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FINANCIAL INCLUSION AND FINANCIAL PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT

This study evaluated the effect of financial inclusion on financial performance of listed deposit money banks in Nigeria. The Specific objectives were sought to; evaluate the effect of mobile banking on return on assets, evaluate the effect of loan granted to customers on return on assets and ascertain the effect of deposit to banks on return on assets of listed deposit money banks in Nigeria. The study employs an ex-post facto research design. The population of the study was fourteen (14) listed deposits money banks in the Nigerian Exchange Group and 7 deposit money banks was used as sample size employing purposive sampling technique. The data used in the study was sourced from annual reports and statement of accounts of the selected firms between 2014 and 2023. The method of data analysis was descriptive statistic, unit root test, diagnostic test and multiple regression of Panel Least Square (PLS) with the help of E-view 12. The study result indicated that mobile banking has no significant effect on return on assets, loan granted to customers has no significant effect on return on assets, deposit to banks has no significant effect on return on assets of listed deposit money banks in Nigeria. Hence, the study concludes that the effect of financial inclusion on financial performance of listed deposit money banks in Nigeria is not significant. The study recommends amongst other that all banks should encourage their customers to use automated teller machines oftenly based on the results of the study that automated teller machines had a noteworthy effect on return on assets. Relying on automated teller machines would minimize the customers time and costs rather than visiting the branches physically.

Keyword: Financial Inclusion, Mobile Banking, Deposit to Banks and Loan Granted to Customers

INTRODUCTION

Financial inclusion and performance of deposit money banks continuously stimulate the interest of finance and economics researchers globally. This is because financial inclusion stimulates financial deepening and economic growth (Appah & Tebepah, 2023). According to Kinyua and Omagwa (2020), financial inclusion is becoming more germane as it is turning out to be a policy concern, particularly in developing countries. Johnpaul et al. (2021) posited that financial inclusion is designed at ensuring that all adult members of the society have easy access to a broad range of financial products, designed according to their needs and provided at affordable costs. Similarly, Kinyua and Omagwa (2020) stated that financial inclusion is intended at ensuring formal system access to financial service requesters. All financial inclusion roles are expected to promote economic development and growth, reduce poverty, and enhance individuals' personal well-being. Additionally, greater financial inclusion ensures that the financial system requires more small savers. This helps in expanding a financial network and creating an effective financial flow within the borders of the organization (Ahamed & Mallick, 2017). Winful et al. (2022) noted that research on financial inclusion and financial performance revealed that financial inclusion was one of the solutions to the development of firms globally. In Nigeria, the Central Bank of Nigeria and deposit money banks is in the driving seat of the national effort to achieve

financial inclusion. The CBN policy recognized the role of deposit money banks in providing traditionally excluded from or not well served by the conventional financial institutions (Appah & Tebepah, 2023; Oke et al., 2023; Harish & Biswajit, 2023). Johnpaul et al (2021) opined that the principle of financial inclusion has assumed greater level of importance in recent times due to its perceived importance as a driver of economic growth. Giving access to the hundreds of millions of men and women (all over the world) who are presently excluded from financial services would provide the possibilities for the creation of a large depository of savings, investable funds, investment and therefore global wealth generation. In other words, access to financial services, that are well suited for low-income earners promote enormous capital accumulation, credit creation and investment boom.

Statement of the Problem

In view of the globalization, Covid19 Panic and financial crisis of 2007-2009, policy makers, regulators and financial institutions heavily invested in reforms aimed at improving performance. In Nigeria, the government and listed deposit money banks have initiated and implemented several reforms such as Finance Act (2020), Amendment of CAMA) in (2020) and the International Financial Reporting Standards (IFRS) introduction in 2018. Despite these government initiatives, many of the listed deposit money banks in the recent past have continued to face challenges related to performance. Poorly implemented financial inclusion policies have also impaired financial performance despite introduction of strategies of improving stability (Odundo, 2018). Anyanwu et al (2018) stated the major factors inhibiting financial inclusion in Nigeria as supported by the findings of the access to financial services in Nigeria survey 2014 by Enhancing Financial Innovation and Access (EFINA) and Central Bank of Nigeria (CBN) report of 2013 are precisely discussed as follows: (i) inadequate income or no income. The rate of unemployment in Nigeria is very high and most of the rural areas are affected. Thus regular income and in most cases, no income characterized living conditions of rural areas populace, making access to financial services very difficult even when there is genuine need for such fund by deposit money banks. Over 80% of the labour force and strategic positions are held by people living in rural areas. (ii) Cost of financial services. The cost of financial services is out of hand for average income earning in Nigeria. The deposit money banks and microfinance banks charge as high as 27% to grant a facility, and mostly overdraft. This results in Nigerians not keeping their savings in banks but prefer to keep them with informal banking sectors mostly, corporative and thrift societies popularly called, Esusu' in the traditional affirmation of the Igbo tribe which offer a lower interest in comparison to deposit money banks, microfinance banks and other financial institutions in the country. The provision of long term financial services at lower cost are mostly by government established institutions for the purpose of economic growth and development. Nwakoby and Ananwude (2016) noted that a thrift and co-operative society operated by lectures in Nnamdi Azikiwe University, Awka, Nigeria extends up to N5 million to a member at 10% rate of interest compared to deposit money banks that will grant same amount at over 27% rate of interest. In this scenario, virtually all the members of this credit and thrift society in Nnamdi Azikiwe University, Awka avoid financial services from deposit money banks, microfinance banks and other financial institutions. Attitudes towards finance and technology reveal that 49.8% of adults believe that taking loans should be avoided as much as possible. Similarly, Enhancing Financial Innovation and Access (EFInA) reported in 2014 that 49.3% of adults in Nigeria believe that they can easily live their lives without having a bank account. (iii) Lack of financial institutions in rural areas: There is no presence of financial institutions in the rural

areas even microfinance banks rarely operate in rural areas. This is anchored on their aim to maximize wealth of shareholders and as such, operating in areas with inherent operating losses is out of place. According to EFINA illiteracy among Nigerians is very high. This is part of the reason why high rate of illiteracy constitute the largest population that are unbanked in the country most especially women. Women who even have bank accounts avoid using ATMs, mobile money, etc. for the fear of cybercrime and fraud even when it is very obvious that such crime is impossible by cautiously following the instructions and guidelines in operating such technology payment delivery devices. (v) Lack of trust resulting from cyber-security threats to financial transactions via digital platforms from illegal activities. (vi) The high cost of building and operating brick-and-mortar bank branches has been a major obstacle for extending financial services to the poor/ low income households. There is an indication that, prior studies have been inconclusive on Access to Financial Services (2017), over 60% of working adults have no access to the types of formal financial services delivered by regulated financial institutions. (iv) Financial literacy. The level of
the exact nature of relationship or effect between financial inclusion and financial performance. It is also worth noting that, no locally available studies have focused on emerging channels of loans granted to customers, deposits with banks, bank branches spread and mobile banking, these important variables of financial inclusions were overlooked, also coupled with inconclusive findings from prior studies have raise an issue of empirical gap. Given the financial inclusion importance and the role of intermediation of deposit money banks play and the current empirical gaps, this study sought to enrich existing relevant literature by assessing the effect of financial inclusion on financial performance of listed deposit money banks in Nigeria.

Aim and Objectives of the Study

The aim of this study was to investigate the effect of financial inclusion on financial performance of listed deposit money banks in Nigeria. The Specific objectives were to;

1. evaluate the effect of mobile banking on return on assets of listed deposit money banks in Nigeria.
2. evaluate the effect of loan granted to customers on return on assets of listed deposit money banks in Nigeria;
3. ascertain the effect of deposit to banks on return on assets of listed deposit money banks in Nigeria.

Research Questions

The following research questions were addressed in the study;

1. What is the effect of mobile banking on return on assets of listed deposit money banks in Nigeria?
2. What is the effect of loan granted to customers on return on assets of listed deposit money banks in Nigeria?
3. What is the effect of deposit to banks on return on assets of listed deposit money banks in Nigeria?

Hypotheses

The following hypotheses were tested in order to answer the stated questions.

H_{01}: Mobile banking has no significant effect on return on assets of listed deposit money banks in Nigeria.

H_{02}: Loan granted to customers has no significant effect on return on assets of listed deposit money banks in Nigeria.

H_{03}: Deposit to banks has no significant effect on return on assets of listed deposit money banks in Nigeria.

REVIEW OF RELATED LITERATURE

Conceptual Review

Financial Inclusion

Financial inclusion refers to the availability and utilization of affordable and useful financial products and services provided by businesses payments, and savings, and the delivery of these services to them in a responsible and sustainable manner. Oz-Yalaman (2019) defined financial inclusion as "individuals and businesses have access to useful and affordable financial products and services that meet their needs e-transactions, payments, savings, credits and insurance delivered in a responsible and sustainable way. Koker and Jentzsch (2012) defined financial inclusion as ensuring access to formal financial services at an affordable cost in a fair and transparent manner. These definitions entail that financial inclusion includes accessibility, availability and the usage of financial systems. It has been suggested that better inclusion improves the effectiveness and availability of financial services while being a safe, convenient, secure, and cost-effective approach (Vo & Nguyen, 2021; Ikram & Lohdi 2015). There is growing evidence that progress in financial inclusion enhances financial stability and contributes to banks' economic growth, financial efficiency, and performance. The government also immensely benefits from increased local economic activities that decrease economic inequality at the macroeconomic level (Chikalipah, 2017). Despite an increased focus on the development of initiatives to promote FI in Asian countries, fostering it continues to present challenges in the region (Marcelin et al., 2022; Le et al., 2019). According to Sarma (2008) inclusive finance involves the ability to approach the financial system, and that it is essential for all citizens in a country to utilize the formal financial system. Financial inclusion covers sustainable, relevant, cost effective and meaningful financial services for the financially underserved population especially rural dwellers (Ibor et al., 2017). Thus, financial inclusion is the ability of individuals to access and use basic financial services like savings, loans and insurance designed in a manner that is reasonably convenient, reliable and flexible. Centre for Financial Inclusion (2013) also described financial inclusion as a state in which all people who can use financial services have access to a complement of quality financial services, provided at affordable prices, in a convenient manner and with dignity for the clients. Ene and Inemesit (2015) noted that the essence of financial inclusion to be in trying to ensure that a range of appropriate financial services is available to every individual, and enabling them to understand and access those services.

Dimensions of Financial Inclusion

Mobile Banking

The introduction of mobile banking together with enabling technology in alternative delivery channels (mobile bank platforms, ATMs and POS) will rapidly expand financial service providers (FSP) outreach to the underserved and totally exclude population. This is also likely to facilitate services of other financial services including deposit money bank and SMEs. In Nigeria SMEs have adopted mobile banking services provided by the financial institutions to enhance financial access which eliminates financing challenge that has been found to limit SMEs financial performance. Mdasha et al (2018) found that the main factors that affect SMEs firms' performance are the lack of access to appropriate financial products and services. The lack of financial services and access to credit provided by banks may have a detrimental impact on SMEs performance

because of two reasons. First, capital constrained SMEs will scale down their capacity, and operate below the efficient scale of production. Second, high cost of capital or limited outside financing will force SMEs firms to substitute labor for physical capital. Use of mobile banking facilities by SMEs will give them competitive advantage from reduced transaction costs, convenience in banking and increased performance.

Loans granted to customers

According to Puspitasari et al (2021), loan granted to customers compares the size of a bank's loan book to its deposits to analyze the bank's funding strategy. Loan granted to customers refers to the total loans granted by the bank. Funding can come from customer deposits or the wholesale markets (in the form of demand deposits, savings accounts, time deposits, time deposits certificates, and other immediate obligations in the form of credit). Lending is the main activity of the bank, besides collecting funds from customers, because it is the main source of bank income. Banks generally make money by borrowing money from depositors and compensating them with a certain interest rate. The banks will lend the money out to borrowers, charging the borrowers a higher interest rate, and profiting off the interest rate spread. If the loans are one of the important sources of financing, and on the other hand, the loan provides the issuing bank with an opportunity to obtain appropriate returns (interest rate) and thus improve financial performance (Qamruzzaman & We, 2019).

Deposits with banks

Deposits with banks refer to the total deposits with the bank (Qamruzzaman & We, 2019). If this money is available, it helps the bank to exploit investment opportunities in an optimal manner, which is reflected positively on the bank's financial performance. Choudhry (2011) stated that, due to individuals or institutions, deposits are restricted to cash deposited in the banks deposit money books. As the value of the deposit may indicate the depositor's financial status, which is a secret that cannot be disclosed, the bank deposits are subjected to strict confidentiality (Akhtar et al, 2017). The deposits are important as they are the lifeblood of banks and the main source of money. They may account for more than 90% of the total opponents which are the lowest cost and are among the most fertile sources of money (Casu & Molyneux, 2006). All types of the main and largest source of financing for the bank are represented by the deposits, as they allow banks to create credit in a unique manner and due to the ability of the bank, to provide credit facilities (Haddaweea & Flayyih, 2020). This does not stop at the amount deposited to it after the legal reserve is raised, but in the same proportion of each deposit amount. In addition, this is the most important form of savings that contribute significantly to support investment in countries and to support the movement of investment and project financing by contributing to the formation of fixed capital with banks while encouraging and supporting customers to increase savings across benefits (Bouheni et al., 2016).

Financial Performance

Financial performance is defined as the degree to which the bank's financial goals are achieved (Nguyen et al., 2021). Financial performance is defined as a measure of the bank's ability to manage its assets in an optimal manner to achieve profits (Bag & Omrane, 2022). Financial performance is also known as a general measure of health. The financial performance during a certain period and it can be used to measure the bank's

performance in comparison with the banks operating in the same sector (Ehiedu & Toria, 2022). Financial performance is the product of all the bank's operations and strategies, as the financial performance of banks provides information to develop their strategic plans (Abdulnafea et al., 2022). Kurawa and Shuaibu (2022) defined financial performance as a measure of expressing the general financial productivity of banks over a specific financial period. Financial performance had received important consideration from scholars particularly in accounting, finance critiqued that financial measures lack predictive ability to explain future performance, reward short-term or incorrect behaviour, provide little information on root causes or solutions to problems, and give inadequate consideration difficult to quantify and management (Imeokparia et al., 2021). Financial performance is measured by scholars depended on their area of specialization or concept usage. According to Hillary, (2016), performance encompasses three specific areas of firm outcomes: (1) financial performance (profits, return on assets, return on investment, etc.); (2) market performance (sales, market share, etc.); and (3) shareholder return (total shareholder return, economic value added, etc.). However, it has been

intangible assets such as intellectual capital. As a result, many firms are supplementing financial metrics with a diverse set of non-financial performance measures that are believed to provide better information on strategic progress and success.

Measures of Performance

Return on Assets

Return on Assets (ROA) is an indicator of how well a company utilizes its assets, by determining how profitable a company is relative to its total assets, ROA is best used when comparing similar companies or comparing a company to its previous performance. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Return on assets is displayed as a percentage (Bashari & Mohammed, 2019). The higher the ROA number, the better, because the company is earning more money on less investment. ROA is most useful for comparing companies in the same industry, as different industries use assets differently (Ahamed, 2017). Murekefu and Ouma (2012) stated that return on assets is a financial ratio that shows the percentage of profit a company earns in relation to its overall resources. It is commonly defined as net income divided by total assets. Net income is derived from the income statement of the company and is the profit after taxes. Ratnawati (2020) stated that return on assets indicates how profitable a company is relative to its total assets. The return in assets (ROA) ratio illustrates how well management is employing the company's total assets to make a profit. The higher the return, the more efficient management is in utilizing its asset (Loth, 2006). Since company assets' sole purpose is to generate revenues and produce profits, this ratio helps both management and investors to see how well the company can convert its investments in assets into profits (Carl & Shaun, 2014). This ratio measures how profitable a company's assets are. A higher ratio is more favorable to investors because it shows that company managing its assets effectively to produce greater amounts of net income. A positive ROA ratio usually indicates an upward profit trend. It can be calculated with the formula Return on Assets= Net Income/Total Asset.

Theoretical Framework

Bank led theory

The bank led theory arose under various efforts by banks to come up with new models of reaching their clients through agents. Various researchers have studied the theory (Kiburi, 2016; Kendall, 2012). Under the model, a financial institution licensed to operate in a country, in most cases a bank, uses retail agents to deliver financial services. The banks create the financial products and services and then distributed them to the retail agents who handle all the interactions with the customers. The ultimate providers of the financial services are the banks, and the customers have to maintain an account with the primary bank. This theory is composed of a sequence of three main entities; the bank, Customers are able to access the mix of financial and non-financial service available. To enable retail agents to facilitate the communication between the customer and the bank, the bank is responsible for installing electronic technology such as mobile phones or POS devices for the retail agent. But in some countries like Brazil the bank license management companies on its behalf to carry out its responsibilities such as outfitting retail agents with technology and monitoring their performances, albeit the bank is still accountable to the customer in the case of retail agent's fraud or negligence (Lyman, 2006).

The bank led theory is critical in this research as it forms the basis of agency banking which is an important element of financial inclusion. While looking at the use of agents and proliferation of ATMs and mobile banking services, what comes to mind is the bank led theory. The analysis of the theory explained why banks have continued to use the elements prescribed under the variables as modes of enhancing financial inclusion. Even though the theory forms the backbone of the element of agency banking, it has not established the outcome of the practice regarding the returns to the banks and the customers. In a simple form, it has highlighted the retail agent, and the customer. This sequence starts when banks develop their financial products and services that are delivered to clients through retail agents that interact directly with clients on behalf of the banks (Ojwang & Otinga, 2019). Basically, the bank is mainly responsible for opening and holding the account (cash in cash out transactions). The retail agent is responsible for verifying customer's ID, performing face to face transactions, processing applications, forming groups, disbursing small values to the bank, collecting loans and small deposits, vending insurance products, and dealing with small remittances (Chowdhury, 2010).

the manner in which the process of agency banking occurs within business environment.

The bank led theory is related to the study as it focus on how financial institution like bank deliver their financial services through a retail agent, where the bank develops financial products and services but distribute them through a retail agents. This can be a way of mobilizing deposits commercial banks use as a new model to increase financial inclusion and facilitate the transaction especially in the areas where the bank is not present. This theory facilitates the banks to raise its deposits and lead to financial performance.

Empirical Review

Appah and Tebepah (2023) investigated the relationship between financial inclusion and financial performance of deposit money banks in Nigeria from 2011 to 2021. The study employed ex post facto and correlation research design with secondary data obtained from the Central Bank of Nigeria and financial institutions of deposit money banks. The population of the study consisted of all listed deposit money banks and a sample size of ten (10) was employed for data analyzing using univariate, bivariate and multivariate analysis. The results indicated a positive and significant relationship between loans to customers,

deposits by customers, bank branches, mobile banking and agency banking on return on assets of deposit money banks. The study concluded that financial inclusion positively influences the level of financial performance of deposit money banks. On the basis of the conclusion, the paper recommended amongst others that financial inclusion innovation methods should be stressed in the financial sector through Central Bank of Nigeria (CBN) regulatory and advisories since it leads to improved financial performance and efficiency.

Oke et al (2023) determined the effects of financial inclusion on the performance of Micro, Small and Medium Enterprises (MSMEs) and the nation at large cannot be overemphasised. The study adopted a cross-sectional design with a sample of 409 MSMEs. Descriptive statistic, content analysis and multivariate regression were employed to responsibility (CSR) and the financial performance of banking companies in India. The study uses the fixed-effect model to measure the impact of financial inclusion on the financial performance of banks listed in the Bank Nifty Index from 2015 to 2022. The study shows that financial inclusion indicators positively affect financial performance, which is critical for banking institutions. Empirically, the study provides evidence that legislative CSR is a significant moderator that can influence the relationship between financial inclusion and the financial performance of banks. Practical implications - The emerging nations may concentrate on implementing legislative CSR spending to achieve economic value for their firms and societal responsibility toward stakeholders.

Appah et al (2023) investigated digital financial services and economic growth of Nigeria from 2006 to 2021. The study anchored on technology acceptance model (TAM) advanced by Davis (1989) and purposive sampling technique was adopted for the collection of quarterly secondary data from the Central Bank of Nigeria. The quarterly data collected were analysed using univariate, bivariate and multivariate analyse and achieve the stated objectives. Results on the effects of financial inclusion on MSMEs' performance revealed that financial inclusion positively and significantly drives the performance of MSMEs measured in terms of profitability and sales growth in Southwest Nigeria. The study, therefore recommends that lending interest rate should be made attractive to encourage continuous access to loanable funds that would encourage economic agents such as the MSMEs to save and borrow to spur economic activities. More so, effort should be intensified on collateral reform in Nigeria, and movable assets such as machinery and equipment that are readily available for MSMEs can as well be used for pledges instead of real estate which may not be available.

Harish and Biswajit (2023) examined the nexus among financial inclusion, legislative corporate social

analyses. The findings from the VECM indicated that automated teller machine services positively and insignificantly influence real gross domestic product in Nigeria; point of sales services positively and significantly influence on real gross domestic product in Nigeria; mobile banking services positively and insignificantly influences real gross domestic product in Nigeria; and web banking services positively and significantly influence on real gross domestic product in Nigeria. On the basis of the findings, the study concluded that digital financial services influence the economic growth of Nigeria. Hence, the study recommended amongst others that appropriate policies aimed at promoting and enhancing the availability and penetration of digital financial services should be implemented and made effective as this will increase real gross domestic product of the country.

Iwedi et al (2023) conducted a study on financial inclusion and financial technology in Nigeria. The study employed ex post facto research design and secondary data were collected from the Central Bank of Nigeria from 2009 to 2019. The independent variable financial technology was measured using

point of sale, automated teller machine, web banking technology and mobile banking technology while the dependent variable financial inclusion was measured using deposit ratio. The secondary data obtained were analysed using univariate and multivariate analysis. The vector auto regression estimation result revealed that web banking technology positively and significantly affects financial inclusion while point of sale, automated teller machine and mobile banking technology positively and not significantly affects financial inclusion in Nigeria. The study concluded that an upsurge in the use of financial technology instruments such aspoint of sale, automated teller machine, web banking technology and mobile banking technology will improve the level of financial inclusion in Nigeria.

Olubukola, et al (2023) studied digital financial services and the Nigerian economy from 2009 to 2017. The study used ex post facto research design and secondary data were collected from the Central Bank of Nigeria. Ratnawati et al (2022) determined the relationship between financial inclusion, national development, and the stability of the national financial system in Indonesia. The data collected in the study was secondary data that includes the data of the number of commercial bank accounts, number of commercial banking service offices, number of general credits, average income, population welfare, goods and services production, and number of credits of 34 provinces throughout Indonesia, from 2015 until 2019. A dynamic statistic panel Model of the Generalized approach of Moments (GMM) is used for data analysis. The results of the study showed that financial inclusion has a significant negative influence on national development, but it can increase the national financial stability system. This is possible due to the diversity of demography, economic condition, and geographical condition in each province of Indonesia.

Restia et al (2022) studied the effect of financial inclusion and financial literacy on the financial performance of Micro, Small, and Medium Enterprises in Ambon City. The type of research used is a quantitative research method. The population of the study were perpetrators of Micro, Small, and Medium Enterprises in Ambon City who are registered with the cooperatives service with a total of 19,783 micro, small, and medium enterprises actors. So the research sample is 100 respondents. The method of analysis in the study was multiple linear regression analysis. The results of the study show that financial inclusion has a positive and significant effect on financial performance. Financial literacy has a positive and significant effect on financial performance.

Nittayakamolphun and Pholkerd (2022) carried out a study of financial innovation and economic growth in Thailand. The research used quarterly secondary data obtained from 2010 to 2020, from the Bank of Thailand, World Bank and the Office of National Economics and Social Development Council. The study used real gross domestic product per capita (GDPC) as an indicator for economic growth while financial innovation

The study utilized volume of ATM transactions, volume of POS transactions, volume of point of sales transactions and volume of web transactions as the independent variables whereas gross domestic product as the dependent variable. The secondary data were analysed using univariate and multivariate analysis. The ordinary least square results indicated that volume of mobile banking, volume of point of sales, and volume of automated teller machine positively and significantly affects gross domestic product. Additionally, volume of web transactions negatively affects the gross domestic product. The study recommended that improvement of financial technology instruments such as ATM transactions, volume of POS transactions, volume of point of sales transactions and volume of web transactions by deposit money banks and Central Bank of Nigeria would enhance the gross domestic product of the country.

measures used were ratio of bank sector credit for the private sector to GDP(BCP), value of electronic payment and domestic credit in the private sector to GDP, trade openness, inflation, fixed capital formation, government expenditure as macroeconomic indicators. The data collected were analysed using descriptive statistics, unit root test, autoregressive distributive lag, error correction model, diagnostic test and granger causality test. The findings of the study indicated that financial innovation (electronic payment) showed a unidirectional relationship with economic growth in Thailand; that financial innovation (banking sector credit in the private sector) disclosed a unidirectional relationship with economic growth in Thailand. The further noted that financial innovation affects economic growth in Thailand in the long run.

Khatib et al (2022) evaluated the association between financial inclusion and the performance of banks in Palestine using dynamic panel analysis applied to a sample of 11 banks, with two econometric models representing profitability indicators over a selected as a sample for the study. The study used multiple linear regression analysis to test the hypotheses of the study. Financial inclusion has a positive and moral effect on financial performance, and financial inclusion supports the interaction of (banks, customers) with banks in a way that leads to building long-term relationships with customers. The study suggested that the necessity of adopting financial inclusion by commercial banks as a strategy to improve financial performance. This is done by spreading a culture of financial inclusion and striving to deliver financial services to multiple regions.

Al-Eitan et al (2022) determined financial inclusion indicators that affect Profitability of Jordanian commercial banks: Panel data analysis. 13 Jordanian banks' data from 2009 to 2019 were examined to determine the above issue. The study applied fixed effects on a panel data regression model. The findings indicated that the number of loan accounts nine-year period (2012–2020). In addition to linear regression models, the generalized method of moments estimator was utilized. The results showed that access to financial services (e.g., the number of automated teller machines (ATMs) and the number of bank branches), service delivery (including the average costs to maintain a current account), and the quality of the products improve banks' profitability. However, point-of-sale terminals have no impact on profitability. Additionally, financial service utilization reflected in bank account number sand credit to small and medium-sized enterprises do not affect bank profitability, and among bank-specific variables, the nonperforming loan ratios, the cost-to-income ratios, and liquidity were found to be the main drivers of profitability. Policymakers in Palestine must prioritize FI by adopting rules that encourage lending to practices of financial institutions.

Naser and Alabassi (2022) analyzed the impact of financial inclusion on financial performance. The study adopted the quantitative approach, and (4) banks listed in the Iraqi Stock Exchange were
and size of deposits negatively and significantly impacted the profitability of the commercial banks in Jordan. However, the number of branches and ATMs had no significant effect on the bank's profitability. In sum, both leverage and bank size were the top two determinants of commercial banks' profitability in Jordan. Based on the findings, Jordanian policymakers can shift their focus to offering affordable financial services that support SMEs' loans and start-ups.

Empirical Knowledge Gap

Prior research has studied the relationship between financial inclusion and performance. Based on the empirical studies reviewed in term of concepts, years, scope, methodology adopted, variable employed, findings, conclusion and recommendations. The following gap were identified; (1) to the best of our knowledge, when analysing the literature, it seems to highlight that still there is no consensus with regards to the

relationship between the level of financial inclusion dimensions and performance of deposit money banks. Some studies had directed towards positive relationship while others had linked the financial inclusion to negative performance and some researchers had still found no relationship at all. (2) To the best of our knowledge none of the previous studies used the time frame of 2014 to 2023 on the listed deposits money banks in Nigeria. Therefore, this study is designed to bridge this knowledge gap that existed in the literature of financial inclusion and financial performance of listed deposit money banks in Nigeria.

METHODOLOGY

Research Design

In line with the problem and objectives of this study, the appropriate research design for this study is ex-post facto. Ex-post facto research design is used to cover investigations that are done retrospectively (after the effect has occurred) to identify possible cause-and-effect relations between the variables under investigation through observations of existing conditions and inquisitively searching back historically for the causal factors.

Population of the Study

The population of the study consisted of fourteen (14) deposit money banks listed on the floor of the Nigerian Exchange Group as at 31st December 2023.

Table 1 Listed Deposit Money Banks in Nigeria

S/N	Name of Banks
1	Access Holdings Plc
2	EcoBank Transnational Incorporation
3	FBN Holdings Plc
4	FCMB Group Plc
5	Fidelity Bank Plc
6	Guaranty Holding Company
7	Jaiz Bank Plc
8	Stanbic IBTC Holdings Plc
9	Sterling Bank Plc
10	Union Bank Plc
11	United Bank for Africa
12	Unity Bank Plc
13	Wema Bank Plc
14	Zenith Bank Plc

Source: NGX, 2024

Sample and Sampling Technique

This study adopted the simple random has known or probability of being selected for the investigation. It also gives every member of the population an equal chance of being selected for the study in an unbiased manner. Based on the foregoing criteria, a total sample size of seven (7) deposit money banks was realized employing purposive sampling technique giving rise to seventy (70) data points comprising of ten-year observations (i.e. 2014 -2023) per sampled firm.

Sources of Data

The main source of data for this study was Secondary data. Secondary data were further divided into raw secondary data, where there have been little, if any, processing and compiled secondary data which has received some degree of selection or summarizing. Secondary data was also divided according to the sources from which the data has been selected. These are survey-based secondary data and documentary secondary data (Gravetter & Forzano, 2019).

Explanation of Variables

The variables that were adopted to measure the effect of financial inclusion and performance of listed deposit money banks in Nigeria are presented in this section.

Table 2 Explanation of Variables

Variables	*Measures/ Abbreviations*	*Explanation*	*Mathematical Expression*
Independent Variable	Mobile Banking (MOB)	Is a service provided by a bank or other financial institution that allows its customers to conduct financial transactions remotely using a mobile device such as Smartphone or tablet etc	Total amount of mobile transaction received in a accounting financial year
	Loan granted to customers (LGC)	loan granted to customers refers to the total loans granted by the bank to it customers	Total amount of Loan Granted to customers in accounting financial year
	Deposits with banks (DWB)	Refer to the total deposits with the bank that is available for bank to exploit investment opportunities in an optimal manner that enhance positive bank financial performance	Logarithm of deposits with banks
Dependent Variable	Return on Assets (ROA)	Return on assets is a profitability ratio that provides how much profit a company is able to generate from its assets	Profit After TaxesTotal assets
Moderating Variable	Firm size	Firm size is a factor in determining company profitability in term of economies of scale that can be found in the traditional view of the company	Natural Log of Total assets

Source: Complied by Researcher, 2024

Model Specification

Model specification is the process that entails the determination of the independent variable to add or remove from a regression equation. According to Gujarati and Porter (2009), model specification is the determination of the endogenous and exogenous variables to be included in the model as well as the a priori expectation about the sign and the size of the parameters of the function. In line with the study objective and conceptual framework developed in chapter two, the required

functional relationship to test the developed hypotheses is presented as follows:

Performance = f(Financial Inclusion) ---------- (1)

There are serious statements in the literature that several firm-specific features are also likely to affect the degree of performance by companies.

Since performance is represented by three proxies of return on assets, return on equity and net interest margin and financial inclusion is also represented by three dimensions, mobile banking, loan granted to customers and deposits with banks. Also, with a firm size as controlling variable, we recast Eqn. (1) by decomposing it as follows:

ROA = f(MOB, LGC, DWB, FZ) ----------(1)

Therefore, in their respective empirical form, equation (1) and (1) are restated into the basic panel econometric form as:

$ROA_{it} = \beta_0 + \beta_1 MOB_{it} + \beta_2 LGC_{it} + \beta_3 DWB_{it} + \beta_3 FZ_{it} + \varepsilon_{it}$ ---------- 2

Where:

MOB = Mobile banking as dimension for financial inclusion

LGC = Loan granted to customers as dimension for financial inclusion

DWB = Deposits with banks as dimension for financial inclusion

ROA = Return on assets as proxy for performance

FZ = Firm size as proxy for control variable

t = time period under study

a_o = constant

a_1-a_4 = parameter or coefficient of explanatory variable

u = error term

Method of Data Analysis

This study adopted descriptive statistics and Panel Least Square (PLS) multiple regression with the aid of E-View 10. First, Microsoft Excel was employed to interpolate the raw data extracted based on the variables adopted for this study and the formula to be apply in calculating the measurement. Secondly, the data analysis was executed in three distinct stages. Firstly, a univariate (or descriptive) analysis was executed, followed by bivariate analysis and lastly, multivariate analysis.

Discussion Rule(s)

The relationship is assumed to be linear if the correlation coefficient ranges from -1.0 (perfect negative correlation) to +1.0 (perfect positive relationship). The correlation coefficient was calculated to determine the strength of the relationship between independent and dependent variables (Kothari, 2013). Finally, Panel Least Square (OLS) multiple regression technique was use to estimate the relationship between inventory management techniques variables and financial performance variables. Accept Ho_1 to Ho_8 for If P (Greater than) > 0.05. Otherwise reject.

Other tests of significance which was used in the study were:

R^2 – coefficient of determination was use to test the explanatory power of the independent variable;

T-test was use to test for the significance of the coefficient of the variables;

F-Ratio was use to test for the significance of the overall models;

Durbin-Watson (DW) test was use to test whether auto-correlation exist or not in error term (u).

ANALYSISAND DISCUSSION OF FINGINGS

Univariate Analysis (Descriptive Statistics of the variables)

The descriptive findings of the interaction of financial inclusion (= MOB = mobile banking, LGC = loan granted to customers and DWB= deposits with banks) and financial performance (ROA) as well as FS = firm size are reported in Table 3. The effect of financial inclusion dimensions and financial performance measures were investigated by testing the significance of their Mean differences. The result in Table 3 shows that the Mean differences between components of financial inclusion and financial performance are high and significant, thus providing a clue of a positive association between components of financial inclusion and financial performance.

Table 3 Descriptive Statistics of the Variables

	MOB	LGC	DWB	ROA
Mean	4.630573	6.444807	5.209470	0.697240
Median	4.728690	6.209209	5.366777	0.022197
Maximum	7.890555	9.248288	7.996804	14.85546
Minimum	1.612784	4.033424	0.903090	0.001269
Std. Dev.	1.590562	1.185826	1.351416	2.614369
Skewness	0.233936	0.933953	-0.255818	4.088945
Kurtosis	2.822076	3.153521	3.360756	18.86823
Jarque-Bera	0.730802	10.24520	1.143091	929.4793
Probability	0.693918	0.005961	0.564652	0.000000
Sum	324.1401	451.1365	364.6629	48.80681
Sum Sq. Dev.	174.5623	97.02670	126.0164	471.6098
Observations	70	70	70	70

Source: E-View Output (2024)

The results in table 3 had shown descriptive statistics of mobile banking (MOB). The results had a positive growth rate between the Minimum (1.612) to Maximum (7.890). The average Mean score of 4.630 indicates that mobile banking (MOB) contributes positively to Maximum (9.248). The average Mean score of 6.444 indicates that loan granted to customer (LGC) contributes higher to financial inclusion with a Standard Deviation value of 1.185. Furthermore, the results in table 4.1 had shown descriptive statistics of deposits with banks (DWB). The results had a positive growth rate between the Minimum (0.903) to Maximum (7.996). The average Mean score of 5.209 indicates that deposits with banks (DWB) contributed higher to financial inclusion with a Standard Deviation value of 1.351. The results in table 3 further showed a descriptive statistics of return on assets (ROA). The results had a positive growth rate between the Minimum (0.001) to Maximum (14.855). The average Mean score of 0.697 indicates that return on assets (ROA) had low financial performance rate with a Standard Deviation value of 2.614.

The table also shows that the observed distributions for MOB, LGC, DWB and ROA have skewness coefficients of 0.233, 0.933, -0.255 and 4.088 respectively, estimate the asymmetry of the distribution of time series data around its mean. MOB, LGC and ROA indicated positive skwness which implied that they has a long right tail while DWB indicated negative sknwness which implied that they has a short right tail. According to the information provided by kurtosis showed that LGC, DWB and ROA have leptokurtic values,

which suggest that the variables are higher than the kurtosis value of (3) that is clearly mesokurtic while MOB had a platykurtic values that is less than the average kurtosis value 3. Finally, the Probability of the Jarque-Bera stat for the variables MOB and DWB was higher than 0.05 implying that the data on these variables were normally distributed while LGC and ROA was less than 0.05 implying that the data on these variables were not normally distributed hence, the researcher need to carry out a normality and diagnostics test to confirm the normality of the variables before further estimation.

Unit Root Test

Table 4 Result for Normality Checking of data

Variable	ADF FISHERS At Level	I ADF FISHERS At 1st Difference	ORDER OF INTEGRATION	REMARK
MOB	0.0004	0.0000	I(0)	Stationary
LGC	0.0122	0.0001	I(0)	Stationary
DWB	0.0000	0.0000	I(0)	Stationary
ROA	0.0321	0.0000	I(0)	Stationary
FS	0.0123	0.0021	I(0)	Stationary

Source: E-View Output, Version 12

The empirical results of the unit root test at 5 percent critical levels in table 4.2 above shows that all the variables of interest are I(0), that is, stationary at levels. Their p-values are less than 5% with respect to ADF Fisher.

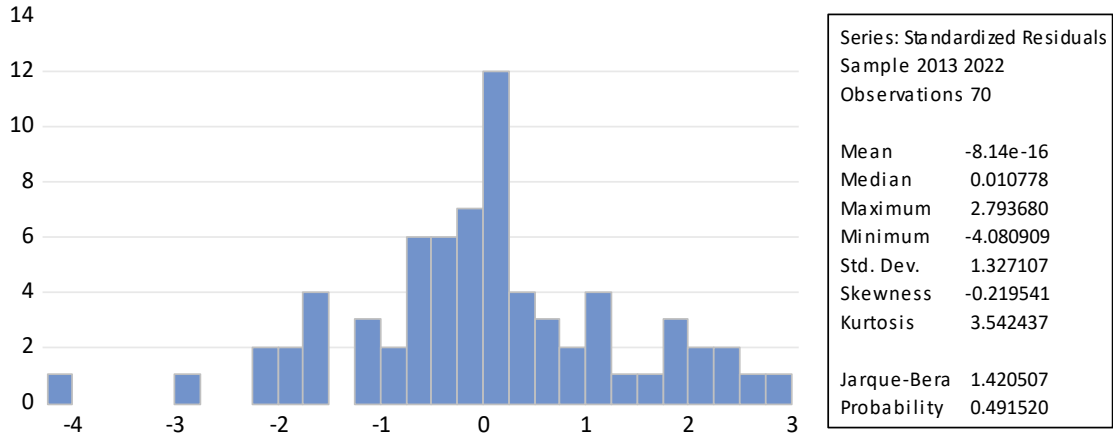
Diagnostic Test Results

The following sections discuss the results of the diagnostic tests that were conducted to ensure whether the data fits the basic assumptions of the classical linear regression model. The implication of the test, limits therein, test results and their discussion are also presented.

Normality Test

Normality Test is a test conducted with the aim to assess the distribution of data in a group of data or variables, whether the distribution of data is normally distributed or not. Normality Test is useful for determining data that has been collected in normal distribution or taken from a normal population. The results of the Residual histogram normality test are presented in figure 1.

Figure 1: Histogram of Residuals



Source: E-View Output, Version 12

The figure 4.1 above disclosed diagnostic test using normality test of residuals histograms as criteria for decision. The result indicates that the skeweness value is negative implies that the models has long right tail, the kurtosis value is greater than 3 that is clearly mesokurtic and finaaly, Jarque-Beta probability value is greater than 0.05 (0.491>0.05) and this means that that the residuals are normally distributed hence fixed effect regression model I can be estimated.

Multiriate Analysis (Regression Analysis)

Table 5 Hausman Test for the Model

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	18.021413	4	0.0012

Source: E-View Output, Version 12

Hausman test is a test of the consistency of an estimator, in so doing, evaluating the fitness of the statistical model to the data gathered. With this test, the study identified if the Random-effect or Fixed-effect model should be adopted for further analysis. From table 5, the Hausman test shows that individual effects are not independent of the explanatory variable given that the probability value of 0.0012 is below the 5% significant level, thereby rejecting the null hypothesis. Accordingly, the study adopts the Fixed Panel (PLS) estimation.

Table 6 Regression Analysis of the Model

Dependent Variable: ROA
Method: Panel Least Squares
Date: 9/21/24 Time: 04:49
Sample: 2014 2023
Periods included: 10
Cross-sections included: 7
Total panel (balanced) observations: 70

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MOB	-0.014680	0.215423	-0.068144	0.9459
LGC	-0.145734	0.942493	-0.154626	0.8777
DWB	0.221261	0.369309	0.599122	0.5518
FS	-2.279019	1.007905	-2.261144	0.0281
C	15.80410	3.004361	5.260389	0.0000

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.716857	Mean dependent var	0.697240
Adjusted R-squared	0.609263	S.D. dependent var	2.614369
S.E. of regression	1.634215	Akaike info criterion	4.055159
Sum squared resid	133.5329	Schwarz criterion	4.697586
Log likelihood	-121.9306	Hannan-Quinn criter.	4.310339
F-statistic	6.662595	Durbin-Watson stat	1.390808
Prob(F-statistic)	0.000000		

Source: E-View Output, Version 12

The results in table 6 revealed a correlation coefficient of (R^2= 0.716, Adjusted R^2= 0.609, Std. Error of estimate = 1.634, DW=1.390) which had demonstrated that relationship exist between independent variable {(mobile banking (MOB), loan granted to customers (LGC) and deposits with banks (DWB)} and dependent variable {(Return on Assets (ROA)}. This therefore implies that there was a variation of 60.9% between the independent and dependent variables. Thus, it means that mobile banking (MOB), loan granted to customers (LGC) and deposits with banks (DWB) on return on assets (ROA) explained 60.9% of the financial performance of listed deposit money banks in Nigeria. The remaining variation is the error term and is attributed to other factors not included in the model. The remaining value for return on assets (ROA) is low since the unexplained variation is above 39.1%. The Durbin-Watson statistic test discovered that there is a positive evidence of autocorrelation in the time series data set. Also, The F statistics value was 6.66 with a P value of 0.000 which was less than 0.05. This indicates that mobile banking (MOB), loan granted to customers (LGC) and deposits with banks (DWB) and return on assets (ROA) were statistically significant in explaining variations in the model.

Test of Hypotheses

Statement of Hypotheses

Ho_1: Mobile banking has no significant effect on return on assets of listed deposit money banks in Nigeria.

.**Decision Rule:** Accept Ho if P > 0.05. Otherwise reject

return on assets (ROA) which disclosed a t-Statistic of -0.068 and its P-value is 0.945 >0.05. This implies that mobile banking has a negative and insignificant effect on return on assets which implied that one unit increase in mobile banking will lead to 0.06% decrease in return on assets of listed deposit money banks in Nigeria. Thus the null hypothesis one is accepted which implied that mobile banking has no significant effect on return on assets of listed deposit money banks in Nigeria. The finding of this study agreed with Tiosanna et al (2023), who analyzed the effect of the use of internet banking and mobile banking on stock prices through the financial performance of Indonesian banks. Result showed that mobile banking variable has a negative and insignificant effect on stock prices and the financial performance variable has a positive and insignificant effect on stock prices. However, the findings disagreed with following findings, Olubukola, et al (2023) studied digital financial services and the

Decision Rule: Accept Ho if P > 0.05. Otherwise reject

Decision: The result in table 6 revealed that the regression coefficient of loan granted to customers (LGC) on return on assets (ROA) which disclosed a t-Statistic of -0.154 and its P-value is 0.877 >0.05. This implies that loan granted to customers has a negative and insignificant effect on return on assets which implied that one unit increase in loan granted to customers (LGC) will lead to 0.15% decrease in return on assets of listed deposit money banks in Nigeria. Thus the null hypothesis two is accepted which implied that loan granted to customers has no significant effect on return on assets of listed deposit money banks in Nigeria. The finding of this study disagreed with the following prior

Decision: The result in table 6 revealed that the regression coefficient of mobile banking (MOB) on

Nigerian economy from 2009 to 2017. The ordinary least square results indicated that volume of mobile banking positively and significantly affects gross domestic product. Makumba and Phiri (2023) evaluated the effect of digital banking channels on the performance of commercial banks with prime focus on First National Bank Zambia. The correlation and regression analysis result showed that mobile banking, Internet card banking, electronic banking and telephone banking have a positive correlation with commercial bank performance in terms of profitability, performance efficiency and effectiveness. Barasa et al (2017) findings established that there is a positive effect of internet banking on financial performance of commercial banks.

H_{02}: Loan granted to customers has no significant effect on return on assets of listed deposit money banks in Nigeria

studies, Chauvet and Jacolin (2017) studied the impact of financial inclusion and bank concentration on the performance of firms in developing and emerging countries. The results showed that financial inclusion, measured as the distribution of financial services across firms, has a positive impact on firm growth. In another study, Grohmann et al (2018) explained that financial literacy has an impact on improving financial inclusion. Shen et al (2020) investigated the channels through which financial inclusion can be achieved in China. The study showed that the direct impact comes from the use of digital financial products and the level of financial literacy. Ahmed and Mallick (2019) found that higher levels of financial inclusion contribute to greater bank stability.

H_{03}: Deposit to banks has no significant effect on return on assets of listed deposit money banks in Nigeria.

Decision Rule: Accept Ho if P > 0.05. Otherwise reject

Decision: The result in table 6 revealed that the regression coefficient of deposit to banks (DWB) on return on assets (ROA) which disclosed a t-Statistic of 0.599 and its P-value of listed deposit money banks in Nigeria. Thus the null hypothesis two is accepted which implied that deposit to banks has no significant effect on return on assets of listed deposit money banks in Nigeria. The finding of this study agreed with the following prior studies, Byukusenge and Muiruri (2021) indicated that the adoption of financial inclusion strategies leads to the delivery of banking services (loans, deposits) to customers with high flexibility, and then this is reflected positively (ROA, ROE). Hubarieva et al (2017) pointed out that the attraction of deposits by the banks in Ukraine can be considered as the foundation of the resource base, an essential component of the financial ability of the banks. Rachan (2011) concluded that the commercial banks' seizing of investment opportunities located in remote areas leads to improving financial performance. Similarly, the results of the study of Hannoon et al, 2021) indicated that banks focus on developing and emerging countries (delivery of banking services to those countries), which would have a positive impact on financial performance. Also Agbim (2020) found that the adoption of financial inclusion strategies helped medium and small companies in Nigeria to significantly improve their financial performance. Kalunda (2019) uncovered that financial inclusion had a significant effect on bank performance. Musau et al (2018) also discovered that the stability of commercial banks was significantly impacted by financial inclusion. Harelimana (2016) concluded that customers prefer to deal with banks that provide them with banking services in the right quantity and time, and this positively affects the financial performance of these banks.

is 0.551 >0.05. This implies that deposit to banks has a positive and insignificant effect on return on assets which implied that one unit increase in deposit to banks (DWB) will lead to 0.599% increase in return on assets

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This research work assessed the effect of financial inclusion and financial performance of listed deposit money banks in Nigeria. In agreement with prior evidence from developed countries that show significant linkage between financial inclusion and financial performance, our study concluded the following;

1. Mobile banking has an insignificant effect with return on assets of listed deposit money banks in Nigeria,
2. Loan granted to customers has an insignificant effect with net return on assets of listed deposit money banks in Nigeria,
3. Deposits with banks has an insignificant effect with return on assets of listed deposit money banks in Nigeria,

Recommendations

In consonance with this study's findings, it is recommended that:

1. The study recommends that all banks should encourage their customers to use automated teller machines oftenly

based on the results of the study that automated teller machines had a noteworthy effect on return on assets and return on equity of deposit money banks. Relying on automated teller machines would minimize the customers time and costs rather than visiting the branches physically.

2. The researcher recommended that banks should move towards attracting customers' savings from money, by providing some incentives, for example, paying interest with periods (quarterly, semi-annual).
3. The necessity for the surveyed banks to set target levels of granted loans (the tendency to raise the granted loans to specific levels, and not to exceed these levels, and in return, and not to lower the level of the granted loans below the target limits), if this is reflected positively on the returns (return on ownership right) for these banks.

Contribution to Scholarship

The study on effects of financial inclusion on financial performance of listed deposit money banks in Nigeria contributes to the body of knowledge since it expounds on loan granted to customers, deposits with banks and banks branches spread and their effect on financial performance. The reviewed literature has added materials in the financial literature. The theories reviewed in this study have enriched the relationship to financial inclusion and financial performance of listed deposit money banks. Financial intermediation theory explains why banks can take the responsibility of delegated monitoring by effectively monitoring borrowers. On the other hand, banks lend theory relates to how financial institution like bank deliver their financial services through a retail agent, where the bank develops financial products and services but distribute them through a retail agents. This can be a way of mobilizing deposits commercial banks use as a new model to increase financial inclusion and facilitate the transaction especially in the areas where the bank is not present.

Commercial bank branches are critical for financial inclusion channel with potentials of driving entrepreneurial growth particularly in the context of the retail and the wholesale sub-sectors contributions to GDP. Its establishment in all the rural areas in Nigeria will positively influence account ownership in a formal financial institution thereby achieving capital accumulation through which entrepreneurial growth and increased contributions to GDP will be met.

The findings from this study imply that regulators should prosecute the financial inclusion programme by ensuring that the driving policy has in-built strategies to spread out to more areas and improve financial and general infrastructure nationwide.

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