A new and easy to use platform should be designed and introduced through the joint effort of the apex

bank and DMBs in Nigeria due to the level of literacy of the people of our rural communities.

6. Suggestions for Further Studies

Every significant piece of new study pushes the boundaries of our existing body of knowledge further out. This study has made a substantial contribution to the discussion over the impact of financial inclusion initiatives on the operational efficiency of DMBs in Nigeria. However, this study's focus is only on DMBs, ignoring other banks and other finance sectors such as the insurance companies. Moreover, this study does not consider the effect of inclusion on the non-financial sectors of the Nigerian economy. Thus, future studies by researchers may wish to explore the effect of financial inclusion strategies on these and other sectors. Upcoming studies may also wish to introduce control variable (s) like internet network connectivity to see if it will have a significant effect on financial inclusion strategies on banks profitability.

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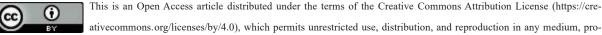
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