Journal of Interdisciplinary Research in Accounting and Finance
ISSN: 2837-1895| Impact Factor : 6.18
Volume. 11, Number 3; July-September, 2024;
Published By: Scientific and Academic Development Institute (SADI)
8933 Willis Ave Los Angeles, California
https://sadijournals.org/index.php/jiraf|editorial@sadijournals.org

IMPACT OF FINANCIAL INCLUSION ON DEPOSIT MONEY BANK PERFORMANCE IN NIGERIA

Prof Enyinna Okpara Ph.D, FCA Eke Robert Ike, Ph.D, FCA and Amenzee Adesua Constance
Department of Accounting and Finance School of Management and Social Sciences, Wellspring University Benin City, Edo State.
Email: *enyiokpara@yahoo.com; (+2347066699532), robbyeke19@yahoo.com; robert_eke@wellspringuni.edu.ng ;(+2348034712733),* constance0547@gmail.com (+2349130168779).
DOI: https://doi.org/10.5281/zenodo.13772769

Abstract: The research is set out examine the impact of financial inclusion on performance of Deposit money Banks in Nigeria. Specifically, the study looks into the impact of bank branch spread, ATM spread and bank loans to Small and medium enterprises on financial inclusion. The study adopted the expost facto research design and data was gotten from the financial statement of listed deposit money banks and CBN statistical bulltetin. The study investigated twelve (12) listed deposit money banks from the period of 2018-2022. Panel least squares was used to estimate the models of the study. The findings of the study revealed that the penetration of financial services through bank branches has no significant impact on bank performance in Nigeria; The penetration of financial services through ATM spread has positive and significant effect on bank performance in Nigeria; The usage of financial services via SMEs loans has no significant impact on bank performance in Nigeria; The study concluded that financial inclusion has mixed influence on financial performance of banks in Nigeria. The study recommended that banks should continue to increase the number of branches in the rural areas to drive full financial inclusion which would in the long-run improve the financial performance of banks; The current drive of digital financial inclusion through ATM spread should be sustained to allow access of financial services to the unbanked population; The current volume of SMEs loans should be improved upon to drive financial inclusion and Banks should do more on cyber security to boost the usage of online banking services in driving digital financial inclusion.

Keywords: Financial Inclusion, Bank Branches, Automated Teller Machine, SME Loan, Bank Performance.

INTRODUCTION

Banks are essential to the growth of the financial and economic systems because they draw deposits and provide both direct and indirect financial services, including credit and debit cards, loans, and mortgages (Beck et al., 2015). As a result, these organisations' primary objectives are to maximize stockholder value and turn a profit (Pilloff, 1996). Banks view individuals, small and medium-sized businesses, and other groups as the demand side of the banking services market, and they depend on them to help them meet their supply-side targets.

Although the fundamental operations of banks have not changed much over the last few decades, the industry's structure has undergone significant change, according to Backjena, Mala & Vasanthi (2016). Over the past ten years, there has been a noticeable increase in the variety of channels available for the delivery of financial services.

New delivery technologies including Internet banking, mobile banking, and a range of ATM products have replaced traditional distribution methods (Ndlovu & Ndlovu, 2017). In order to give consumers additional options for checking account balances, transferring payments, paying bills, and making purchases of products and services without needing to use actual cash or cheques or leave their homes, banks are working with hardware, software, and telecommunications companies (CBN, 2019).

Researchers, stakeholders, and policymakers are becoming more and more interested in the subject of financial inclusion, particularly in developing countries. Sub-Saharan Africa (SSA) had the lowest percentage of adult bank account holders at formal financial institutions in the world in 2017, according to the World Bank Global Findex report (Demirgüç-Kunt et al. 2018). This is less than any other region in the world. However, only 20% of adults in the poorest developing nations utilise official financial institutions for saving, and 65% of them do not have access to a formal bank account (Pazarbasioglu et al. 2020).Government has embarked on several programmes to encourage financial institution like banks to embark on financial inclusion drive to reach out to the unbanked but banks are not willing because they feel that reaching out to the unbanked in rural areas is counterproductive.

Government have on its programme always advocated for financial inclusion programme by financial institutions. Since government divested from financial sector, majority of banks have focused mainly on profitability. They see branch expansion to rural areas as non-profitable and as such are not willing to do business in rural areas. This study will try to investigate if the present effort of banks in the area of financial inclusion have effect on their profitability

In an effort to boost financial inclusion and lower the number of unbanked people, banks in emerging economies are turning to digital financial services. The ubiquitous use of financial inclusion penetration strategies such as increase in bank branches, spread of ATMs, easy access to SMEs loans and internet banking. Also, cellphones and the internet has completely changed how we interact, work, and live. Mobile financial services, in addition to the conventional financial services that banks currently provide to their clientele, are revolutionary in developing nations—with the aim of drawing the underprivileged and economically marginalized into the official financial system (Andrianaivo & Kpodar, 2011; Chinoda et al., 2019; Kim et al., 2017). By bridging the current financial infrastructure gap, the ability to access banking services via mobile devices has greatly improved financial inclusion (Chatterjee, 2020; Chatterjee & Anand, 2017).

The broad objective of this study is to examine the impact of financial inclusion on banks performance in Nigeria. From the review of past works, it was observed that there is a condition of mixed findings on the nexus between financial inclusion and bank performance. Evidences showing both positive, negative and no evidence. Furthermore, it was observed that there is paucity on studies in Nigeria on the impact of financial inclusion on banks performance. This gap identified was the motivation of the study. Thus, the purpose of this study is to investigate the impact of financial inclusion on banks performance in Nigeria. For the purpose of this study, listed deposit money banks would be investigated. Specifically, this study will

i. Ascertain the penetration of financial services through bank branches on bank performance in Nigeria;
ii. Determine the effect of bank ATM penetration on bank performance in Nigeria;
iii. Examine the impact of the usage of financial services via SMEs loans on bank performance in Nigeria;

The research questions and hypothesis was derived from the objectives.

LITERATURE REVIEW

Conceptual Review

Banks Performance

Generally speaking, bank performance indicates how well a bank performed in relation to its goals over a trading period, and the income statement is probably the only record that provides this information. Performance connects the decisions made by an organisation with its aims and objectives (Yakubu and Musah, 2022). The number of banks, the scope and depth of their operations, and the ownership structure of these institutions have all changed significantly throughout the years in the Nigerian banking sector. The challenges posed by technical advancements, financial sector deregulation, globalisation of operations, and the adoption of international standards for prudential and regulatory needs have all had a significant impact on these shifts.

The Nigerian banks' pre-reform state was defined by a low capital base, a high percentage of non-performing loans, insolvency and illiquidity, an excessive reliance on foreign exchange trading and public sector deposits, poor asset quality, weak corporate governance, and a system in which investors had little faith (Ebong 2006). According to Soludo (2004), the Nigerian financial sector is now weak and insignificant. The system is facing enormous obstacles that require immediate attention and, if left unattended, may quickly spiral out of control. He also mentioned having a weak asset base, ongoing illiquidity, and unproductive activities as bank issues.

Typically, stock prices and their actions are seen to be indicators of a company's performance. Since this is a market indicator, it could not always be accurate; however, performance indicators like bank size, deposit volume, and profitability might be thought to be more accurate. In this study, bank performance is evaluated using profitability measures, namely the Return on Equity Capital (ROE) and the Return on Assets (ROA). These ratios show the rate of return and managerial effectiveness; if the ROE is greater than the ROA, the business has advantageous financial leverage.

Financial Inclusion

The literature cannot agree upon a single definition of financial stability. According to García & Jos (2016), resilience to economic shock and the transfer of optimum savings to optimal investments are two aspects of the financial system's overall correct functioning that are often correlated with financial stability. One supplementary strategy for accomplishing the Millennium Development Goals of the United Nations is financial inclusion (Chibba 2009). The process of enabling all socioeconomic groups, even underprivileged ones, to have access to formal financial systems is known as financial inclusion (Pham et al., 2019).The World Bank (2020) defines financial inclusivity as giving low-income individuals access to long-term, affordable financial services.

The term financial inclusion has gone beyond the normal to the new normal know as digital financial inclusion. Here the application of information technology is appreciated. Financial systems in both developed and developing nations have changed as a result of digitalization (Wysoki ´nska 2021). As a consequence of the ongoing decline in barriers within traditional financial institutions, financial inclusion has increased (Kooli et al., 2022). This development is acknowledged as a critical facilitator for accomplishing the 2030 Sustainable Development Goals (SDGs) (Allen et al., 2016). In the discussion of how to guarantee that those at the bottom of the pyramid become financially engaged, digital financial inclusion is taking centre stage (Peric 2015). In order to reach underserved communities and those who are financially excluded, banks and non-bank institutions are collaborating to expand financial access using digital financial techniques (Peric 2015). By directly using artificial intelligence (AI), banks and non-banking organisations are expanding on long-standing digital methods to enhance accessibility, especially for those previously served by traditional financial institutions (Peric 2015).

Channels of financial inclusion

Expansion of bank branches

The economic structure of developing countries, which is primarily based on agriculture, contributes to financial exclusion. The majority of the population lives in rural areas with limited banking intermediation and a low distribution of money deposit bank branches (distance barrier) across the nation as a result of commercial financial institutions' policies (Saidu et al, 2020). The aforementioned distance barrier is caused by the underrepresentation of commercial banks in the market as well as the quality of the infrastructure, which makes it more difficult for people to migrate from rural to urban regions in order to conduct different financial transactions (Oyelami, Saibu, and Adekunle, 2017).

Financial inclusion in Nigeria is exacerbated by the underrepresentation of deposit money bank branches. In actuality, smaller, more cosmopolitan states with comparatively lower populations have more bank branches than larger, more populous states in Northern Nigeria like Adamawa, Jigawa, Bornu, Bauchi, and Kwara.

Automated teller machine (ATM)

An automated teller machine (ATM) is an electronic banking terminal that allows users to perform basic transactions without the help of a teller or branch staff. ATMs are useful for self-service transactions such as cash withdrawals, bill payments, and account transfers. In Nigeria, the majority of ATMs do not accept cash deposits. Some fraudulent DMBs often impose cash withdrawal fees regardless of account location.

The 2004 bank reforms and the nation's previous 2003 creation of the Inter switch network are credited with the broad acceptance of ATM financial engineering. Money deposit banks put ATMs at their locations and other key locations to solidify the reform programme, promote a cashless economy, and guarantee bank efficiency. As a result, vigorous roll-out attempts by banks, backed by Inter-switch Network, led to a 93% rise in bank transactions between January 2005 and March 2006, according to Eke and Ukanmenmen (2021),

SMEs Loans

Low public knowledge of saving and interest in applying for loans from formal financial institutions or banks was a result of the layer of low-income groups' lack of financial inclusion (Bank Indonesia, 2014). Even with high interest rates, the public preferred to request for loans via moneylenders, informal financial organisations, due to the bank's complicated loan filing and governance procedures.

The credit filing rates of some SMES and low-income groups in emerging nations are low compared to official financial institutions. One of the complex criteria and the collateral risk is the cause for the low credit level (IMF, 2014). A formal financial organisation like a bank may see an increase in long-term profit if it can meet the demands of the general public and make loan applications easier (Shihadeh et al., 2018).

Empirical Review

Chinoda and Kapingura (2023) examined the impact of digital financial inclusion and bank competition on bank stability in sub-Saharan Africa for the period 2014 to 2020. The study used two-step System Generalised Method of Moments to estimate the model of the study. An index of digital financial inclusion, z-score, Herfindahl–Hirschman Index (HHI), and non-performing loans were used as data variables. The researchers found that digital financial inclusion has a significant positive relationship with bank stability (z-score) and a negative relationship with non-performing loans. The study also found a significant negative effect of bank competition (HHI) on bank stability in line with the competition fragility view.

Yakubu and Musah (2022) examines the impact of financial inclusion on bank profitability in Sub-Saharan Africa (SSA) over the period 2000– 2017. The study employs the principal component analysis (PCA) to generate an index of financial inclusion. The researchers found that financial inclusion negatively influences bank profitability

in Sub-Saharan Africa, particularly in the post-global financial crisis period. Banking sector stability is noted to positively and significantly drive bank performance. Besides, while inflation has a significant positive impact on profitability, the effect of economic growth on profitability differs depending on the period of analysis.

Ozili, Lay and Syed (2022) investigated the effect of financial inclusion on economic growth in religious and secular countries. Data were collected for 23 countries of which 10 countries are secular countries and 13 countries are religious countries from the period of 2006-2020.The financial inclusion indicators are the number of ATMs per 100,000 adults and the number of bank branches per 100,000 adults. The findings reveal that bank branch contraction significantly increases economic growth in secular countries. Bank branch expansion combined with greater internet usage increases economic growth in secular countries while high ATM supply combined with greater internet usage decreases economic growth in secular countries. The researchers also found that bank branch expansion, in the midst of a widening poverty gap, significantly increases economic growth in religious countries, implying that financial inclusion through bank branch expansion is effective in promoting economic growth in poor religious countries. It was also found that internet usage is a strong determinant of economic growth in secular countries.

Hermuningsih, Sari and Rahmawati (2022) examine the impact of fintech, liquidity, and bank size on financial performance in Indonesia's conventional commercial banks registered with the Financial Services Authority. This study's population consists of Conventional Commercial Banks registered with OJK from 2012 to 2021. The research sample comprises conventional commercial banks using fintech between 2012 and 2021. Purposive sampling was used as a sampling technique. The data from 20 banks with 200 financial statement data show the hypothesis testing using SmartPLS software (PLS-SEM method). The findings of this study show that fintech has a positive effect on financial performance, bank size is a moderating variable for the repercussions of fintech on financial performance, liquidity also has a positive impact on financial performance, and bank size is a moderating variable for the effectiveness of liquidity on financial performance.

Sedera, Risfandy and Futri (2022) to investigate the effect of financial inclusion on bank profitability in the Indonesian context. The sample of this study consisted of 93 commercial banks in Indonesia between 2015 and 2020. The researchers used panel data regression with a fixed effects approach to investigate the nexus between financial inclusion and bank profitability. The researcher found that financial inclusion positively affected bank profitability in three different dimensions of financial inclusion: access, availability, and usage.

Bhattacharyya and Khan (2021) examined the interactive relationship of CSR spending with financial inclusion (FI) and performance. Simultaneous equations model to capture the FI-performance and CSR-firm performance relationship and apply three-stage regression approach and generalized method of moments (GMM) approach to address possible endogeneity. The researchers found positive association of CSR spending with performance but a negative relationship of FI with performance. They also find that FI negatively moderates the CSR spending-performance relationship.

Vo and Nguyen (2021) examined the impact of financial inclusion on bank performance in the Asian region. Principal component analysis and dynamic generalized method of moments (GMM) are used on a sample of 1507 banks in emerging markets in Asia for the 2008–17 period. The financial inclusion index is estimated using four sub-indices that can be classified into two groups: the penetration and utilisation of financial products and services. The researchers found that, across various scenarios, financial inclusion provides a positive and significant contribution to bank performance in the Asian region.

Feghali, Mora and Nassif (2021) examined the impact of financial inclusion, bank market structure financial stability with international evidence. Survey research was adopted in the study using comparable cross-country data available since 2011 surveying the demand for different financial services. Borrowing, savings, and payment were employed as proxies for financial inclusion. The researchers found that adverse effects on bank soundness from credit inclusion only. Furthermore, the researchers discovered the role of the bank market structure in affecting risk-taking incentives by banks. Also, a more competitive structure intensifies the adverse impact of credit inclusion on stability.

Kumar, Thrikawala, and Acharya (2021) examined the influence of financial inclusion on bank profitability in Japan using a sample of 122 banks for the period 2004–2018. They observed that branch contractions lower bank profitability in Japan, while the number of loan accounts and automated teller machines (ATMs) do not affect the profitability of banks. Vo and Nguyen (2021) assessed whether financial inclusion improve bank performance in some selected economies in Asia over the period 2008–2017. Using the GMM technique with an index of financial inclusion, the results revealed that bank performance is positively and significantly influenced by financial inclusion in the region.

Chinoda and Mashamba (2021) examined the interplay between financial inclusion, bank competition and economic growth in Africa. This study employed the pooled mean group estimation-based panel autoregression distribution lag approach from 2004 to 2018. A panel data analysis for 20 African countries was used. The study found a significant positive relationship between financial inclusion and economic growth in the long run. However, in the short run, economic growth significantly reduces financial inclusion. We also found that in the long-run bank competition reduces financial inclusion in line with the information hypothesis. However, in the short run the effect is significantly positive, consistent with the market power hypothesis.

Shihadeh (2021) evaluated the link between the metrics of financial inclusion and bank performance in Palestine over the period 2006–2016. Using a variety of panel methodologies, the researchers discovered that banking penetration tools, branch networks, and ATMs improve the performance of banks in Palestine. Jouini, Talha, and Obeid (2021) tested the influence of financial inclusion on bank performance in 11 Arab nations from 2013 to 2019. The research revealed no clear evidence that the distribution of ATMs and the number of bank branches significantly affect profit.

Eke and Ukinamemen (2021) examined the Impact of Electronic banking on customer service in Nigeria. Survey research method was adopted and questionnaire was distributed to selected bank staff and customers. Frequencies and percentages were used to analyse the data and ANOVA was used to test the hypothesis. The result of the analysis showed that customers have embraced electronic banking products despite the challenges. The result of the hypothesis test showed that there is prositive relationship between electronic banking and customer services in our banks. The study recommended among other things that banks should aggressively embark on enlightening their customers on electronic banking products.

Summary of Empirical Review and Gap Identified

From the review of past works, it was observed that there is a condition of mixed findings on the nexus between financial inclusion and bank performance. Evidences showing both positive, negative and no evidence. Furthermore, it was observed that there is paucity on studies in Nigeria on the impact of financial inclusion on banks performance. This gap identified was the motivation of the study. Thus, the purpose of this study is to

investigate the impact of financial inclusion on banks performance in Nigeria. For the purpose of this study, listed deposit money banks would be investigated.

Theoretical Review

This study is anchored on public goods theory. The public good theory of financial inclusion argues that the (i) delivery of formal financial services to the entire population and (ii) ensuring that there is unrestricted access to finance for everyone, should be treated as a public good for the benefit of all members of the population. As a public good, individuals cannot be excluded from using formal financial services and individuals cannot be excluded from gaining access to financial services. All individuals will enjoy basic financial services without paying for it. Access to financial services to one individual does not reduce its availability to others which means that all members of the population can be brought into the formal financial sector and everyone will be better off. Under this theory, all members of the population are beneficiaries of financial inclusion and nobody is left out. Under the public good theory, any individual or small business that open a formal bank account can be offered free debit cards, they can also use the ATM machines to perform transactions without being charged a transaction fee. Also, the suppliers of financial services such as financial institutions will have to bear the cost of offering financial services as a sunk-cost of doing banking business. Also, the government can grant subsidy to financial institutions to help them cope with any resulting cost problems that may arise from offering free financial services. A government can even offer a lump-sum cash deposit into the bank account of all citizens and make owning a formal account the only requirement for individuals to access the free deposits. This means that individuals who cannot pay their debts and who cannot meet their basic needs at the micro level will stand a chance to be economically empowered when financial inclusion is viewed as public good.

METHODOLGY

The ex-post facto research design was used in this study. The choice of an ex-post facto research design is justified by the fact that it prevents the researcher from altering the data and study results because the events that led to the design have already transpired and scientific data is readily available.

A sample of twelve (12) listed deposit money banks was selected out of all deposit money banks listed on the Nigeria stock Exchange from 2018-2022. The rationale for selecting this population and periods of the study was because prior studies have not investigated the selected target population. The justification for investigating the selected period was because to the best of the researcher's knowledge no studies have investigated it. The secondary data was carefully obtained from the annual reports and financial statements of listed deposit money banks in the Nigeria Exchange Group (NGX). Five years are covered by the data, from 2018 to 2022.

Method of Data Analysis

Utilizing both descriptive and inferential statistics, the study's data was examined. The standard deviation, mean, minimum, and maximum are among the descriptive statistics. The inferential statistic used to assess the study's hypotheses was the ordinary least squares regression. Diagnostic tests include the following: linearity (bivariate analysis – Pearson Product Moment correlation), multicollinearity (variance inflation factor test), linear correlation (Breusch-Godfrey Serial Correlation LM Test), normality (Histogram Normality Test), and constant residual error (Breusch-Pagan-Godfrey Heteroskedasticity Test). In order to determine whether to estimate our model using fixed effect panel regression or random effect panel regression, the Hausman Test was used (Studenmund, 2014).

Measurement of Variables

Table 3: Measurement of variables

	Variables	Measurement	Supporting Scholars
Bank Performance (Dependent**)**	a. Return of Asset b. Revenue	Net income/Total Asset	Shihadeh (2021) Saidu & Aifuwa (2020);
		Logarithm of the net revenue: from all income sources	
Financial Inclusion (independent)	Penetration of financial services.(a)Bank Branches (b) ATMs	the number of bank branches per 100,000 adults	Vo & Nguyen (2021)
		the number of ATMs per 100,000 people	Vo & Nguyen (2021)
	Usage of financial Services.(a)SMELoans	Logarithm of the amount of SME loans	Shihadeh (2021)
	(b) Online Banking	Equals 1 if a bank offers online banking, zero if something else	Shihadeh (2021)

Source: Author's Compilation, 2024

Model Specification

This study adapted the model of Shihadeh (2021) used in their study in examining the e relationship between financial inclusion indicators and bank performance in Palestine. The model was stated as;

In functional form;

Bank Performance = f(Financial Inclusion)…….……(i)

Bank Performance = f(Bank Branches, ATMS; SMEs Loans;)…..…… ……..(ii)

In econometric form;

$TOR = \beta_0 + \beta_1 BKB_{it} + \beta_2 ATM_{it} + \beta_3 SML_{it} + \varepsilon_{it}$ ……`….……...……..(viii)

$ROA = \beta_0 + \beta_1 BKB_{it} + \beta_2 ATM_{it} + \beta_3 SML_{it} + \varepsilon_{it}$ …….……...……..(ix)

Where;

TOR = Total Revenue

ROE = Return on Equity

BKB = Bank Branches;

ATM = Number of ATMs;

SML = SMEs Loans

A prior = $\beta_{1;}\ \beta_{2;}\ \beta_3;\ \beta_4 > 0$

Data Presentation, Interpretation And Discussion Descriptive Statistics

Table 4

Descriptive Statistics for Secondary data

	TOR	ROE	BKB	ATM	SML

Mean	5.2307	0.0907	5278.4	2251.2	151.02
Maximum	5.6166	0.3226	5437.00	4739.82	202.58
Minimum	4.8860	0.0017	4861.00	799.4	107.52
Std. Dev.	0.2297	0.0868	215.41	1241.56	41.82
Observations	60	60	60	60	60

Source: Author's computation, 2024

Table 4 above shows a descriptive statistic of variables of the secondary data used in the study. From the listed deposit money banks investigated, the total revenue (TOR) and return on equity (ROE) which was used to proxy financial performance had a means value of 5.2307 and 0.0907 respectively. Also, the standard deviation of both 0.2297 and 0.0868 exhibited considerable clustering around the mean. The means of the independent viariables, BKB, ATM, SML, stood at 5278.4, 2251.2, and 151.02, respectively. The standard deviation of the independent variables exhibited considerable clustering around the mean.

Table 5. Correlation Matrix for model one

	TOR	**BKB**	**ATM**	**SML**
TOR	1.0000			
BKB	0.1632	1.0000		
ATM	0.2354	0.1380	1.0000	
SML	0.0604	0.3236	0.0905	1.0000

Source: Author's computation, 2024

The results of the correlation analysis for model one is presented in Table 5. The correlation coefficients are mixed with all variables reporting positive coefficients BKB and TOR (0.1632); ATM and TOR (0.2354); SML and TOR (0.0604) and. The strength of relationship between variables measured by the Pearson product moment correlation showed that the association between the variables is relatively small and were below the threshold of 0.80, suggesting absence of the problem of multicollinearity in the predictor variables (Studenmund, 2000).

Table 6. Correlation Matrix for model two

	ROE	**BKB**	**ATM**	**SML**
ROE	1.000			
BKB	0.0617	1.0000		
ATM	0.1181	0.1380	1.0000	
SML	-0.1409	0.3236	0.0905	1.0000

Source: Author's computation, 2024

The results of the correlation analysis for model one is presented in Table 6. The correlation coefficients are mixed with some variables reporting positive coefficients BKB and ROE (0.0617); ATM and ROE (0.1181); SML and ROE (-0.1409). The strength of relationship between variables measured by the Pearson product moment correlation showed that the association between the variables is relatively small and were below the threshold of 0.80, suggesting absence of the problem of multicollinearity in the predictor variables (Studenmund, 2000).

Diagnostics test

Diagnostics test was conducted in order to fulfil the assumptions of regression. Some of the diagnostics test we did was autocorrelation test, serial correlations test, constant residual error (Heteroskedasticity), multicollinearity, Ramsey, Husman, normality and model misspecification test. All the test conducted yielded positive results.

Table 12: Panel Least Squares Regression

	Dependent variable: Total Revenue (TOR) Random Effect				**Dependent variable: Return on Equity (ROE) Random Effect**			
	B	**S.E**	**t-Stat.**	**Prob.**	***B***	**S.E**	**t-Stat.**	**Prob.**
Constant	5.6927	2.2335	2.5488	0.0146	2.4912	0.8555	2.9118	0.0052
BKB	5.9505	4.8305	1.2309	0.2252	2.6505	4.4205	0.5992	0.5516
ATM	0.0002	8.4005	1.8651	0.0692	0.0001	4.6205	2.8630	0.0060**
SML	-0.0008	0.0004	-2.0082	0.0511	-0.0004	0.0002	-1.8153	0.0751
R-squared		0.9279				0.7844		
Adjusted R-squared		0.8988				0.5899		
S.E.		0.0731				0.0777		
F-statistics		31.8155				14.3844		
Prob. (F-statistics)		0.0001				0.0060		

Source: Author's computation, 2024

The results of the Panel Least Square as presented in Table 12 shows that there exist a significant relationship between financial inclusion and performance of deposit money banks in Nigeria, F Statistics = 31.8155, p = 0.0001 < 0.05 and F Statistics = 14.3844, p = 0.0060 < 0.05. Furthermore, the summary statistics also shows Adjusted coefficient of determination (R-squared) of 0.8988 and 0.5899, for both models respectively, implying that over 90% and 59% of the systematic variations in dependent variable (financial performance of deposit money banks in Nigeria) were explained by the independent variables used in the models, while about 10% and 41% were caused by variables not depicted in the models.

The result from model one shows that none of the independent variables have significant impact on performance of deposit money banks in Nigeria. However the result from model two shows that the penetration of financial services via ATMs has positive and significant effect on bank performance in Nigeria; while the usage of financial services via online banking has negative and significant effect on bank performance in Nigeria.

Test of Hypotheses

The hypotheses of the study were stated in null form. The result from the model two was the baseline model of the study.

Hypothesis One

H_{01}: The penetration of financial services through bank branches has no significant impact on bank performance in Nigeria

The result from the baseline model (model 2) shows that the penetration of financial services via bank branches has no significant impact on bank performance in Nigeria, $T(1, 60) = 0.5992$, $\beta_1 = 2.6505$, $p = 0.5516 > 0.05$. Our study therefore failed to reject the null hypothesis that the penetration of financial services via bank branches has no significant impact on bank performance in Nigeria.

Hypothesis Two

H_{02}: The penetration of financial services via ATMs has no significant effect on bank performance in Nigeria
The result from the baseline model revealed that the penetration of financial services via ATMs has positive and significant effect on bank performance in Nigeria, $T(1, 60) = 2.8630$, $\beta_2 = 0.0001$, $p = 0.0060 < 0.05$. Our study therefore failed to accept the null hypothesis of the study that the penetration of financial services via ATMs has no significant effect on bank performance in Nigeria

Hypothesis Three

H_{03}: The usage of financial services via SMEs loans has no significant impact on bank performance in Nigeria
The result from the baseline model revealed that the usage of financial services via SMEs loans has no significant impact on bank performance in Nigeria, $T(1, 60) = -1.8153$, $\beta_3 = -0.0004$, $p = 0.0751 > 0.05$. The relationship was negative but not statistically significant.

Discussion of Findings

The broad objective of this study was to examine the impact of financial inclusion on banks performance in Nigeria. The specific objectives was to ascertain the penetration of financial services via bank branches on bank performance in Nigeria; determine the effect of the penetration of financial services via ATMs on bank performance in Nigeria; examine the impact of the usage of financial services via SMEs loans on bank performance in Nigeria; and evaluate the effect of the usage of financial services via online banking on bank performance in Nigeria. The relationship between financial inclusion and performance of banks was controlled with bank size and bank age.

The result from the panel least squares revealed that the penetration of financial services via bank branches has no significant impact on bank performance in Nigeria. The finding is not consistent with the works of Yakubu and Musah (2022) who found negative relationship between financial inclusion and performance of banks. Ozili, Lay and Syed (2022) found positive influence of bank branches on financial performance. Jouini, Talha, and Obeid (2021) found no relationship between bank branches and financial performance of banks.

Secondly, the result from the panel least squares revealed that the penetration of financial services via ATMs has positive and significant effect on bank performance in Nigeria. This finding is in dissonance in tandem with the work of Chinoda and Kapingura (2023); & Hermuningsih, Sari and Rahmawati (2022); Shihadeh et al. (2018). However, in contrast to the work of Yakubu and Musah (2022) who found negative relationship between financial inclusion and performance of banks. Ozili, Lay and Syed (2022) found negative impact of ATM usage on financial performance of banks. Kumar, Thrikawala, and Acharya (2021); Alyi et al (2021) found that ATM usage do not have an influence on the financial performance of banks.

Thirdly, the result revealed that the usage of financial services via SMEs loans has no significant impact on bank performance in Nigeria. The finding is not consistent with the works of Yakubu and Musah (2022) who found negative relationship between financial inclusion and performance of banks. Kumar, Thrikawala, and Acharya (2021); Shihadeh et al. (2018) found that SMEs loan do not have affect the financial performance of banks.

Summary of Findings

The broad objective of this study was to examine the impact of financial inclusion on banks performance in Nigeria. The specific objectives was to ascertain the penetration of financial services via bank branches on bank performance in Nigeria; determine the effect of the penetration of financial services via ATMs on bank performance in Nigeria; examine the impact of the usage of financial services via SMEs loans on bank

performance in Nigeria; and evaluate the effect of the usage of financial services via online banking on bank performance in Nigeria. From the result of the analysis of the study, the following was found.

1. The penetration of financial services via bank branches has no significant impact on bank performance in Nigeria;
2. The penetration of financial services via ATMs has positive and significant effect on bank performance in Nigeria;
3. The usage of financial services via SMEs loans has no significant impact on bank performance in Nigeria

Conclusion

Based on the findings of the study, the study concluded that financial inclusion has mixed influence on financial performance of banks in Nigeria. The various means of financial inclusion have a unique impact on financial performance of banks in Nigeria.

Recommendation

Based on the finding of this study we recommended the following;

1. Banks should increase their presence in term of branches in the rural areas to drive full financial inclusion which would in the long-run improve the financial performance of banks;
2. The current drive of digital financial inclusion via ATM should be sustained to allow access of financial services to the unbanked population;
3. The current volume of SMEs loans should be improved upon to drive financial inclusion via loan services; and
4. Banks should do more on cyber security to boost the usage of online banking services in driving digital financial inclusion.

Reference

Al-Chahadah, A. R., El Refae, G. A., & Qasim, A. (2020). The impact of financial inclusion on bank performance: The case of Jordan. *International Journal of Economics and Business Research, 20*(4), 483–496.

Andrianaivo, M., & Kpodar, K. (2011). ICT, financial inclusion, and growth: Evidence from African countries. *IMF Working Papers*.

Backjena, S. N., & Gundimeda, H. (2018). Self-help group bank linkage model and financial inclusion in India. Retrieved February 5, 2024, from https://www.//skoch.in/fir/role%20%financial%20%inclusion%20

Backjena, B., Mala, G., & Vasanthi, O. L. (2016). The impact of electronic banking on financial inclusion in Nigeria. *Nigerian Journal of Industrial and Business Management, 9*, 1409-1422.

Bhattacharyya, A., & Khan, M. (2021). Financial inclusion, corporate social responsibility and firm performance – analysis of interactive relationship. *Meditari Accountancy Research*. (In press).

Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2015). Financial and legal constraints to growth: Does firm size matter? *Journal of Finance, 60*(1), 137–177.

Chatterjee, A., & Anand, N. (2017). Financial inclusion, information and communication technology diffusion and economic growth: A panel data analysis. *MSE Working Paper 165*, Madras School of Economics, Chennai. https://www.mse.ac.in

Chibba, M. (2009). Financial inclusion, poverty reduction and the millennium development goals. *The European Journal of Development Research, 21*(2), 213–230.

Chinoda, T., & Mashamba, T. (2021). Financial inclusion, bank competition and economic growth in Africa. *Journal of Economic and Financial Sciences, 14*(1), 64-69. https://doi.org/10.4102/jef.v14i1.649

Chinoda, T., & Kapingura, F. M. (2023). The impact of digital financial inclusion and bank competition on bank stability in sub-Saharan Africa. *Economies, 11*(15), 1-12. https://doi.org/10.3390/economies11010015

Chinoda, T., & Akande, J. O. (2019). Financial inclusion, mobile phone diffusion, and economic growth; evidence from Africa. *International Journal of Economics and Financial Issues, 9*(5), 10-19.

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). The global findex database: Measuring financial inclusion and the fintech revolution. *The World Bank*.

Eke, R. I., & Ukinamemen, A. A. (2021). Impact of electronic banking on customer service in Nigeria. *SAARJ Journal of Banking and Insurance Research, 10*(2), 235-258.

Feghali, K., Mora, N., & Nassif, P. (2021). Financial inclusion, bank market structure, and financial stability: International evidence. *The Quarterly Review of Economics and Finance, 80*, 236–257.

García, M. J. R., & José, M. (2016). Can financial inclusion and financial stability go hand in hand? *Economic Issues, 21*(2), 81–103.

Hermuningsih, S., Sari, P. P., & Rahmawati, A. D. (2023). The moderating role of bank size: Influence of fintech, liquidity on financial performance. *Jurnal Siasat Bisnis, 27*(1), 106–117.

Kim, D. W., Yu, J. S., & Hassan, M. K. (2017). Financial inclusion and economic growth in OIC countries. *Research in International Business and Finance, 43*, 1–14.

Kooli, C., Shanikat, M., & Kanakriyah, R. (2022). Towards a new model of productive Islamic financial mechanisms. *International Journal of Business Performance Management, 23*, 17–33.

Kumar, V., Thrikawala, S., & Acharya, S. (2021). Financial inclusion and bank profitability: Evidence from a developed market. *Global Finance Journal*, 1–12.

Morgan, P., & Pontines, V. (2014). Financial stability and financial inclusion. *Asian Development Bank Institute*, Tokyo.

Ndlovu, I., & Ndlovu, M. (2017). Mobile banking, the future to rural financial inclusion: A case study of Zimbabwe. *Journal of Humanities and Social Services, 9*(4), 70-75.

Oyelami, L. O., Saibu, O. M., & Adekunle, B. S. (2017). Determinants of financial inclusion in Sub-Sahara African countries. *Covenant Journal of Business and Social Sciences, 8*, 104–116.

Ozili, P. K., Lay, S. H., & Syed, A. A. (2022). Impact of financial inclusion on economic growth in secular and religious countries. *Journal of Financial Regulation and Compliance*, *8*, 12-19.

Peric, K. (2015). Digital financial inclusion. *Journal of Payments Strategy & Systems, 9*, 212–214.

Pham, M. T., Nguyen, V. H., & Ngo, M. N. (2019). The impact of financial inclusion on income inequality: Case study in Europe. *Economic Insights – Trends and Challenges, 11*(54), 33-45.

Pilloff, S. J. (1996). Performance changes and shareholder wealth creation associated with mergers of publicly traded banking institutions. *Journal of Money, Credit and Banking, 28*(3), 294-310.

Saidu, M., & Aifuwa, H. O. (2020). Board characteristics and audit quality: The moderating role of gender diversity. *International Journal of Business Research, 8*(1), 144-155.

Sedera, R. M. H., Risfandy, T., & Futri, I. N. (2022). Financial inclusion and bank profitability: Evidence from Indonesia. *Journal of Accounting and Investment, 23*(3), 398-412.

Shihadeh, F. H., Hannon, A. T., Guan, J., Haq, I. U., & Wang, X. (2018). Does financial inclusion improve the banks' performance? Evidence from Jordan. In J. W. Kensinger (Ed.), *Global tensions in financial markets* (Vol. 34, pp. 117-138). Emerald Publishing Limited. https://doi.org/10.1108/S0196-382120170000034005

Shihadeh, F. (2021). Financial inclusion and banks' performance: Evidence from Palestine. *Investment Management and Financial Innovation, 18*(1), 126–138.

Soludo, C. C. (2004). Consolidating the Nigerian banking industry to meet development challenges of the 21st century. *CBN Headquarter, Bankers' Committee*, Abuja.

Vo, D. H., & Nguyen, N. T. (2021). Does financial inclusion improve bank performance in the Asian region? *Asian-Pacific Economic Literature, 35*(2), 123–135.

World Bank. (2020). World bank list of economies. Retrieved February 10, 2024, from http://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

Wysokińska, Z. (2021). A review of the impact of the digital transformation on the global and European economy. *Comparative Economic Research, 24*, 75–92.

Yakubu, I. N., & Musah, A. (2022). The nexus between financial inclusion and bank profitability: A dynamic panel approach. *Journal of Sustainable Finance & Investment, 4*, 10-19. https://doi.org/10.1080/20430795.2022.2105792