Innovations

Bolstering the Impact of Financial Inclusion on the Performance of Selected Deposit Money Banks in Nigeria

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Abstract : *This study investigates the impact of financial inclusion on the financial performance of deposit money banks in Nigeria. The problem statement arises from the need to understand how various dimensions of financial inclusion, including loans to customers, deposits, bank branches, mobile banking, and agency banking, influence the returns on assets (ROA) of deposit money banks in Nigeria. Drawing on theories of financial intermediation and inclusive growth, the research adopts a quantitative approach, employing panel EGLS regression analysis to analyze data collected from ten deposit money banks over an eleven-year period (2011-2022). The findings reveal significant positive relationships between loans to customers, deposits, bank branches, mobile banking, agency banking, and ROA, highlighting the importance of financial inclusion in enhancing the performance of deposit money banks. The study concludes that fostering financial inclusion through targeted policies and initiatives can contribute to the resilience, stability, and sustainability of the banking sector in Nigeria. The implications underscore the importance of promoting inclusive financial systems to foster economic growth, reduce poverty, and enhance social welfare. As a recommendation, policymakers should prioritize measures aimed at expanding access to financial services, leveraging technology, enhancing financial literacy, and strengthening regulatory frameworks to facilitate greater financial inclusion and deepen the impact on the broader economy.*

Keywords: *Financial Inclusion, Financial Performance, Returns on Assets, Deposit Money Banks*

1. Introduction

Deposit Money Banks (DMBs) have been pivotal in shaping the economic and financial landscape of Nigeria through their intermediation role (Ezike, 2018). Regulated by the Central Bank of Nigeria (CBN), these banks adhere to standards of operation aimed at fostering growth and stability in the financial sector. Nigeria's banking history dates back to the late 19th century with the establishment of the Africa Banking Corporation and subsequent banks, leading to the formation of the Central Bank of Nigeria in 1959 (Obademi, 2017; Shirabani & Keshav, 2020). The regulatory framework evolved over time, culminating in the consolidation period of 2004, which significantly reduced the number of DMBs, showcasing the regulatory authority's ability to reshape the banking landscape (CBN Bulletin, 2010).

The performance of DMBs is intricately linked to regulatory oversight and their ability to innovate services (Chicalipal, 2017; Babajide, et al, 2016). Increased banking services uptake by individuals and small businesses can drive bank revenue and profitability while fostering financial inclusion, especially in remote areas (Ezike, 2018). Key performance metrics like Return on Asset, Return on Equity, and cost-to-income ratio gauge bank performance, with financial intermediation functions serving as efficiency indicators (Akhiser et al., 2015; Ajakaiye & Olowookere, 2018). The United Nations Capital Development Fund (UNCDF) has also been instrumental in promoting financial inclusion since the late 1990s, shifting focus towards broader access to financial services (UNCDF, 2015; Sarma, 2018; Chibba, 2019).

Financial inclusion, defined as access to financial services regardless of income or social status, is crucial for economic growth and poverty reduction (Debry, 2021). Following the global financial crisis, many countries, including Nigeria, endorsed financial inclusion objectives (EFInA, 2020). However, the impact of financial inclusion on bank performance remains underexplored. The journey towards financial inclusion has seen progress, yet challenges persist, with only a fraction of the population benefiting from microfinance initiatives (EFInA, 2018;

Nuzzo & Piermatti, 2019). Despite concerted efforts to promote financial inclusion, several challenges persist within deposit money banks (DMBs) in Nigeria.

According to the Enhancing Financial Innovation and Access (EFInA) report of 2020, despite a slight decrease in the percentage of financially excluded adults between 2018 and 2020, the absolute number of financially excluded individuals increased from 36.6 million to 38.1 million due to population growth outpacing financial inclusion rates. Moreover, data from the revised National Financial Inclusion Strategy (NFIS) in 2018 revealed that significant proportions of the population, including 53.5% of males, 46.5% of females, and 52.5% of rural dwellers, remained excluded from formal financial services in 2016. Challenges such as a lack of unique customer identification, data constraints, and uneven geographical distribution of financial services impede progress towards achieving financial inclusion targets. Despite initiatives like the NFIS and technological advancements like the e-naira, these challenges underscore the need for comprehensive strategies to address systemic barriers and ensure equitable access to financial services across Nigeria's diverse population.

Recent initiatives like Nigeria's e-naira and the National Financial Inclusion Strategy (NFIS) highlight the government's commitment to enhancing financial inclusion (CBN Regulatory guideline, 2021). NFIS revisions aimed to reduce financial exclusion and improve access to financial services, particularly for marginalized groups (EFinA, 2018; Shirabani & Keshav, 2020). Despite efforts, challenges like data constraints hinder achieving targets, underlining the complexity of financial inclusion (EFinA, 2018; Sarma, 2018; Roberts& Amit, 2020). This study seeks to explore the relationship between financial inclusion and DMB performance in Nigeria amidst evolving regulatory landscapes and technological advancements.

1.1 Problem Statement

Bolstering the impact of financial inclusion on the performance of selected Deposit Money Banks (DMBs) in Nigeria represents a critical challenge with far-reaching implications for economic development and social equity (Peterson, 2021; Wayne et al. 2020; Williams, et al. 2018). Despite concerted efforts to expand financial access, significant segments of the Nigerian population remain excluded from formal financial services, as evidenced by the 2020 EFInA report highlighting persistent exclusion rates. The interconnectedness between financial inclusion and bank performance underscores the urgency of addressing systemic barriers that hinder equitable access to banking services. Moreover, with the emergence of digital financial solutions like the e-naira, there exists a pressing need to understand how such innovations can be leveraged to enhance the operational efficiency and profitability of DMBs while advancing financial inclusion objectives.

The inadequacy of credit facilities for individuals and businesses in Nigeria poses a significant obstacle to achieving more inclusive financial services (Babajide, et al, 2016; Ajakaiye & Olowookere, 2018). This challenge is underscored by stark statistics, as indicated by the World Bank Report of 2018, revealing that only approximately 20% of Nigerians have access to formal credit. Furthermore, data from the Credit Bureau Association of Nigeria (CBAN) in 2020 discloses that a mere 4% of Micro, Small, and Medium Enterprises (MSMEs) in Nigeria have access to credit, a stark contrast to the 32% and 46% access rates observed in South Africa in 2014 and 2018, respectively (World Bank Report, 2020). The evident disparities in credit accessibility pose a significant impediment to the broader implementation of inclusive financial services in Nigeria, necessitating focused research to understand and address the factors limiting credit availability and financial inclusion. This multifaceted problem demands interdisciplinary research efforts to unpack the complex interplay between regulatory frameworks, technological innovations, and socio-economic factors shaping financial inclusion outcomes in Nigeria's banking sector. Based on the problem statement, the following research questions were formulated for this study:

i. What is the relationship between customers' loans and the performance (i.e. return on assets) of deposit money banks in Nigeria?

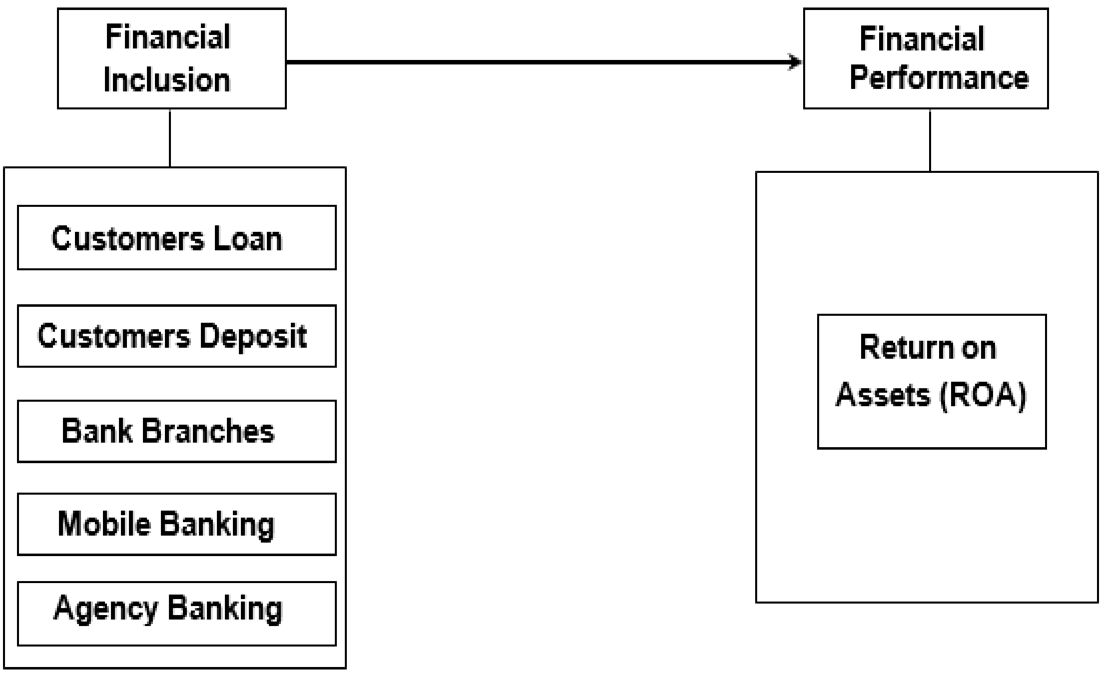
ii. How does the relationship between customers' deposits and the performance (i.e. return on assets) of deposit money banks in Nigeria manifest?

iii. What is the impact of bank branch spread on the performance (i.e. return on assets) of deposit money banks in Nigeria?

iv. How does the provision of online banking services influence the performance (i.e. return on assets) of deposit money banks in Nigeria?

v. What is the association between the availability of agent banking services and the performance (i.e. return on assets) of deposit money banks in Nigeria?

This study employs a schematic model, depicted in Figure 1, to visually represent the complex relationships and interdependencies among the variables under investigation. The schematic model offers a structured framework for analyzing the dynamics between financial inclusion initiatives, deposit money banks' performance, and the key factors influencing their sustainable operation in Nigeria (See Figure 1).



Adopted: Appah and Tebepah (2023)

2. Literature Review

2.1 Financial Inclusion

Accroding to Allen, et al. (2016), Chakravarty & Pal (2017), Demirguc-Kunt & Klapper (2019) and Chibba (2019), financial inclusion encompasses various aspects such as access to banking services, credit facilities, savings mechanisms, insurance, and digital payment platforms. As highlighted by Abdulrazaq, Adesola & John (2019), the goal of financial inclusion is to create a more inclusive financial ecosystem where everyone has access to the tools and resources needed to manage their finances, invest in their future, and mitigate financial risks.

Financial inclusion proxies, including customers' loans, deposits, bank branch spread, provision of online banking services, and availability of agent banking services, play pivotal roles in assessing the performance and sustainability of deposit money banks in Nigeria. Customers' loans represent the credit extended by banks to borrowers, reflecting their confidence in the economy and financial system(Beck, et al. 2016; Chakravarty, 2017). Chen, Feng, & Wang (2018) highlight the importance of loans in assessing financial inclusion's impact on non-performing loans, underlining its significance in bank risk management. Customers' deposits, as emphasized by Dal-Won Kim, Jung, & Kabir (2018), signify the level of trust and engagement within the banking sector, affecting liquidity and capital adequacy.

Bank branch spread, discussed by Frame & White (2016), denotes accessibility and outreach, crucial for enhancing inclusion by bringing banking services closer to underserved communities. The provision of online banking services, noted by Orange & Ondabu (2018), reflects technological advancement facilitating access to financial services, but also poses challenges in cybersecurity and digital literacy. Lastly, the availability of agent banking services, emphasized by Shihadeh, Hannon, Guan, Haq, & Wang (2018), extends banking reach in remote areas, yet requires regulatory frameworks and infrastructure development. These proxies collectively shape the landscape of financial inclusion, each presenting opportunities and challenges in fostering sustainable banking practices in Nigeria.

Dimensions of Financial Inclusion:

inclusion is gauged through various metrics, reflecting the diverse focuses of different studies (Demirguc-Kunt, et al. 2017; Chakravarty & Pal, 2017; Roberts& Amit, 2020). Among the commonly used indicators is the count of bank accounts per 1000 adult individuals, alongside metrics such as the number of bank branches and ATMs per million people, as well as the volume of bank credit, deposits, and loans granted to micro, small, and medium enterprises (Kabakova & Plakenkov, 2018; Peterson, 2021).

Loans granted to customers: This encompass the total loans disbursed by banks, pivotal in analyzing the bank's funding strategy, where funding sources vary between customer deposits and wholesale markets (Puspitasari et al., 2021). Lending constitutes a primary revenue source for banks, underpinning profitability through interest rate spreads (Peterson, 2021). Al-Hamad et al. (2021) further elucidate that deposit money banks globally rely on lending activities to thrive, with the ability to mobilize deposits intricately linked to the volume of credit extended to customers.

Deposits with Banks: Deposits with banks represent the aggregate funds held within bank accounts, crucial for optimal investment utilization, thus positively influencing financial performance (Chibba, 2019; Qamruzzaman & Wei, 2019). Choudhry (2011) delineates deposits as cash holdings recorded in banks' books, regarded as confidential information reflecting depositors' financial standing. The significance of deposits lies in their pivotal role as the primary source of funds for banks, constituting a major portion of total liabilities and offering a low-cost source of funds (Mehrotra & Yetman, 2016; Akhtar et al., 2017). Deposits play a crucial role as they represent the lifeblood of banks, serving as their primary source of funds. Often comprising over 90% of total liabilities, deposits are characterized by their cost-effectiveness and represent one of the most abundant sources of funding available to banks.

Bank Branches Spread: Historically, Nigerian banks predominantly concentrated their branch networks in urban centers, neglecting rural areas amid a period of financial exclusion (Onaolapo, 2015; Beck, Demirguc-kunt & Maksimovic, 2016). Babajide, Adegboye and Omonhkanlen (2016) argued that some banks experienced diminished financial performance during this phase, dissuading them from expanding into rural territories. However, the evolving landscape of financial inclusion necessitates broader branch networks across diverse geographical regions. The pivotal inquiry revolves around whether branch expansion correlates with enhanced financial inclusion and improved financial performance. While branching out to rural locales aims to grant customers access to new services unattainable through agents or mobile banking, past apprehensions stemmed from cost considerations. Therefore, scrutinizing the impact of branch dispersion on banks' financial performance encompasses evaluating variables like branch count, geographic distribution, transaction volume fluctuations, and operational costs.

Mobile Banking: The emergence of mobile banking in Nigeria over the past five years has revolutionized the financial services landscape, notably bridging gaps in rural access (Appah & Tebepah, 2017; Demirguc-Kunt & Klapper, 2019). Ajakaiye and Olowookere (2018) added that the exponential expansion of mobile banking services underscores its effectiveness in reaching previously excluded rural populations. Mobile money facilities empower both banked and unbanked subscribers to deposit funds, transfer value seamlessly, and convert it into cash easily. This innovation, bolstered by enabling technologies, extends the outreach of financial service providers, potentially benefiting deposit money banks and SMEs. Particularly, SMEs in Nigeria leverage mobile banking to surmount financial hurdles, enhancing their access to funds and, consequently, their financial performance.

Agents Banking: Agent banking represents a groundbreaking approach to delivering financial services to the masses, significantly increasing accessibility across Nigeria (Appah & Tebepah, 2017; Demirguc-Kunt & Klapper,2019). Although agents facilitate person-to-person transactions and deliver essential financial products, their impact on overall financial inclusion and banks' performance remains underexplored. While agents primarily execute core banking functions, their role in expanding access to new financial services warrants scrutiny. Consequently, evaluating the influence of agent banking on financial performance necessitates a multifaceted analysis encompassing various subvariables. Despite uncertainties, agent banking initiatives have contributed to broadening financial inclusion, particularly among previously underserved populations.

2.2 Bank Performance

Performance in the context of deposit money banks pertains to the ability of these financial institutions to maintain and enhance their operational efficiency, profitability, and long-term viability while simultaneously fulfilling their social responsibilities and contributing to economic growth (Dermirguc-kunt & Singer,2017; Saleh, et al. 2022). Performance, in the context of deposit money banks, encapsulates their ability to efficiently utilize resources and generate returns for shareholders while fulfilling their financial intermediation role in the economy. One key proxy for financial performance is return on assets (ROA), which measures the profitability of banks relative to their total assets. ROA serves as a crucial metric in evaluating the effectiveness of banks in converting assets into profits and is indicative of their operational efficiency and risk management practices. As highlighted by Kolapo, Ayeni, & Ojo (2017), ROA provides insights into banks' ability to generate income from their asset base and is essential for assessing their long-term sustainability and competitiveness in the banking industry. Higher ROA values signify better utilization of resources and enhanced profitability, reflecting positively on banks' overall performance and financial health. Therefore, ROA serves as a vital indicator for evaluating the effectiveness and efficiency of deposit money banks in Nigeria and their contribution to sustainable economic growth and development.

Return on assets (ROA)

Return on assets (ROA) serves as a crucial metric indicating a company's profitability concerning its total assets (Bashari & Mohammed, 2019). Represented as a percentage, ROA offers insight into how effectively a company's management utilizes its assets to generate earnings. This measure proves valuable for managers, investors, and analysts, enabling them to gauge the efficiency of a company's asset management strategy (Ahamed, 2017; Murekefu & Ouma, 2012; Rajan 2018). Essentially, ROA illustrates the return earned from invested capital, with higher ROA values indicating more efficient capital utilization. However, the interpretation of ROA varies across industries due to differences in asset utilization practices, emphasizing the importance of industry-specific comparisons for meaningful analysis (Ahamed, 2017; Peterson, 2021).

ROA, calculated as net income divided by total assets, elucidates the proportion of profit a company generates relative to its overall resources (Murekefu & Ouma, 2012; Nzyuko & Jagongo, 2017). This financial ratio, derived from the company's income statement, offers a clear depiction of post-tax profits. Investors rely on ROA as a key performance indicator, as it provides insights into a company's ability to convert invested capital into net income effectively. In essence, a higher ROA signifies enhanced profitability achieved through efficient asset management practices (Bashari & Mohammed, 2019). Thus, ROA serves as a vital tool for evaluating a company's financial performance and strategic effectiveness, guiding investment decisions and strategic planning processes.

2.3 Deposit Money Banks

Deposit money banks, as elucidated by Aina and Oluyombo (2016), are financial institutions that primarily accept deposits from customers and provide various banking services, including loans, mortgages, and investment products. Deposit money banks play a vital role in the financial system by acting as intermediaries between depositors and borrowers. They facilitate the movement of funds within the economy, which contributes to economic growth and development. These banks provide various services, such as loans, mortgages, investment products, and transactional services, among others. They play a crucial role in mobilizing savings, allocating capital, managing risks, and supporting economic activities. Summarily, Deposit money banks operate under regulatory oversight by central banks and other regulatory authorities to ensure the safety and stability of the banking system.

2.2 Development of Research Questions

The relationship between customers' loans and the performanceof deposit money banks in Nigeria is a critical aspect of financial inclusion and banking sustainability. Customers' loans represent a fundamental component of banks' assets and significantly impact profitability and overall performance. Empirical studies by Chauvet and Jacolin (2017) have highlighted the importance of bank concentration and firm performance, indicating a nuanced relationship that influences financial outcomes. Moreover, research by Nkuma et al. (2018) emphasizes the role of commercial banks in facilitating financial inclusion, underscoring the importance of understanding how customers' loans impact the financial performance of banks within specific contexts. Examining this relationship provides insights into the effectiveness of financial inclusion initiatives and their contribution to the sustainable growth of deposit money banks. Based on the aforementioned, the first research question is formulated:

Research Question 1: What is the relationship between customers' loans and the performance (i.e. return on assets) of deposit money banks in Nigeria?

Understanding the dynamics of financial inclusion and banking sustainability in Nigeria requires a thorough examination of the relationship between customers' deposits and the performance, particularly the return on assets (ROA), of deposit money banks. This analysis is crucial for gaining insights into the factors that impact the success and stability of the banking sector, as well as the effectiveness of measures aimed at promoting financial inclusion. Customers' deposits represent a primary source of funding for banks, influencing their lending activities, investment decisions, and overall financial health. Studies by Mostak et al. (2019) and Beck, Demirguc-kunt and Peria (2018) have demonstrated the positive impact of financial inclusion on banking stability, underscoring the importance of analyzing the relationship between deposits and bank performance. Additionally, research by Lukman et al. (2020) emphasizes the significance of MSMEs and financial inclusion in Nigeria. By exploring the intricate connection between customers' deposits and bank performance, policymakers and stakeholders can devise strategies to foster greater financial inclusion and sustainable growth in the banking sector. These arguments formed the basis for the second research question in our study:

Research Question 2: How does customers' deposits impact the performance (i.e. return on assets) of deposit money banks in Nigeria?

The impact of bank branch spread on the performance, particularly the return on assets (ROA), of deposit money banks in Nigeria is a critical aspect of financial inclusion and banking efficiency. Bank branch spread, which refers to the distribution and accessibility of bank branches across different regions, directly influences the reach and accessibility of banking services to the population. Studies such as those by Ojong et al. (2015) have highlighted the pivotal role of deposit money banks in fostering the growth of SMEs in local communities, emphasizing the importance of branch spread in facilitating access to financial services. Furthermore, research by Nkuma et al. (2018) underscores the contribution of commercial banks to financial inclusion in Malawi, shedding light on the significance of branch spread in reaching underserved areas. By examining the impact of bank branch spread on bank performance, policymakers and stakeholders can assess the effectiveness of branch expansion strategies in enhancing financial inclusion and promoting economic development. Based on the aforementioned, the third research question is formulated:

Research Question 3: How does the level of access to formal credit influence the performance of Selected Deposit Money Banks in Nigeria?

The fourth research question delves into the intricate relationship between the provision of online banking services and the performance, particularly the return on assets (ROA), of deposit money banks in Nigeria. Online banking services have become increasingly pivotal in modern banking operations, facilitating convenient access to financial services and transactions for customers. Empirical evidence from studies such as that by Okon and Amaegberi (2018) underscores the significant impact of mobile banking transactions on bank profitability in Nigeria, indicating the transformative role of digital channels in enhancing banking operations and customer engagement. Additionally, research by Frame and White (2016) highlights the importance of technological advancements in promoting financial inclusion and the diffusion of banking services. By examining the influence of online banking provision on bank performance metrics like ROA, stakeholders gain valuable insights into the effectiveness of digitalization strategies in driving operational efficiency and customer satisfaction. Understanding these dynamics is crucial for fostering inclusive financial growth and sustainability in Nigeria's banking sector. Based on the aforementioned, the fourth research question is formulated:

Research Question 4: What is the impact of the utilization of digital payment channels on the performance of Selected Deposit Money Banks in Nigeria?

The fifth research question explores the correlation between the availability of agent banking services and the performance, specifically the return on assets (ROA), of deposit money banks in Nigeria. Agent banking services have emerged as a crucial mechanism for extending financial services to underserved communities, enabling customers to conduct basic banking transactions through authorized agents in remote areas where traditional bank branches are limited. Studies such as that by Ojong, Arikpo, and Anthony (2015) and Chakravarty and Pal(2019) underscore the pivotal role of deposit money banks in fostering the growth of small and medium enterprises (SMEs) in local communities, highlighting the potential of agent banking to enhance financial inclusion and stimulate economic development. Additionally, research by Nkuma et al. (2018) emphasizes the significance of commercial banks in promoting financial inclusion in Malawi, underscoring the role of innovative banking models like agent banking in reaching unbanked populations. By investigating the association between agent banking availability and bank performance metrics like ROA, stakeholders gain insights into the effectiveness of branchless banking strategies in driving profitability and expanding market reach. Understanding these dynamics is crucial for devising sustainable financial inclusion strategies tailored to Nigeria's diverse socio-economic landscape. Based on the aforementioned, the fifth research question is formulated:

Research Question 5: What is the impact of the utilization of digital payment channels on the performance of Selected Deposit Money Banks in Nigeria?

2.3 Theoretical Justifications

In the context of bolstering the impact of financial inclusion on the performance of selected deposit money banks in Nigeria, two relevant theories that can be explored are the Financial Intermediation Theory and the Institutional Theory. Initially, Financial Intermediation Theory suggests that banks play a crucial role as intermediaries between savers and borrowers, thereby facilitating economic growth by efficiently allocating capital. In Nigeria, where financial inclusion initiatives aim to broaden access to banking services, this theory underscores the importance of deposit money banks in mobilizing savings and channeling them into productive investments (Demirguc-Kunt & Klapper, 2019; Duvendack & Modar. 2020; Jeletal, Arthurla & Saroja, 2021). However, a weakness of this theory lies in its limited focus on the institutional and regulatory environments within which banks operate, neglecting the broader socio-economic factors that influence financial inclusion dynamics.

To address this limitation, the Institutional Theory offers insights into the contextual factors shaping banking practices and policies. In Nigeria, where regulatory frameworks and institutional arrangements significantly impact financial inclusion efforts, this theory emphasizes the role of formal rules, norms, and practices governing banking operations (Claessens, 2016; Han & Melecky, 2019). By considering institutional factors such as legal frameworks, governance structures, and cultural norms, deposit money banks can better understand the challenges and opportunities associated with promoting financial inclusion. For instance, regulatory reforms aimed at enhancing consumer protection and promoting transparency can foster trust in the banking system, thereby encouraging greater participation in formal financial services (Rajan, 2018; Ghosh & Bhattacharya, 2019). Therefore, by integrating insights from the Institutional Theory, deposit money banks can develop more contextually relevant strategies to enhance financial inclusion and improve their overall performance in Nigeria's dynamic banking landscape.

2.4 Empirical Review

In a study conducted by Fadi (2021), the relationship between financial inclusion indicators and bank performance in Palestine was examined. The research encompassed all 15 banks operating in the region from 2006 to 2016, using panel data comprising 162 observations. The study analyzed variables such as SME loan volumes, banking outreach, ATM and branch counts, and online banking services. The findings revealed that instruments facilitating banking outreach, such as branches and ATMs, had a positive impact on bank performance. Despite a decrease in lending to SMEs, this aspect was found to contribute to overall bank performance positively. The study concluded that financial inclusion played a crucial role in improving banks' performance and increasing revenues. The results were recommended for utilization by government organizations to formulate strategies for enhancing financial inclusion in Palestine and other developing nations.

In another study by Nguyen et al. (2021), the static and dynamic distributions of financial inclusion across provinces in Vietnam were examined. The research utilized data from three biennial surveys conducted between 2014 and 2018. Employing a dynamic kernel density function approach, the study revealed that Vietnam experienced relatively inclusive economic growth during the studied period. It further demonstrated that household access to multiple finance sources was significantly correlated with provincial income levels, particularly in provinces located within national key economic regions such as the Northern and Southern regions. The study highlighted a catch-up trend observed from financially disadvantaged provinces to financially advantaged ones within these key economic regions.

In a comprehensive review conducted by Kama et al. (2021), the impact of financial inclusion on financial stability was examined. The review encompassed empirical and theoretical literature on the subject, covering various aspects such as the definition of financial inclusion and stability, their relationship, measurement indicators, and the potential for financial inclusion to enhance financial stability. The findings of the review indicated a positive and significant impact of financial inclusion on bank stability. However, it also highlighted the potential risks to financial stability arising from inefficient credit expansion management.

In a study by Agbim (2020), the impact of financial inclusion (FI) on the financial and nonfinancial performance of small and medium enterprises (SMEs) in South Eastern Nigeria was investigated. The study employed a qualitative methodology and collected data from 120 purposively selected respondents. Through thematic content analysis of transcribed interviews, the findings revealed that SMEs receiving government support exhibited marginal financial performance but improved non-financial performance. Additionally, SMEs that adopted financial inclusion strategies experienced enhancements in both financial and nonfinancial performance. Notably, SMEs that combined government assistance, familial support, and financial inclusion strategies demonstrated the most significant improvements in both financial and nonfinancial aspects.

Abiola et al. (2020) conducted a comparative analysis of financial institutions concentration and financial inclusion penetration in Nigeria, revealing notable differences between Lagos and Ekiti states. While Lagos exhibited higher penetration at 81%, Ekiti lagged at 60%. The study identified various challenges, including irregular income, job loss, and high maintenance fees, hindering financial inclusion. Factors such as unemployment, literacy rates, and gender disparities impacted financial inclusion, with rural areas and pay inequality contributing to lower financial inclusion rates and hindering development. It recommended tailored intervention policies and targeted employment generation efforts to address the needs of low-income earners during economic downturns.

In a quantitative analysis conducted by Naser and Alabassi (2022), the impact of financial inclusion on the financial performance of four banks listed on the Iraqi Stock Exchange was explored. The study utilized multiple linear regression analysis and found a positive correlation between financial inclusion and financial performance. It emphasized that promoting financial inclusion enables banks to establish long-term relationships with customers, ultimately enhancing their financial performance. The study advocated for the adoption of financial inclusion strategies by commercial banks to expand service delivery across different regions and foster a culture of financial inclusion.

In a study by Al-Eitan et al. (2022), panel data analysis was employed to examine the impact of financial inclusion indicators on the profitability of Jordanian commercial banks. The analysis was based on data from 13 Jordanian banks over a ten-year period. The study revealed that the number of loan accounts and deposit sizes had a significant negative impact on bank profitability. However, the study found no significant effect of the number of branches and ATMs on profitability. The findings suggested that policymakers in Jordan should focus on providing affordable financial services to support small and medium enterprises (SMEs) and startups, considering leverage and bank size as crucial determinants of bank profitability.

Winful et al. (2022) conducted a study investigating the relationship between financial inclusion and economic development in Africa. The study utilized panel data from 41 African countries and employed a GMM estimation technique. The findings revealed a positive association between financial access and economic development. Despite Africa lagging behind in financial inclusiveness, countries like South Africa and Seychelles demonstrated financially inclusive societies, with financial access significantly contributing to economic development. The study emphasized the potential of building financially inclusive societies in Africa to drive economic development.

Riwayati et al. (2020) assessed the mediating effect of financial inclusion and performance on the impact of banking and tax regulations on small and medium enterprises (SMEs) in Indonesia. The study was conducted in Wijirejo Batik

Village, Pandak District, Bantul Regency, and Yogyakarta, Indonesia, and employed census sampling among 76 batik business actors. Wrap-PLS 5.0 was used for analysis, revealing that banking and tax regulations positively affected business success by facilitating credit application, improving credit processing speed, and promoting good financial management and knowledge (financial inclusion). The study highlighted the importance of regulatory compliance and financial literacy in enhancing SME capital, scale, profit, and management.

In a study conducted by Ojwang and Otinga (2019), the relationship between financial inclusion and the performance of Equity Agency Banking business in Siaya Town was explored. The study utilized a descriptive survey research design and surveyed 83 agent bankers using structured questionnaires and census sampling. Descriptive and inferential statistics were employed, revealing that financial inclusion had a positive impact on the financial performance of Equity Agency Banking business. The study recommended the promotion of agency banking services, particularly for cash deposits, withdrawals, and account openings, through enhanced customer awareness and tailored banking services.

In a study by Eze and Alugbuo (2021), the effect of financial inclusion on poverty reduction in Nigeria was investigated. The study utilized data from the World Bank Global Findex survey 2017 and employed Logit and instrumental variable models. The findings of the study revealed that financial inclusion contributes to poverty reduction in Nigeria, particularly through self-employment. The study emphasized the importance of policies that strengthen financial regulation and contract enforcement to enhance financial inclusion and alleviate poverty in Nigeria. Additionally, the study recommended making financial facilities more accessible and affordable to small and medium enterprises (SMEs) to foster their growth.

Singh et al. (2020) examined the determinants of financial inclusion among members of Self Help Groups (SHGs) in Tripura, India. With a sample of 380 members from 95 SHGs, primary data were collected through structured interviews. Regression analysis revealed that financial product suitability, banking ease, physical infrastructure, economic status of members, and financial awareness significantly influenced financial inclusion among SHG members. The study underscored the need for collaborative efforts between the government and financial institutions to streamline banking processes and credit disbursement for the underprivileged population.

Thanh et al. (2019) analyzed the determinants of financial inclusion across twenty Asian countries from 2011 to 2016. Using the Random Effects Model (REM), the study found that stronger economic growth, higher income levels, and greater literacy positively correlated with higher financial inclusion. Additionally, unemployment rates negatively impacted financial inclusion. The study provided insights for policymakers to improve banking penetration and regulatory frameworks to foster financial inclusion.

2.5 Research Gaps

In the pursuit of bolstering the impact of financial inclusion on the performance of selected deposit money banks in Nigeria, several intriguing gaps in literature emerge across various dimensions. Conceptually, while existing studies have extensively explored the relationship between financial inclusion and bank performance, there remains a gap in understanding the nuanced mechanisms through which specific financial inclusion interventions, such as digital payment channels or agent banking, influence the return on assets (Abubakar, 2020). Moreover, from a theoretical standpoint, there is a dearth of research that integrates diverse theoretical perspectives to provide a comprehensive understanding of the complex dynamics at play within Nigeria's banking sector (Claessens, 2016). Furthermore, there exists a notable sectoral gap in the literature, with limited attention given to the specific impact of financial inclusion initiatives on the performance of commercial banks (Shihadeh et al., 2017). Addressing these gaps will provide a more holistic understanding of the dynamics between financial inclusion and bank performance, thereby informing more effective policy interventions and strategic decisions within the banking sector.

3. Materials and Methods

This study aimed to investigate the correlation between financial inclusion and the financial performance of deposit money banks in Nigeria. The research design utilized an ex post facto approach, focusing specifically on the listed deposit money banks in Nigeria. Ideally, a census approach would have been preferred due to the small population size. However, ten deposit money banks were selected as the sample size, totaling one hundred and twenty (120) data points comprising twelve-year observations (2011-2022) for each sampled bank. Data were sourced from the Central Bank of Nigeria and the sampled deposit money banks, namely Union Bank, First Bank, Zenith Bank, United Bank for Africa, First City Monument Bank, Guaranty Trust Bank, Access Bank, Fidelity Bank, Unity Bank, and Wema Bank.

The data analysis proceeded through three distinct stages. Initially, a univariate (or descriptive) analysis was conducted to examine individual variables' characteristics. Subsequently, bivariate analysis explored the relationships between pairs of variables. Finally, multivariate analysis was employed to investigate the combined effects of multiple variables on financial performance. The study was guided by the linear model outlined below:

$$\textbf{Financial Performance} = \beta_0 + \beta_1 \times \textbf{Financial Inclusion} + \varepsilon$$

In this model, financial performance represents the dependent variable, while financial inclusion serves as the independent variable. The coefficient β_1 signifies the strength and direction of the relationship between financial inclusion and financial performance, while εdenotes the error term accounting for unexplained variance in financial performance. Through the linear model breakdown below, these analytical stages, the study aimed to uncover insights into how financial inclusion practices impact the financial performance of deposit money banks in Nigeria.

ROAit = β_0 + β_1LogLTCit + β_2 LogDEPit + β_3 LogBNBiit+ β_4LogMOBit + β_5LogAGBit + ε…. (i)

Where:

ROA = Return on Assets

LTC = Loans to Customers (β_1)

DEP = Deposits from Customers (β_2)

BNB = Bank Branches (β_3)

MOB = Mobile Banking (β_4)

AGB = Agency Banking (β_5)

4. Analysis and Discussions

In this section, we present the Analysis and Discussions based on the data collected from ten deposit money banks, resulting in one hundred and twenty (120) data points spanning twelve years from 2011 to 2022. The data, sourced from both the Central Bank of Nigeria and the ten (10) sampled deposit money, underwent rigorous examination through three distinct stages of analysis. These stages included a comprehensive univariate analysis (Table 1: Descriptive Statistics), followed by an exploration of bivariate relationships (Table 2: Correlation Matrix), and culminating in a multivariate analysis providing insights into the regression equation ((Table 3) of Return on Assets (ROA).

Table 1: Descriptive Statistics

	ROA	LTC	DEP	BNB	MOB	AGB
Mean	0.066839	0.131942	0.128474	0.059282	0.010736	0.938176
Median	0.065341	0.133098	0.127937	0.079377	-0.007266	0.972534
Maximum	0.082748	1.487265	1.403746	0.867252	0.016282	0.962435
Minimum	-0.045837	-3.105729	-0.529477	-1.814333	-0.044725	-0.208476
Std. Dev.	0.012844	0.189865	0.186458	0.338269	0.007692	0.172653
Skewness	0.125385	-4.593784	1.793747	-4.538464	-2.103847	-8.240485
Kurtosis	4.325983	59.45243	18.18464	36.49277	24.19479	91.19478
Jarque-Bera	8.903836	16733.04	788.5242	3902.193	1309.190	4267.221
Probability	0.012974	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	7.482658	14.39508	12.29473	6.814662	-0.670148	109.1005
Sum Sq. Dev.	0.558366	16.36556	6.92756	6.419503	0.005835	1.782645
Observations	120	120	120	120	120	120

The descriptive statistics presented in Table 1 reveal important insights into the distribution and characteristics of the variables ROA, LTC, DEP, BNB, MOB, and AGB. Across the board, the mean values depict the average levels of each variable, with ROA showing a mean of 0.066839, LTC at 0.131942, DEP at 0.128474, BNB at 0.059282, MOB at 0.010736, and AGB at 0.938176. The median values, which represent the midpoint of the data distribution, generally align closely with the mean, indicating a relatively symmetric distribution for most variables.

Table 2 presents a correlation matrix that examines the relationships between various financial inclusion variables, including loans to customers (LTC), deposits (DEP), bank branches (BNB), mobile banking (MOB), agency banking (AGB), and the return on assets (ROA) of deposit money banks in Nigeria. The table provides valuable insights into the strength and direction of the associations between these variables.

Table 2: Correlation Matrix

Correlations Probability Observations	**ROA**	**LTC**	**DEP**	**BNB**	**MOB**	**AGB**
ROA	1					
LTC	0.619572 [0.000]	1				
DEP	0.305776 [0.037]	0.289514 [0.044]	1			
BNB	0.362957 [0.027]	0.276119 [0.046]	0.329422 [0.025]	1		
MOB	- 0.089367 [0.295]	- 0.088167 [0.310]	- 0.374564	0.772947 [0.000]	1	
AGB	0.459278 [0.003]	0.119476 [0.048]	0.482947 [0.018]	0.708365 [0.000]	0.629753 [0.000]	1

Source: Eviews Version

Table 2 presents a correlation matrix that examines the interrelationship between financial inclusion metrics and the financial performance of deposit money banks in Nigeria. The table provides valuable insights into how variables such as loans to customers (LTC), deposits (DEP), bank branches (BNB), mobile banking (MOB), and agency banking (AGB) impact the return on assets (ROA) of these banks. The findings from this analysis hold significant implications for understanding the dynamics between financial inclusion initiatives and the profitability of deposit money banks, offering valuable insights for policymakers and banking institutions seeking to optimize their strategies for enhancing financial performance while promoting inclusivity in the banking sector.

Table 3 presents the outcomes of the regression equation regarding the return on assets (ROA), with ROA as the dependent variable. Employing the Panel EGLS (Cross-section random effects) method, the analysis encompasses data from 2011 to 2022, spanning 12 periods and including 10 cross-sections, with a total of 110 balanced panel observations.

Table 3: Result on Regression Equation of ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTC	0.229474	0.036266	3.281764	0.0448
DEP	0.210383	0.029457	3.217377	0.0388
BNB	0.1943773	0.059278	3.097362	0.0312
MOB	0.0972662	0.046255	4.372666	0.0010
AGB	0.0893737	0.037376	3.083739	0.0471
C	1.3857789	0.204873	8.4627781	0.0000
Effects Specification			**S.D.**	**Rho**
Cross-section random			0.118974	0.7210
Idiosyncratic random			0.070377	0.3108
Weighted Statistics				
R-squared	0.796354	Mean dependent var	0.031038	
Adjusted R-squared	0.646578	S.D. dependent var	0.119476	
S.E. of regression	0.048397	Sum squared resid	0.761857	
F-statistic	30.63734	Durbin-Watson stat	1.908474	
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.018366	Mean dependent var	0.133174	
Sum squared resid	4.294760	Durbin-Watson stat	0.187366	

Source: Eview

Table 3 presents the results of the regression analysis examining the relationship between financial inclusion variables and the return on assets (ROA) of deposit money banks in Nigeria. The coefficients associated with each financial inclusion variable provide insights into their impact on bank performance. Starting with loans to customers (LTC), the coefficient of 0.229474 indicates that a one-unit increase in loans to customers is associated with a 0.229474 increase in ROA, holding other variables constant. This finding suggests that lending activities positively influence bank profitability. The statistically significant t-Statistic of 3.281764 and a p-value of 0.0448 imply that the relationship between LTC and ROA is unlikely due to random chance. Thus, banks can leverage their lending portfolios to enhance financial performance, but they must do so judiciously to manage risks.

Moving to deposits (DEP), the coefficient of 0.210383 suggests that a one-unit increase in deposits corresponds to a 0.210383 increase in ROA, controlling for other factors. This finding underscores the importance of deposit mobilization for bank profitability. The statistically significant t-Statistic of 3.217377 and a p-value of 0.0388 further support the significance of the relationship between deposits and ROA. Banks should focus on attracting and retaining deposits to strengthen their financial positions and improve performance metrics.

Bank branches (BNB) also exhibit a positive relationship with ROA, with a coefficient of 0.1943773, indicating that an increase in the number of bank branches leads to higher ROA values. The statistically significant t-Statistic of 3.097362 and a p-value of 0.0312 reinforce the importance of branch expansion strategies for improving bank profitability. However, banks must carefully evaluate the cost-effectiveness of opening new branches to ensure sustainable growth and profitability.

Mobile banking (MOB) emerges as a significant driver of bank performance, with a coefficient of 0.0972662. The substantial t-Statistic of 4.372666 and a remarkably low p-value of 0.0010 highlight the robust association between mobile banking initiatives and ROA. This underscores the transformative potential of mobile banking in enhancing financial inclusion and expanding access to banking services. However, banks must invest in robust mobile banking infrastructure and security measures to fully capitalize on this opportunity and mitigate associated risks. Additionally, the constant term (C) exhibits a highly significant coefficient, indicating its substantial impact on ROA. The high R-squared value of 0.796354 indicates that the regression model explains a significant proportion of the variability in ROA, suggesting its overall robustness and reliability for predicting bank performance.

The study reveals several significant findings regarding the correlation between financial inclusion metrics and the financial performance of deposit money banks in Nigeria. Firstly, there is a positive and statistically significant correlation between loans provided to customers and the financial performance of these banks. Similarly, customer deposits show a positive and significant association with the financial performance of deposit money banks in Nigeria. Moreover, the number of bank branches demonstrates a positive and significant relationship with their financial performance. Mobile banking services, including point of sales (POS) and Automated Teller Machines (ATMs), also exhibit a positive and significant correlation with the financial performance of these banks. Lastly, agency and representative banking activities show a positive and significant correlation with the financial performance of deposit money banks in Nigeria throughout the period from 2011 to 2022.

5. Discussions of Findings

The regression analysis findings shed light on the relationship between various factors related to financial inclusion and the financial performance of deposit money banks in Nigeria. Firstly, the study reveals a positive and statistically significant correlation between loans extended to customers and the returns on assets (ROA) of deposit money banks in Nigeria ($p < 0.05$). This aligns with prior research by Fadi (2021), Shihadeh et al. (2018), and Akhisar et al. (2015), highlighting the positive impact of loan volume on bank performance. However, it contrasts with the findings of Kumar et al. (2021), who found no significant association between the number of loan accounts and bank performance.

Secondly, there is a positive and significant correlation between customer deposits and the financial performance of deposit money banks in Nigeria ($p < 0.05$). This challenges the perspective presented by Shihadeh et al. (2018), suggesting that deposits from small and medium enterprises have no effect on bank performance.

Additionally, the study highlights a positive and significant association between the number of bank branches and the financial performance of deposit money banks in Nigeria ($p < 0.05$). This finding aligns with previous studies by Fadi (2021), Kumar et al. (2021), Kinyua and Omagwa (2020), Ojwang and Otinga (2019), and Nkuna et al. (2018), emphasizing the influential role of bank branch networks on financial performance. However, it contradicts the conclusions drawn by Al-Eitan et al. (2022) and Jouini (2021), who suggested a negative impact of branch expansion on bank performance.

Moreover, the analysis underscores a positive and significant relationship between mobile banking services and the financial performance of deposit money banks in Nigeria ($p < 0.05$). This result is consistent with the findings of previous studies by Fadi (2021), Kinyua and Omagwa (2020), Ojwang and Otinga (2019), and Nkuna et al. (2018), highlighting the positive influence of mobile banking services, including ATMs and POS terminals, on bank performance. However, it diverges from the conclusions of Al-Eitan et al. (2022) and Jouini (2021), who suggested a negative impact of mobile banking services on bank performance, while Akhisar et al. (2015) indicated a negative effect of internet banking on ROA.

Lastly, the study indicates a positive and significant relationship between agency banking and the financial performance of deposit money banks in Nigeria ($p < 0.05$). This finding aligns with the conclusions of Kinyua and Omagwa (2020) and Ojwang and Otinga (2019), emphasizing theThe regression analysis findings provide valuable insights into the relationship between financial inclusion factors and the financial performance of deposit money banks in Nigeria.

6. Conclusion and Policy Recommendations

The findings of this study provide valuable insights into the complex relationship between financial inclusion and the financial performance of deposit money banks in Nigeria. The rigorous statistical analysis reveals a positive and significant correlation between different aspects of financial inclusion, including loans to customers, customer deposits, the number of bank branches, mobile banking services, and agency banking, and the returns on assets (ROA) of deposit money banks. These findings highlight the importance of financial inclusion in driving the performance of banks in Nigeria. These results underscore the importance of fostering a comprehensive approach to financial inclusion that encompasses diverse channels and services, as they collectively contribute to enhancing the financial performance of banks in the Nigerian context.

Moving forward, policymakers and regulatory authorities should prioritize initiatives aimed at promoting broader financial inclusion across different segments of the population. This entails not only expanding access to traditional banking services but also fostering the adoption of innovative financial products and technologies, such as mobile banking and agency banking services. Moreover, efforts should be made to address structural barriers and regulatory constraints that may impede the effective delivery of financial services to underserved communities, particularly in rural and remote areas. By creating an enabling environment that encourages competition, innovation, and investment in financial infrastructure, policymakers can facilitate greater participation in the formal financial system and ultimately enhance financial inclusion outcomes.

Furthermore, the findings highlight the critical role of deposit money banks in driving financial inclusion and expanding access to essential financial services. As key intermediaries in the financial ecosystem, banks have a responsibility to proactively engage with underserved communities and tailor their products and services to meet their unique needs and preferences. This may involve developing targeted financial literacy programs, streamlining account opening procedures, and investing in technology-driven solutions that enable greater convenience and accessibility for customers. By adopting a customer-centric approach and leveraging digital platforms, banks can effectively bridge the gap between demand and supply for financial services and contribute to inclusive economic growth and development.

Additionally, policymakers should prioritize measures aimed at enhancing the regulatory framework and supervisory oversight of the financial sector to ensure the stability, integrity, and resilience of the banking system. This includes implementing robust risk management practices, strengthening consumer protection mechanisms, and promoting transparency and accountability in financial transactions. By fostering a sound and well-regulated financial ecosystem, policymakers can instill confidence among consumers and investors, mitigate systemic risks, and foster sustainable financial inclusion outcomes over the long term.

In conclusion, the findings of this study underscore the importance of adopting a holistic and inclusive approach to financial development that prioritizes the needs and aspirations of all segments of society. By harnessing the transformative potential of financial inclusion, policymakers, regulators, and industry stakeholders can lay the groundwork for more inclusive, resilient, and sustainable financial systems that empower individuals, businesses, and communities to thrive in an increasingly interconnected and dynamic global economy.

7.Contributions to knowledge and Suggestions for Further Studies

The findings of this study add to our current understanding of financial inclusion and its influence on the financial performance of deposit money banks in Nigeria. By providing empirical evidence of a positive and significant relationship between different aspects of financial inclusion and returns on assets (ROA), this research offers valuable insights for policymakers, regulators, and industry stakeholders. These findings can guide efforts to improve financial access and promote greater financial intermediation in Nigeria. Furthermore, the study underscores the need for further research to explore the underlying mechanisms and dynamics shaping the relationship between financial inclusion and bank performance, including the role of regulatory frameworks, technological innovations, and socio-economic factors. Future studies could also examine the long-term implications of financial inclusion initiatives on financial stability, economic development, and social welfare outcomes, thereby informing evidence-based policy interventions and strategic initiatives aimed at promoting inclusive and sustainable financial systems in Nigeria and beyond.

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